

## GMAT PREP

### Passage 1

Although genetic mutations in bacteria and viruses can lead to epidemics, some epidemics are caused by bacteria and viruses that have undergone no significant genetic change. In analyzing the latter, scientists have discovered the importance of social and ecological factors to epidemics. Poliomyelitis, for example, emerged as an epidemic in the United States in the twentieth century; by then, modern sanitation was able to delay exposure to polio until adolescence or adulthood, at which time polio infection produced paralysis. Previously, infection had occurred during infancy, when it typically provided lifelong immunity without paralysis. Thus, the hygiene that helped prevent typhoid epidemics indirectly fostered a paralytic polio epidemic.

Another example is Lyme disease, which is caused by bacteria that are transmitted by deer ticks. It occurred only sporadically during the late nineteenth century but has recently become prevalent in parts of the United States, largely due to an increase in the deer population that occurred simultaneously with the growth of the suburbs and increased outdoor recreational activities in the deer's habitat. Similarly, an outbreak of dengue hemorrhagic fever became an epidemic in Asia in the 1950's because of ecological changes that caused *Aedes aegypti*, the mosquito that transmits the dengue virus, to proliferate. The stage is now set in the United States for a dengue epidemic because of the inadvertent introduction and wide dissemination of another mosquito, *Aedes albopictus*.

1. The passage suggests that a lack of modern sanitation would make which of the following most likely to occur?

- A An outbreak of Lyme disease
- B An outbreak of dengue hemorrhagic fever
- C An epidemic of typhoid
- D An epidemic of paralytic polio among infants
- E An epidemic of paralytic polio among adolescents and adults

2. According to the passage, the outbreak of dengue hemorrhagic fever in the 1950's occurred for which of the following reasons?

- A The mosquito *Aedes aegypti* was newly introduced into Asia.
- B The mosquito *Aedes aegypti* became more numerous.
- C The mosquito *Aedes albopictus* became infected with the dengue virus.
- D Individuals who would normally acquire immunity to the dengue virus as infants were not infected until later in life.
- E More people began to visit and inhabit areas in which mosquitos live and breed.

3. It can be inferred from the passage that Lyme disease has become prevalent in parts of the United States because of which of the following?

- A The inadvertent introduction of Lyme disease bacteria to the United States
- B The inability of modern sanitation methods to eradicate Lyme disease bacteria
- C A genetic mutation in Lyme disease bacteria that makes them more virulent
- D The spread of Lyme disease bacteria from infected humans to noninfected humans
- E An increase in the number of humans who encounter deer ticks

## Passage 1

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4. Which of the following can most reasonably be concluded about the mosquito *Aedes albopictus* on the basis of information given in the passage?

- A It is native to the United States.
- B It can proliferate only in Asia.
- C It transmits the dengue virus.
- D It caused an epidemic of dengue hemorrhagic fever in the 1950's.
- E It replaced *Aedes aegypti* in Asia when ecological changes altered *Aedes aegypti*'s habitat.

5. Which of the following best describes the organization of the passage?

- A A paradox is stated, discussed and left unresolved.
- B Two opposing explanations are presented, argued, and reconciled.
- C A theory is proposed and is then followed by descriptions of three experiments that support the theory.
- D A generalization is stated and is then followed by three instances that support the generalization.
- E An argument is described and is then followed by three counterexamples that refute the argument.

6. Which of the following, if true, would most strengthen the author's assertion about the cause of the Lyme disease outbreak in the United States?

- A The deer population was smaller in the late nineteenth century than in the mid-twentieth century.
- B Interest in outdoor recreation began to grow in the late nineteenth century.
- C In recent years the suburbs have stopped growing.
- D Outdoor recreation enthusiasts routinely take measures to protect themselves against Lyme disease.
- E Scientists have not yet developed a vaccine that can prevent Lyme disease.

## Passage 2

Coral reefs are one of the most fragile, biologically complex, and diverse marine ecosystems on Earth. This ecosystem is one of the fascinating paradoxes of the biosphere: how do clear, and thus nutrient-poor, waters support such prolific and productive communities? Part of the answer lies within the tissues of the corals themselves. Symbiotic cells of algae known as zooxanthellae carry out photosynthesis using the metabolic wastes of the coral thereby producing food for themselves, for their corals, hosts, and even for other members of the reef community. This symbiotic process allows organisms in the reef community to use sparse nutrient resources efficiently.

Unfortunately for coral reefs, however, a variety of human activities are causing worldwide degradation of shallow marine habitats by adding nutrients to the water.

Agriculture, slash-and-burn land clearing, sewage disposal and manufacturing that creates waste by-products all increase nutrient loads in these waters. Typical symptoms of reef decline are destabilized herbivore populations and an increasing abundance of algae and filter-feeding animals. Declines in reef communities are consistent with observations that nutrient input is increasing in direct proportion to growing human populations, thereby threatening reef communities sensitive to subtle changes in nutrient input to their waters.

1. The passage is primarily concerned with:

- (A) describing the effects of human activities on algae in coral reefs
- (B) explaining how human activities are posing a threat to coral reef communities
- (C) discussing the process by which coral reefs deteriorate in nutrient-poor waters
- (D) explaining how coral reefs produce food for themselves
- (E) describing the abundance of algae and filter feeding animals in coral reef areas

2. The passage suggests which of the following about coral reef communities?

- (A) Coral reef communities may actually be more likely to thrive in waters that are relatively low in nutrients.
- (B) The nutrients on which coral reef communities thrive are only found in shallow waters.
- (C) Human population growth has led to changing ocean temperatures, which threatens coral reef communities.
- (D) The growth of coral reef communities tends to

destabilize underwater herbivore populations.

(E) Coral reef communities are more complex and diverse than most ecosystems located on dry land.

3. The author refers to "filter-feeding animals" (lines 23–24) in order to

- (A) provide an example of a characteristic sign of reef deterioration
- (B) explain how reef communities acquire sustenance for survival
- (C) identify a factor that helps herbivore populations thrive
- (D) indicate a cause of decreasing nutrient input in waters that reefs inhabit
- (E) identify members of coral reef communities that rely on coral reefs for nutrients

4. According to the passage, which of the following is a factor that is threatening the survival of coral reef communities?

- (A) The waters they inhabit contain few nutrient resources.
- (B) A decline in nutrient input is disrupting their symbiotic relationship with zooxanthellae.
- (C) The degraded waters of their marine habitats have reduced their ability to carry out photosynthesis.
- (D) They are too biologically complex to survive in habitats with minimal nutrient input.
- (E) Waste by-products result in an increase in nutrient input to reef communities.

5. It can be inferred from the passage that the author describes coral reef communities as paradoxical most likely for which of the following reasons?

- (A) They are thriving even though human activities have depleted the nutrients in their environment.
- (B) They are able to survive in spite of an overabundance of algae inhabiting their waters.
- (C) They are able to survive in an environment with limited food resources.
- (D) Their metabolic wastes contribute to the degradation of the waters that they inhabit.
- (E) They are declining even when the water surrounding them remains clear.

### Passage 3

During the nineteenth century, occupational information about women that was provided by the United States census—a population count conducted each decade—became more detailed and precise in response to social changes. Through 1840, simple enumeration by household mirrored a home-based agricultural economy and hierarchical social order: the head of the household (presumed male or absent) was specified by name, whereas other household members were only indicated by the total number of persons counted in various categories, including occupational categories. Like farms, most enterprises were family-run, so that the census measured economic activity as an attribute of the entire household, rather than of individuals.

The 1850 census, partly responding to antislavery and women's rights movements, initiated the collection of specific information about each individual in a household. Not until 1870 was occupational information analyzed by gender: the census superintendent reported 1.8 million women employed outside the home in "gainful and reputable occupations." In addition, he arbitrarily attributed to each family one woman "keeping house." Overlap between the two groups was not calculated until 1890, when the rapid entry of women into the paid labor force and social issues arising from industrialization were causing women's advocates and women statisticians to press for more thorough and accurate accounting of women's occupations and wages.

1) The primary purpose of the passage is to

- (A) explain and critique the methods used by early statisticians
- (B) compare and contrast a historical situation with a current-day one
- (C) describe and explain a historical change
- (D) discuss historical opposition to an established institution
- (E) trace the origin of a contemporary controversy

2) Each of the following aspects of nineteenth-century United States censuses is mentioned in the passage EXCEPT the

- (A) year in which data on occupations began to be analyzed by gender
- (B) year in which specific information began to be collected on individuals in addition to the head of the household
- (C) year in which overlap between women employed outside the home and women keeping house was first calculated

- (D) way in which the 1890 census measured women's income levels and educational backgrounds
- (E) way in which household members were counted in the 1840 census

3) It can be inferred from the passage that the 1840 United States census provided a count of which of the following?

- (A) Women who worked exclusively in the home
- (B) People engaged in nonfarming occupations
- (C) People engaged in social movements
- (D) Women engaged in family-run enterprises
- (E) Men engaged in agriculture

4) The author uses the adjective "simple" in line 5 most probably to emphasize that the

- (A) collection of census information became progressively more difficult throughout the nineteenth-century
- (B) technology for tabulating census information was rudimentary during the first half of the nineteenth century
- (C) home-based agricultural economy of the early nineteenth century was easier to analyze than the later industrial economy
- (D) economic role of women was better defined in the early nineteenth century than in the late nineteenth century
- (E) information collected by early-nineteenth-century censuses was limited in its amount of detail

5) The passage suggests which of the following about the "women's advocates and women statisticians" mentioned in lines 27-28?

- (A) They wanted to call attention to the lack of pay for women who worked in the home.
- (B) They believed that previous census information was inadequate and did not reflect certain economic changes in the United States.
- (C) They had begun to press for changes in census-taking methods as part of their participation in the antislavery movement.
- (D) They thought that census statistics about women would be more accurate if more women were employed as census officials.
- (E) They had conducted independent studies that disputed the official statistics provided by previous United States censuses.

#### Passage 4

Excess inventory, a massive problem for many businesses, has several causes, some of which are unavoidable. Overstocks may accumulate through production overruns or errors. Certain styles and colors prove unpopular. With some products—computers and software, toys, and books—last year’s models are difficult to move even at huge discounts. Occasionally the competition introduces a better product. But in many cases the public’s buying tastes simply change, leaving a manufacturer or distributor with thousands (or millions) of items that the fickle public no longer wants.

One common way to dispose of this merchandise is to sell it to a liquidator, who buys as cheaply as possible and then resells the merchandise through catalogs, discount stores, and other outlets. However, liquidators may pay less for the merchandise than it cost to make it. Another way to dispose of excess inventory is to dump it. The corporation takes a straight cost write-off on its taxes and hauls the merchandise to a landfill. Although it is hard to believe, there is a sort of convoluted logic to this approach. It is perfectly legal, requires little time or preparation on the company’s part, and solves the problem quickly. The drawback is the remote possibility of getting caught by the news media. Dumping perfectly useful products can turn into a public relations nightmare. Children living in poverty are freezing and XYZ Company has just sent 500 new snow-suits to the local dump. **Parents of young children are barely getting by and QPS Company dumps 1,000 cases of disposable diapers because they have slight imperfections.**

The managers of these companies are not deliberately wasteful; they **are simply unaware** of all their alternatives. In 1976 the Internal Revenue Service provided a tangible incentive for businesses to contribute their products to charity. The new tax law allowed corporations to deduct the cost of the product donated plus half the difference between cost and fair market selling price, with the provision that deductions cannot exceed twice cost. Thus, the federal government sanctions—indeed, encourages—an above-cost federal tax deduction for companies that donate inventory to charity.

1. The author mentions each of the following as a cause of excess inventory EXCEPT
  - (A) production of too much merchandise
  - (B) inaccurate forecasting of buyers’ preferences
  - (C) unrealistic pricing policies
  - (D) products’ rapid obsolescence
  - (E) availability of a better product
2. The passage suggests that which of the following is a kind of product that a liquidator who sells to discount stores would be unlikely to wish to acquire?
  - (A) Furniture
  - (B) Computers
  - (C) Kitchen equipment
  - (D) Baby-care products
  - (E) Children’s clothing
3. The passage provides information that supports which of the following statements?
  - (A) Excess inventory results most often from insufficient market analysis by the manufacturer.
  - (B) Products with slight manufacturing defects may contribute to excess inventory.
  - (C) Few manufacturers have taken advantage of the changes in the federal tax laws.
  - (D) Manufacturers who dump their excess inventory are often caught and exposed by the news media.
  - (E) Most products available in discount stores have come from manufacturers’ excess-inventory stock.
4. The author cites the examples in lines 25-29 [**Parents of young children are barely getting by and QPS Company dumps 1,000 cases of disposable diapers because they have slight imperfections.**] most probably in order to illustrate
  - (A) the fiscal irresponsibility of dumping as a policy for dealing with excess inventory
  - (B) the waste-management problems that dumping new products creates
  - (C) the advantages to the manufacturer of dumping as a policy
  - (D) alternatives to dumping explored by different companies
  - (E) how the news media could portray dumping to the detriment of the manufacturer’s reputation

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Excess inventory, a massive problem for many businesses, has several causes, some of which are unavoidable. Overstocks may accumulate through production overruns or errors. Certain styles and colors prove unpopular. With some products—computers and software, toys, and books—last year’s models are difficult to move even at huge discounts. Occasionally the competition introduces a better product. But in many cases the public’s buying tastes simply change, leaving a manufacturer or distributor with thousands (or millions) of items that the fickle public no longer wants.

One common way to dispose of this merchandise is to sell it to a liquidator, who buys as cheaply as possible and then resells the merchandise through catalogs, discount stores, and other outlets. However, liquidators may pay less for the merchandise than it cost to make it. Another way to dispose of excess inventory is to dump it. The corporation takes a straight cost write-off on its taxes and hauls the merchandise to a landfill. Although it is hard to believe, there is a sort of convoluted logic to this approach. It is perfectly legal, requires little time or preparation on the company’s part, and solves the problem quickly. The drawback is the remote possibility of getting caught by the news media. Dumping perfectly useful products can turn into a public relations nightmare. Children living in poverty are freezing and XYZ Company has just sent 500 new snow-suits to the local dump. **Parents of young children are barely getting by and QPS Company dumps 1,000 cases of disposable diapers because they have slight imperfections.**

The managers of these companies are not deliberately wasteful; they **are simply unaware** of all their alternatives. In 1976 the Internal Revenue Service provided a tangible incentive for businesses to contribute their products to charity. The new tax law allowed corporations to deduct the cost of the product donated plus half the difference between cost and fair market selling price, with the provision that deductions cannot exceed twice cost. Thus, the federal government sanctions—indeed, encourages—an above-cost federal tax deduction for companies that donate inventory to charity.

5. By asserting that manufacturers “**are simply unaware**” (line 31), the author suggests which of the following?
- (A) Manufacturers might donate excess inventory to charity rather than dump it if they knew about the provision in the federal tax code.
  - (B) The federal government has failed to provide sufficient encouragement to manufacturers to make use of advantageous tax policies.
  - (C) Manufacturers who choose to dump excess inventory are not aware of the possible effects on their reputation of media coverage of such dumping.
  - (D) The manufacturers of products disposed of by dumping are unaware of the needs of those people who would find the products useful.
  - (E) The manufacturers who dump their excess inventory are not familiar with the employment of liquidators to dispose of overstock.

6. The information in the passage suggests that which of the following, if true, would make donating excess inventory to charity less attractive to manufacturers than dumping?
- (A) The costs of getting the inventory to the charitable destination are greater than the above-cost tax deduction.
  - (B) The news media give manufacturers’ charitable contributions the same amount of coverage that they give dumping.
  - (C) No straight-cost tax benefit can be claimed for items that are dumped.
  - (D) The fair-market value of an item in excess inventory is 1.5 times its cost.
  - (E) Items end up as excess inventory because of a change in the public’s preferences.

7. Information in the passage suggests that one reason manufacturers might take advantage of the tax provision mentioned in the last paragraph is that
- (A) there are many kinds of products that cannot be legally dumped in a landfill
  - (B) liquidators often refuse to handle products with slight imperfections
  - (C) the law allows a deduction in excess of the cost of manufacturing the product
  - (D) media coverage of contributions of excess-inventory products to charity is widespread and favorable
  - (E) no tax deduction is available for products dumped or sold to a liquidator

### Passage 5

A recent study has provided clues to predator-prey dynamics in the late Pleistocene era. Researchers compared the number of tooth fractures in present-day carnivores with tooth fractures in carnivores that lived 36,000 to 10,000 years ago and that were preserved in the Rancho La Brea tar pits in Los Angeles. The breakage frequencies in the extinct species were strikingly higher than those in the present-day species.

In considering possible explanations for this finding, the researchers dismissed demographic bias because older individuals were not over represented in the fossil samples. They rejected preservational bias because a total absence of breakage in two extinct species demonstrated that the fractures were not the result of abrasion within the pits. They ruled out local bias because breakage data obtained from other Pleistocene sites were similar to the La Brea data. The explanation they consider most plausible is behavioral differences between extinct and present-day carnivores—in particular, more contact between the teeth of predators and the bones of prey due to more thorough consumption of carcasses by the extinct species. Such thorough carcass consumption implies to the researchers either that prey availability was low, at least seasonally, or that there was intense competition over kills and a high rate of carcass theft due to relatively high predator densities.

1. The primary purpose of the passage is to
  - (A) present several explanations for a well-known fact
  - (B) suggest alternative methods for resolving a debate
  - (C) argue in favor of a controversial theory
  - (D) question the methodology used in a study
  - (E) discuss the implications of a research finding
2. According to the passage, compared with Pleistocene carnivores in other areas, Pleistocene carnivores in the La Brea area
  - (A) included the same species, in approximately the same proportions
  - (B) had a similar frequency of tooth fractures
  - (C) populated the La Brea area more densely
  - (D) consumed their prey more thoroughly
  - (E) found it harder to obtain sufficient prey
3. According to the passage, the researchers believe that the high frequency of tooth breakage in carnivores found at La Brea was caused primarily by
  - (A) the aging process in individual carnivores
  - (B) contact between the fossils in the pits

- (C) poor preservation of the fossils after they were removed from the pits
- (D) the impact of carnivores' teeth against the bones of their prey
- (E) the impact of carnivores' teeth against the bones of other carnivores during fights over kills

4. The researchers' conclusion concerning the absence of demographic bias would be most seriously undermined if it were found that
  - (A) the older an individual carnivore is, the more likely it is to have a large number of tooth fractures
  - (B) the average age at death of a present-day carnivore is greater than was the average age at death of a Pleistocene carnivore
  - (C) in Pleistocene carnivore species, older individuals consumed carcasses as thoroughly as did younger individuals
  - (D) the methods used to determine animals' ages in fossil samples tend to misidentify many older individuals as younger individuals
  - (E) data concerning the ages of fossil samples cannot provide reliable information about behavioral differences between extinct carnivores and present-day carnivores

5. According to the passage, if the researchers had NOT found that two extinct carnivore species were free of tooth breakage, the researchers would have concluded that
  - (A) the difference in breakage frequencies could have been the result of damage to the fossil remains in the La Brea pits
  - (B) the fossils in other Pleistocene sites could have higher breakage frequencies than do the fossils in the La Brea pits
  - (C) Pleistocene carnivore species probably behaved very similarly to one another with respect to consumption of carcasses
  - (D) all Pleistocene carnivore species differed behaviorally from present-day carnivore species
  - (E) predator densities during the Pleistocene era were extremely high

6. The passage suggests that tooth fractures in Pleistocene carnivores probably tended to occur less frequently
  - (A) during periods in which more prey were available
  - (B) at sites distant from the La Brea area
  - (C) in older individual carnivores
  - (D) in species that were not preserved as fossils
  - (E) in species that regularly stole carcasses from other species

## Passage 6

Historians of women's labor in the United States at first largely disregarded the story of female service workers — women earning wages in occupations such as salesclerk, domestic servant, and office secretary. These historians focused instead on factory work, primarily because it seemed so different from traditional, unpaid "women's work" in the home, and because the underlying economic forces of industrialism were presumed to be gender-blind and hence emancipatory in effect. Unfortunately, emancipation has been less profound than expected, for not even industrial wage labor has escaped continued sex segregation in the workplace.

To explain this **unfinished revolution** in the status of women, historians have recently begun to emphasize the way a prevailing definition of femininity often determines the kinds of work allocated to women, even when such allocation is inappropriate to new conditions. For instance, early textile-mill entrepreneurs in justifying women's employment in wage labor, made much of the assumption that women were by nature skillful at detailed tasks and patient in carrying out repetitive chores; the mill owners thus imported into the new industrial order hoary stereotypes associated with the homemaking activities they presumed to have been the purview of women. Because women accepted the more unattractive new industrial tasks more readily than did men, such jobs came to be regarded as female jobs. And employers, who assumed that women's "real" aspirations were for marriage and family life, declined to pay women wages commensurate with those of men. Thus many lower-skilled, lower-paid, less secure jobs came to be perceived as 'female.'

More remarkable than the origin has been the persistence of such sex segregation in twentieth-century industry. Once an occupation came to be perceived as 'female,' employers showed surprisingly little interest in changing that perception, even when higher profits beckoned. And despite the urgent need of the United States during the Second World War to mobilize its human resources fully, job segregation by sex characterized even the most important war industries. Moreover, once the war ended, employers quickly returned to men most of the 'male' jobs that women had been permitted to master.

1. According to the passage, job segregation by sex in the United States was

(A) greatly diminished by labor mobilization during the Second World War

(B) perpetuated by those textile-mill owners who argued in favor of women's employment in wage labor

(C) one means by which women achieved greater job security

(D) reluctantly challenged by employers except when the economic advantages were obvious

(E) a constant source of labor unrest in the young textile industry

2. According to the passage, historians of women's labor focused on factory work as a more promising area of research than service-sector work because factory work

(A) involved the payment of higher wages

(B) required skill in detailed tasks

(C) was assumed to be less characterized by sex segregation

(D) was more readily accepted by women than by men

(E) fitted the economic dynamic of industrialism better

3. It can be inferred from the passage that early historians of women's labor in the United States paid little attention to women's employment in the service sector of the economy because

(A) the extreme variety of these occupations made it very difficult to assemble meaningful statistics about them

(B) fewer women found employment in the service sector than in factory work

(C) the wages paid to workers in the service sector were much lower than those paid in the industrial sector

(D) women's employment in the service sector tended to be much more short-term than in factory work

(E) employment in the service sector seemed to have much in common with the unpaid work associated with homemaking

4. The passage supports which of the following statements about the early mill owners mentioned in the second paragraph?

(A) They hoped that by creating relatively unattractive "female" jobs they would discourage women from losing interest in marriage and family life.

(B) They sought to increase the size of the available labor force as a means to keep men's wages low.

(C) They argued that women were inherently suited to do well in particular kinds of factory work.

(D) They thought that factory work bettered the condition of women by emancipating them from dependence on income earned by men.

(E) They felt guilty about disturbing the traditional division of labor in family.

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To explain this **unfinished revolution** in the status of women, historians have recently begun to emphasize the way a prevailing definition of femininity often determines the kinds of work allocated to women, even when such allocation is inappropriate to new conditions. For instance, early textile-mill entrepreneurs in justifying women's employment in wage labor, made much of the assumption that women were by nature skillful at detailed tasks and patient in carrying out repetitive chores; the mill owners thus imported into the new industrial order hoary stereotypes associated with the homemaking activities they presumed to have been the purview of women. Because women accepted the more unattractive new industrial tasks more readily than did men, such jobs came to be regarded as female jobs. And employers, who assumed that women's "real" aspirations were for marriage and family life, declined to pay women wages commensurate with those of men. Thus many lower-skilled, lower-paid, less secure jobs came to be perceived as 'female.'

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5. It can be inferred from the passage that the "**unfinished revolution**" the author mentions in line 13 refers to the

(A) entry of women into the industrial labor market

- (B) recognition that work done by women as homemakers should be compensated at rates comparable to those prevailing in the service sector of the economy
- (C) development of a new definition of femininity unrelated to the economic forces of industrialism
- (D) introduction of equal pay for equal work in all professions
- (E) emancipation of women wage earners from gender-determined job allocation

6. The passage supports which of the following statements about hiring policies in the United States?

- (A) After a crisis many formerly "male" jobs are reclassified as "female" jobs.
- (B) Industrial employers generally prefer to hire women with previous experience as homemakers.
- (C) Post-Second World War hiring policies caused women to lose many of their wartime gains in employment opportunity.
- (D) Even war industries during the Second World War were reluctant to hire women for factory work.
- (E) The service sector of the economy has proved more nearly gender-blind in its hiring policies than has the manufacturing sector.

7. Which of the following words best expresses the opinion of the author of the passage concerning the notion that women are more skillful than men in carrying out detailed tasks?

- (A) "patient" (line 21)
- (B) "repetitive" (line 21)
- (C) "hoary" (line 22)
- (D) "homemaking" (line 23)
- (E) "purview" (line 24)

8. Which of the following best describes the relationship of the final paragraph to the passage as a whole?

- (A) The central idea is reinforced by the citation of evidence drawn from twentieth-century history.
- (B) The central idea is restated in such a way as to form a transition to a new topic for discussion.
- (C) The central idea is restated and juxtaposed with evidence that might appear to contradict it.
- (D) A partial exception to the generalizations of the central idea is dismissed as unimportant.
- (E) Recent history is cited to suggest that the central idea's validity is gradually diminishing.

## Passage 7

In an attempt to improve the overall performance of clerical workers, many companies have introduced computerized performance monitoring and control systems (CPMCS) that record and report a worker's computer-driven activities.

However, at least one study has shown that such monitoring may not be having the desired effect. In the study, researchers asked monitored clerical workers and their supervisors how assessments of productivity affected supervisors' ratings of workers' performance. In contrast to **unmonitored workers** doing the same work, who without exception identified the most important element in their jobs as customer service, the monitored workers and their supervisors all responded that productivity was the critical factor in assigning ratings. This finding suggested that there should have been a strong correlation between a monitored worker's productivity and the overall rating the worker received. However, measures of the relationship between overall rating and individual elements of performance clearly supported **the conclusion that supervisors gave considerable weight to criteria such as attendance, accuracy, and indications of customer satisfaction.**

It is possible that productivity may be a "hygiene factor"; that is, if it is too low, it will hurt the overall rating. But the evidence suggests that beyond the point at which productivity becomes "good enough," higher productivity per se is unlikely to improve a rating.

1. According to the passage, before the final results of the study were known, which of the following seemed likely?

- (A) That workers with the highest productivity would also be the most accurate
- (B) That workers who initially achieved high productivity ratings would continue to do so consistently
- (C) That the highest performance ratings would be achieved by workers with the highest productivity
- (D) That the most productive workers would be those whose supervisors claimed to value productivity
- (E) That supervisors who claimed to value productivity would place equal value on customer satisfaction

2. It can be inferred that the author of the passage discusses "**unmonitored workers**"(line 11) primarily in order to

- (A) compare the ratings of these workers with the ratings of monitored workers
- (B) provide an example of a case in which monitoring might be effective

- (C) provide evidence of an inappropriate use of CPMCS
- (D) emphasize the effect that CPMCS may have on workers' perceptions of their jobs
- (E) illustrate the effect that CPMCS may have on workers' ratings

3. Which of the following, if true, would most clearly have supported the conclusion referred to in lines 22-25?

- (A) Ratings of productivity correlated highly with ratings of both accuracy and attendance.
- (B) Electronic monitoring greatly increased productivity.
- (C) Most supervisors based overall ratings of performance on measures of productivity alone.
- (D) Overall ratings of performance correlated more highly with measures of productivity than the researchers expected.
- (E) Overall ratings of performance correlated more highly with measures of accuracy than with measures of productivity.

4. According to the passage, a "hygiene factor" (line 27) is an aspect of a worker's performance that

- (A) has no effect on the rating of a worker's performance
- (B) is so basic to performance that it is assumed to be adequate for all workers
- (C) is given less importance than it deserves in rating a worker's performance
- (D) is not likely to affect a worker's rating unless it is judged to be inadequate
- (E) is important primarily because of the effect it has on a worker's rating

5. The primary purpose of the passage is to

- (A) explain the need for the introduction of an innovative strategy
- (B) discuss a study of the use of a particular method
- (C) recommend a course of action
- (D) resolve a difference of opinion
- (E) suggest an alternative approach

### Passage 8

In corporate purchasing, competitive scrutiny is typically limited to suppliers of items that are directly related to end products. With “indirect” purchases (such as computers, advertising, and legal services), which are not directly related to production, corporations often favor “supplier partnerships” (arrangements in which the purchaser forgoes the right to pursue alternative suppliers), which can inappropriately shelter suppliers from rigorous competitive scrutiny that might afford the purchaser economic leverage. There are two independent variables—availability of alternatives and ease of changing suppliers—that companies should use to evaluate the feasibility of subjecting suppliers of indirect purchases to competitive scrutiny. This can create four possible situations.

In Type 1 situations, there are many alternatives and change is relatively easy. Open pursuit of alternatives—by frequent competitive bidding, if possible—will likely yield the best results. In Type 2 situations, where there are many alternatives but change is difficult—as for providers of employee health-care benefits—it is important to continuously test the market and use the results to secure concessions from existing suppliers. Alternatives provide a credible threat to suppliers, even if the ability to switch is constrained. In Type 3 situations, there are few alternatives, but the ability to switch without difficulty creates a threat that companies can use to negotiate concessions from existing suppliers. In Type 4 situations, where there are few alternatives and change is difficult, partnerships may be unavoidable.

#### 1. Which of the following best describes the relation of the second paragraph to the first?

- (A) The second paragraph offers proof of an assertion made in the first paragraph.
- (B) The second paragraph provides an explanation for the occurrence of a situation described in the first paragraph.
- (C) The second paragraph discusses the application of a strategy proposed in the first paragraph.
- (D) The second paragraph examines the scope of a problem presented in the first paragraph.
- (E) The second paragraph discusses the contradictions inherent in a relationship described in the first paragraph.

#### 2. Which of the following can be inferred about supplier partnerships, as they are described in the passage?

- (A) They cannot be sustained unless the goods or services provided are available from a large number of suppliers.
- (B) They can result in purchasers paying more for goods and services than they would in a competitive-bidding situation.

(C) They typically are instituted at the urging of the supplier rather than the purchaser.

(D) They are not feasible when the goods or services provided are directly related to the purchasers' end products.

(E) They are least appropriate when the purchasers' ability to change suppliers is limited.

#### 3. According to the passage, which of the following factors distinguishes an indirect purchase from other purchases?

(A) The ability of the purchasing company to subject potential suppliers of the purchased item to competitive scrutiny

(B) The number of suppliers of the purchased item available to the purchasing company

(C) The methods of negotiation that are available to the purchasing company

(D) The relationship of the purchased item to the purchasing company's end product

(E) The degree of importance of the purchased item in the purchasing company's business operation

#### 4. It can be inferred that the author of the passage would be most likely to make which of the following recommendations to a company purchasing health care benefits for its employees?

(A) Devise strategies for circumventing the obstacles to replacing the current provider of health care benefits.

(B) Obtain health care benefits from a provider that also provides other indirect products and services.

(C) Obtain bids from other providers of health care benefits in order to be in a position to negotiate a better deal with the current provider.

(D) Switch providers of health care benefits whenever a different provider offers a more competitive price.

(E) Acknowledge the difficulties involved in replacing the current provider of health care benefits and offer to form a partnership with the provider.

#### 5. Which of the following is one difference between Type 2 situations and Type 4 situations, as they are described in the passage?

(A) The number of alternative suppliers available to the purchaser

(B) The most effective approach for the purchaser to use in obtaining competitive bids from potential suppliers

(C) The degree of difficulty the purchaser encounters when changing suppliers

(D) The frequency with which each type of situation occurs in a typical business environment

(E) The likelihood that any given purchase will be an indirect purchase

## Passage 9

In recent years, teachers of introductory courses in Asian American studies have been facing a dilemma nonexistent a few decades ago, when hardly any texts in that field were available. Today, excellent anthologies and other introductory texts exist, and books on individual Asian American nationality groups and on general issues important for Asian Americans are published almost weekly. Even professors who are experts in the field find it difficult to decide which of these to assign to students; nonexperts who teach in related areas and are looking for writings for and by Asian American to include in survey courses are in an even worse position.

A complicating factor has been the continuing lack of specialized one-volume reference works on Asian Americans, such as biographical dictionaries or desktop encyclopedias. Such works would enable students taking Asian American studies courses (and professors in related fields) to look up basic information on Asian American individuals, institutions, history, and culture without having to wade through mountains of primary source material. In addition, given such works, Asian American studies professors might feel more free to include more challenging Asian American material in their introductory reading lists, since good reference works allow students to acquire on their own the background information necessary to interpret difficult or unfamiliar material.

1. The author of the passage is primarily concerned with doing which of the following?

- (A) Recommending a methodology
- (B) Describing a course of study
- (C) Discussing a problem
- (D) Evaluating a past course of action
- (E) Responding to a criticism

2. The "dilemma" mentioned in line 2 can best be characterized as being caused by the necessity to make a choice when faced with a

- (A) lack of acceptable alternatives
- (B) lack of strict standards for evaluating alternatives
- (C) preponderance of bad alternatives as compared to good
- (D) multitude of different alternatives
- (E) large number of alternatives that are nearly identical in content

3. The passage suggests that the factor mentioned in lines 14-17 (highlighted portion at the passage) complicates professors' attempts to construct introductory reading lists

for courses in Asian American studies in which of the following ways?

- (A) By making it difficult for professors to identify primary source material and to obtain standard information on Asian American history and culture
- (B) By preventing professors from identifying excellent anthologies and introductory texts in the field that are both recent and understandable to students
- (C) By preventing professors from adequately evaluating the quality of the numerous texts currently being published in the field
- (D) By making it more necessary for professors to select readings for their courses that are not too challenging for students unfamiliar with Asian American history and culture
- (E) By making it more likely that the readings professors assign to students in their courses will be drawn solely from primary sources

4. The passage implies that which of the following was true of introductory courses in Asian American studies a few decades ago?

- (A) The range of different textbooks that could be assigned for such courses was extremely limited.
- (B) The texts assigned as readings in such courses were often not very challenging for students.
- (C) Students often complained about the texts assigned to them in such courses.
- (D) Such courses were offered only at schools whose libraries were rich in primary sources.
- (E) Such courses were the only means then available by which people in the United States could acquire knowledge of the field.

5. According to the passage, the existence of good one-volume reference works about Asian Americans could result in

- (A) increased agreement among professors of Asian American studies regarding the quality of the sources available in their field
- (B) an increase in the number of students signing up for introductory courses in Asian American studies
- (C) increased accuracy in writings that concern Asian American history and culture
- (D) the use of introductory texts about Asian American history and culture in courses outside the field of Asian American studies
- (E) the inclusion of a wider range of Asian American material in introductory reading lists in Asian American studies

## Passage 10

In recent years, Western business managers have been heeding the exhortations of business journalists and academics to move their companies toward long-term, collaborative "strategic partnerships" with their external business partners (e.g., suppliers). The experts' **advice** comes as a natural reaction to numerous studies conducted during the past decade that compared Japanese production and supply practices with those of the rest of the world. The link between the **success of a certain well-known Japanese automaker** and its effective management of its suppliers, for example, has led to an unquestioning belief within Western management circles in the value of strategic partnerships. Indeed, in the automobile sector all three United States manufacturers and most of their European competitors have launched programs to reduce their total number of suppliers and move toward having strategic partnerships with a few. However, **new research** concerning supplier relationships in various industries demonstrates that the widespread assumption of Western managers and business consultants that Japanese firms manage their suppliers primarily through strategic partnerships is unjustified. Not only do Japanese firms appear to conduct a far smaller proportion of their business through strategic partnerships than is commonly believed, but they also make extensive use of "market-exchange" relationships, in which either party can turn to the **marketplace** and shift to different business partners at will, a practice usually associated with Western manufacturers.

### 1) The passage is primarily concerned with

- (A) examining economic factors that may have contributed to the success of certain Japanese companies
- (B) discussing the relative merits of strategic partnerships as compared with those of market-exchange relationship
- (C) challenging the validity of a widely held assumption about how Japanese firms operate
- (D) explaining why Western companies have been slow to adopt a particular practice favored by Japanese companies
- (E) pointing out certain differences between Japanese and Western supplier relationships

### 2) According to the passage, the **advice** referred to in the highlighted text was a response to which of the following?

- (A) A recent decrease in the number of available suppliers within the United States automobile industry
- (B) A debate within Western management circles during the past decade regarding the value of strategic partnerships
- (C) The success of certain European automobile

manufacturers that have adopted strategic partnerships  
(D) An increase in demand over the past decade for automobiles made by Western manufacturers  
(E) Research comparing Japanese business practices with those of other nations

### 3) The author mentions "**the success of a certain well-known Japanese automaker**" most probably in order to

- (A) demonstrate some of the possible reasons for the success of a certain business practice
- (B) cite a specific case that has convinced Western business experts of the value of a certain business practice
- (C) describe specific steps taken by Western automakers that have enabled them to compete more successfully in a global market
- (D) introduce a paradox about the effect of a certain business practice in Japan
- (E) indicate the need for Western managers to change their relationships with their external business partners

### 4) Which of the following is most clearly an example of the practice referred to in the last sentence of the passage?

- (A) A department store chain that employs a single buyer to procure all the small appliances to be sold in its stores
- (B) An automobile manufacturer that has used the same supplier of a particular axle component for several years in a row
- (C) A hospital that contracts only with union personnel to staff its nonmedical positions
- (D) A municipal government that decides to cancel its contract with a waste disposal company and instead hire its own staff to perform that function
- (E) A corporation that changes the food-service supplier for its corporate headquarters several times over a five-year period as part of a cost-cutting campaign.

### 5) Which of the following is cited in the passage as evidence supporting the author's claim about what the **new research** referred to in line 20 demonstrates?

- (A) The belief within Western management circles regarding the extent to which Japanese firms rely on strategic partnerships
- (B) The surprising number of European and United States businesses that have strategic partnerships with their suppliers
- (C) The response of Western automobile manufacturers to the advice that they adopt strategic partnerships with their suppliers
- (D) The prevalence of "market-exchange" relationships between Japanese firms and their suppliers
- (E) The success of a particular Japanese automobile manufacturer that favors strategic partnerships with its suppliers

### Passage 11

In terrestrial environments, gravity places special demands on the cardiovascular systems of animals. Gravitational pressure can cause blood to pool in the lower regions of the body, making it difficult to circulate blood to critical organs such as the brain. Terrestrial snakes, in particular, exhibit adaptations that aid in circulating blood against the force of gravity.

The problem confronting terrestrial snakes is best illustrated by what happens to sea snakes when removed from their supportive medium. Because the vertical pressure gradients within the blood vessels are counteracted by similar pressure gradients in the surrounding water, the distribution of blood throughout the body of sea snakes remains about the same regardless of their orientation in space, provided they remain in the ocean. **When removed from the water and tilted at various angles with the head up, however, blood pressure at their midpoint drops significantly, and at brain level falls to zero.** That many terrestrial snakes in similar spatial orientations do not experience this kind of circulatory failure suggests that certain adaptations enable them to regulate blood pressure more effectively in those orientations.

One such adaptation is the closer proximity of the terrestrial snake's heart to its head, which helps to ensure circulation to the brain, regardless of the snake's orientation in space. The heart of sea snakes can be located near the middle of the body, a position that minimizes the work entailed in circulating blood to both extremities. In arboreal snakes, however, which dwell in trees and often assume a vertical posture, the average distance from the heart to the head can be as little as 15 percent of overall body length. Such a location requires that blood circulated to the tail of the snake travel a greater distance back to the heart, a problem solved by another adaptation. When climbing, arboreal snakes often pause momentarily to wiggle their bodies, causing waves of muscle contraction that advance from the lower torso to the head. By compressing the veins and forcing blood forward, these contractions apparently improve the flow of venous blood returning to the heart.

#### 1) The passage provides information in support of which of the following assertions?

- (A) The disadvantages of an adaptation to a particular feature of an environment often outweigh the advantages of such an adaptation.
- (B) An organism's reaction to being placed in an environment to which it is not well adapted can sometimes illustrate the problems that have been solved by the adaptations of organisms indigenous to that environment.
- (C) The effectiveness of an organism's adaptation to a particular feature of its environment can only be evaluated by examining the effectiveness with which organisms of other species have adapted to a similar feature of a different environment.
- (D) Organisms of the same species that inhabit strikingly

different environments will often adapt in remarkably similar ways to the few features of those environments that are common.

(E) Different species of organisms living in the same environment will seldom adapt to features of that environment in the same way.

#### 2) According to the passage, one reason that the distribution of blood in the sea snake changes little while the creature remains in the ocean is that

- (A) the heart of the sea snake tends to be located near the center of its body
- (B) pressure gradients in the water surrounding the sea snake counter the effects of vertical pressure gradients within its blood vessels
- (C) the sea snake assumes a vertical posture less frequently than do the terrestrial and the arboreal snake
- (D) the sea snake often relies on waves of muscle contractions to help move blood from the torso to the head
- (E) the force of pressure gradients in the water surrounding the sea snake exceeds that of vertical pressure gradients within its circulatory system

#### 3) It can be inferred from the passage that which of the following is true of species of terrestrial snakes that often need to assume a vertical posture?

- (A) They are more likely to be susceptible to circulatory failure in vertical postures than are sea snakes.
- (B) Their hearts are less likely to be located at the midpoint of their bodies than is the case with sea snakes.
- (C) They cannot counteract the pooling of blood in lower regions of their bodies as effectively as sea snakes can.
- (D) The blood pressure at their midpoint decreases significantly when they are tilted with their heads up.
- (E) They are unable to rely on muscle contractions to move venous blood from the lower torso to the head.

#### 4) The author describes the behavior of the circulatory system of sea snakes when they are removed from the ocean (see highlighted text) primarily in order to

- (A) illustrate what would occur in the circulatory system of terrestrial snakes without adaptations that enable them to regulate their blood pressure in vertical orientations
- (B) explain why arboreal snakes in vertical orientations must rely on muscle contractions to restore blood pressure to the brain
- (C) illustrate the effects of circulatory failure on the behavior of arboreal snakes
- (D) illustrate the superiority of the circulatory system of the terrestrial snake to that of the sea snake
- (E) explain how changes in spatial orientation can adversely affect the circulatory system of snakes with hearts located in relatively close proximity to their heads

## Passage 11

In terrestrial environments, gravity places special demands on the cardiovascular systems of animals. Gravitational pressure can cause blood to pool in the lower regions of the body, making it difficult to circulate blood to critical organs such as the brain. Terrestrial snakes, in particular, exhibit adaptations that aid in circulating blood against the force of gravity.

The problem confronting terrestrial snakes is best illustrated by what happens to sea snakes when removed from their supportive medium. Because the vertical pressure gradients within the blood vessels are counteracted by similar pressure gradients in the surrounding water, the distribution of blood throughout the body of sea snakes remains about the same regardless of their orientation in space, provided they remain in the ocean. **When removed from the water and tilted at various angles with the head up, however, blood pressure at their midpoint drops significantly, and at brain level falls to zero.** That many terrestrial snakes in similar spatial orientations do not experience this kind of circulatory failure suggests that certain adaptations enable them to regulate blood pressure more effectively in those orientations.

One such adaptation is the closer proximity of the terrestrial snake's heart to its head, which helps to ensure circulation to the brain, regardless of the snake's orientation in space. The heart of sea snakes can be located near the middle of the body, a position that minimizes the work entailed in circulating blood to both extremities. In arboreal snakes, however, which dwell in trees and often assume a vertical posture, the average distance from the heart to the head can be as little as 15 percent of overall body length. Such a location requires that blood circulated to the tail of the snake travel a greater distance back to the heart, a problem solved by another adaptation. When climbing, arboreal snakes often pause momentarily to wiggle their bodies, causing waves of muscle contraction that advance from the lower torso to the head. By compressing the veins and forcing blood forward, these contractions apparently improve the flow of venous blood returning to the heart.

**5) It can be inferred from the passage that which of the following is a true statement about sea snakes?**

- (A) They frequently rely on waves of muscle contractions from the lower torso to the head to supplement the work of the heart.
- (B) They can not effectively regulate their blood pressure when placed in sea water and tilted at an angle with the

head pointed downward.

- (C) They are more likely to have a heart located in close proximity to their heads than are arboreal snakes.
- (D) They become acutely vulnerable to the effects of gravitational pressure on their circulatory system when they are placed in a terrestrial environment.
- (E) Their cardiovascular system is not as complicated as that of arboreal snakes.

**The author suggests that which of the following is a disadvantage that results from the location of a snake's heart in close proximity to its head?**

- (A) A decrease in the efficiency with which the snake regulates the flow of blood to the brain
- (B) A decrease in the number of orientations in space that a snake can assume without loss of blood flow to the brain
- (C) A decrease in blood pressure at the snake's mid point when it is tilted at various angles with its head up
- (D) An increase in the tendency of blood to pool at the snake's head when the snake is tilted at various angles with its head down
- (E) An increase in the amount of effort required to distribute blood to and from the snake's tail

**The primary purpose of the third paragraph is to**

- (A) introduce a topic that is not discussed earlier in the passage
- (B) describe a more efficient method of achieving an effect discussed in the previous paragraph
- (C) draw a conclusion based on information elaborated in the previous paragraph
- (D) discuss two specific examples of phenomena mentioned at the end of the previous paragraph
- (E) introduce evidence that undermines a view reported earlier in the passage

**In the passage, the author is primarily concerned with doing which of the following?**

- (A) Explaining adaptations that enable the terrestrial snake to cope with the effects of gravitational pressure on its circulatory system
- (B) Comparing the circulatory system of the sea snake with that of the terrestrial snake
- (C) Explaining why the circulatory system of the terrestrial snake is different from that of the sea snake
- (D) Pointing out features of the terrestrial snake's cardiovascular system that make it superior to that of the sea snake
- (E) Explaining how the sea snake is able to neutralize the effects of gravitational pressure on its circulatory system

## Passage 12

**(This passage was written in 1984.)**

It is now possible to hear a recording of Caruso's singing that is far superior to any made during his lifetime. A decades-old wax-cylinder recording of this great operatic tenor has been digitized, and the digitized signal has been processed by computer to remove the extraneous sound, or "noise," introduced by the now "ancient" wax-cylinder recording process.

Although this digital technique needs improvement, it represents a new and superior way of recording and processing sound which overcomes many of the limitations of analog recording. In analog recording systems, the original sound is represented as a continuous waveform created by variations in the sound's amplitude over time. When analog playback systems reproduce this waveform, however, they invariably introduce distortions. First, the waveform produced during playback differs somewhat from the original waveform. Second, the medium that stores the analog recording creates noise during playback which gets added to the recorded sounds.

Digital recordings, by contrast, reduce the original sound to a series of discrete numbers that represent the sound's waveform. Because the digital playback system "reads" only numbers, any noise and distortion that may accumulate during storage and manipulation of the digitized signal will have little effect: as long as the numbers remain recognizable, the original waveform will be reconstructed with little loss in quality. However, because the waveform is continuous, while its digital representation is composed of discrete numbers, it is impossible for digital systems to avoid some distortion. One kind of distortion, called "sampling error," occurs if the sound is sampled (i.e., its amplitude is measured) too infrequently, so that the amplitude changes more than one quantum (the smallest change in amplitude measured by the digital system) between samplings. In effect, the sound is changing too quickly for the system to record it accurately. A second form of distortion is "quantizing error," which arises when the amplitude being measured is not a whole number of quanta, forcing the digital recorder to round off. Over the long term, these errors are random, and the noise produced (a background buzzing) is similar to analog noise except that it only occurs when recorded sounds are being reproduced.

1. Which of the following best describes the relationship of the first paragraph to the passage as a whole?

- (A) The first paragraph introduces a general thesis that is elaborated on in detail elsewhere in the passage.
- (B) The first paragraph presents a concrete instance of a problem that is discussed elsewhere in the passage.
- (C) The first paragraph describes a traditional process that is contrasted unfavorably with a newer process described

elsewhere in the passage.

(D) The first paragraph presents a dramatic example of the potential of a process that is described elsewhere in the passage.

(E) The first paragraph describes a historic incident that served as the catalyst for developments described elsewhere in the passage.

2. According to the passage, one of the ways in which analog recording systems differ from digital recording systems is that analog systems

- (A) can be used to reduce background noise in old recordings
- (B) record the original sound as a continuous waveform
- (C) distort the original sound somewhat
- (D) can avoid introducing extraneous and nonmusical sounds
- (E) can reconstruct the original waveform with little loss of quality

3. Which of the following statements about the numbers by which sound is represented in a digital system can be inferred from the passage?

- (A) They describe the time interval between successive sounds in a passage of music.
- (B) They model large changes in the amplitude of the initial sound with relatively poor precision.
- (C) They are slightly altered each time they are read by the playback apparatus.
- (D) They are not readily altered by distortion and noise accumulated as the digital signal is stored and manipulated.
- (E) They are stored in the recording medium in small groups that can be read simultaneously by the playback apparatus.

4. Which of the following can be inferred from the passage about the digital approach to the processing of sound?

- (A) It was developed in competition with wax-cylinder recording technology.
- (B) It has resulted in the first distortion-free playback system.
- (C) It has been extensively applied to nonmusical sounds.
- (D) It cannot yet process music originally recorded on analog equipment.
- (E) It is not yet capable of reprocessing old recordings in a completely distortion-free manner.

### Passage 13

Joseph Glatthaar's *Forged in Battle* is not the first excellent study of Black soldiers and their White officers in the Civil War, but it uses more soldiers' letters and diaries including rare material from Black soldiers—and concentrates more intensely on Black-White relations in Black regiments than do any of its predecessors. Glatthaar's title expresses his thesis: loyalty, friendship, and respect among White officers and Black soldiers were fostered by the mutual dangers they faced in combat.

Glatthaar accurately describes the government's discriminatory treatment of Black soldiers in pay, promotion, medical care, and job assignments, appropriately emphasizing the campaign by Black soldiers and their officers to get the opportunity to fight. That chance remained limited throughout the war by army policies that kept most Black units serving in rear-echelon assignments and working in labor battalions. Thus, while their combat death rate was only one-third that of White units, their mortality rate from disease, a major killer in this war, was twice as great. Despite these obstacles, the courage and effectiveness of several Black units in combat won increasing respect from initially skeptical or hostile White soldiers. As one White officer put it, "they have fought their way into the respect of all the army."

In trying to demonstrate the magnitude of this attitudinal change, however, Glatthaar seems to exaggerate the prewar racism of the White men who became officers in Black regiments. "Prior to the war," he writes of these men, "virtually all of them held powerful racial prejudices." While perhaps true of those officers who joined Black units for promotion or other self-serving motives, this statement misrepresents the attitudes of the many abolitionists who became officers in Black regiments. Having spent years fighting against the race prejudice endemic in American society, they participated eagerly in this military experiment, which they hoped would help African Americans achieve freedom and postwar civil equality. By current standards of racial egalitarianism, these men's paternalism toward African Americans was racist. But to call their feelings "powerful racial prejudices" is to indulge in generational chauvinism—to judge past eras by present standards.

1. The passage as a whole can best be characterized as which of the following?

- (A) An evaluation of a scholarly study
- (B) A description of an attitudinal change
- (C) A discussion of an analytical defect
- (D) An analysis of the causes of a phenomenon
- (E) An argument in favor of revising a view

2. According to the author, which of the following is true of Glatthaar's *Forged in Battle* compared with previous studies on the same topic?

- (A) It is more reliable and presents a more complete picture of the historical events on which it concentrates than do previous studies.
- (B) It uses more of a particular kind of source material and focuses more closely on a particular aspect of the topic than do previous studies.
- (C) It contains some unsupported generalizations, but it rightly emphasizes a theme ignored by most previous studies.
- (D) It surpasses previous studies on the same topic in that it accurately describes conditions often neglected by those studies.
- (E) It makes skillful use of supporting evidence to illustrate a subtle trend that previous studies have failed to detect.

3. The author implies that the title of Glatthaar's book refers specifically to which of the following?

- (A) The sense of pride and accomplishment that Black soldiers increasingly felt as a result of their Civil War experiences
- (B) The civil equality that African Americans achieved after the Civil War, partly as a result of their use of organizational skills honed by combat
- (C) The changes in discriminatory army policies that were made as a direct result of the performance of Black combat units during the Civil War
- (D) The improved interracial relations that were formed by the races' facing of common dangers and their waging of a common fight during the Civil War
- (E) The standards of racial egalitarianism that came to be adopted as a result of White Civil War veterans' repudiation of the previous racism

4. The passage mentions which of the following as an important theme that receives special emphasis in Glatthaar's book?

- (A) The attitudes of abolitionist officers in Black units
- (B) The struggle of black units to get combat assignments
- (C) The consequences of the poor medical care received by Black soldiers
- (D) The motives of officers serving in Black units
- (E) The discrimination that Black soldiers faced when trying for promotions

### Passage 13

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**In trying to demonstrate the magnitude of this attitudinal change, however, Glatthaar seems to exaggerate the prewar racism of the White men who became officers in Black regiments.** "Prior to the war," he writes of these men, "virtually all of them held powerful racial prejudices." While perhaps true of those officers who joined Black units for promotion or other self-serving motives, this statement misrepresents the attitudes of the many abolitionists who became officers in Black regiments. Having spent years fighting against the race prejudice endemic in American society, they participated eagerly in this military experiment, which they hoped would help African Americans achieve freedom and postwar civil equality. By current standards of racial egalitarianism, these men's paternalism toward African Americans was racist. But to call their feelings "powerful racial prejudices" is to indulge in **generational chauvinism**—to judge past eras by present standards.

**5. The passage suggests that which of the following was true of Black units' disease mortality rates in the Civil War?**

- (A) They were almost as high as the combat mortality rates of white units.
- (B) They resulted in part from the relative inexperience of these units when in combat.
- (C) They were especially high because of the nature of these units' usual duty assignments.
- (D) They resulted in extremely high overall casualty rates in black combat units.
- (E) They exacerbated the morale problems that were caused

by the army's discriminatory policies.

**6. The author of the passage quotes the White officer in lines 23-24 [As one White officer put it, "they have fought their way into the respect of all the army."] primarily in order to provide evidence to support the contention that**

- (A) virtually all White officers initially had hostile attitudes toward Black soldiers
- (B) Black soldiers were often forced to defend themselves from physical attacks initiated by soldiers from White units
- (C) the combat performance of Black units changed the attitudes of white soldiers toward Black soldiers
- (D) White units paid especially careful attention to the performance of Black units in battle
- (E) respect in the army as a whole was accorded only to those units, whether Black or White, that performed well in battle

**7. Which of the following best describes the kind of error attributed to Glatthaar in lines 25-28 [In trying to demonstrate the magnitude of this attitudinal change, however, Glatthaar seems to exaggerate the prewar racism of the White men who became officers in Black regiments.]?**

- (A) Insisting on an unwarranted distinction between two groups of individuals in order to render an argument concerning them internally consistent
- (B) Supporting an argument in favor of a given interpretation of a situation with evidence that is not particularly relevant to the situation
- (C) Presenting a distorted view of the motives of certain individuals in order to provide grounds for a negative evaluation of their actions
- (D) Describing the conditions prevailing before a given event in such a way that the contrast with those prevailing after the event appears more striking than it actually is
- (E) Asserting that a given event is caused by another event merely because the other event occurred before the given event occurred

**8. Which of the following actions can best be described as indulging in "generational chauvinism" (lines 40-41) as that practice is defined in the passage?**

- (A) Condemning a present-day monarch merely because many monarchs have been tyrannical in the past.
- (B) Clinging to the formal standards of politeness common in one's youth to such a degree that any relaxation of those standards is intolerable
- (C) Questioning the accuracy of a report written by an employee merely because of the employee's gender.
- (D) Deriding the superstitions accepted as "science" in past eras without acknowledging the prevalence of irrational beliefs today.
- (E) Labeling a nineteenth-century politician as "corrupt" for engaging in once-acceptable practices considered intolerable today.

## Passage 14

My objective is to analyze certain forms of knowledge, not in terms of repression or law, but in terms of power. But the word power is apt to lead to misunderstandings about the nature, form, and unity of power. By power, I do not mean a group of institutions and mechanisms that ensure the subservience of the citizenry. I do not mean, either, a mode of subjugation that, in contrast to violence, has the form of the rule. Finally, I do not have in mind a general system of domination exerted by one group over another, a system whose effects, through successive derivations, pervade the entire social body. The sovereignty of the state, the form of law, or the overall unity of a domination are only the terminal forms power takes.

It seems to me that power must be understood as the multiplicity of force relations that are immanent in the social sphere; as the process that, through ceaseless struggle and confrontation, transforms, strengthens, or reverses them; as the support that these force relations find in one another, or on the contrary, the disjunctions and contradictions that isolate them from one another; and lastly, as the strategies in which they take effect, whose general design or institutional crystallization is embodied in the state apparatus, in the formulation of the law, in the various social hegemonies. Thus, the viewpoint that permits one to understand the exercise of power, even in its more "peripheral" effects, and that also makes it possible to use its mechanisms as a structural framework for analyzing the social order, must not be sought in a unique source of sovereignty from which secondary and descendent forms of power emanate but in the moving substrate of force relations that, by virtue of their inequality, constantly engender local and unstable states of power. If power seems omnipresent, it is not because it has the privilege of consolidating everything under its invincible unity, but because it is produced from one moment to the next, at every point, or rather in every relation from one point to another.

Power is everywhere, not because it embraces everything, but because it comes from everywhere. And if power at times seems to be permanent, repetitious, inert, and self-reproducing, it is simply because the overall effect that emerges from all these mobilities is a concatenation that rests on each of them and seeks in turn to arrest their movement. One needs to be nominalistic, no doubt: power is not an institution, and not a structure; neither is it a certain strength we are endowed with; it is the name that one attributes to a complex strategic situation in a particular society.

### 1. The author's primary purpose in defining power is to

- (A) counteract self-serving and confusing uses of the term
- (B) establish a compromise among those who have defined the term in different ways
- (C) increase comprehension of the term by providing concrete examples
- (D) demonstrate how the meaning of the term has evolved
- (E) avoid possible misinterpretations resulting from the more common uses of the term

### 2. According to the passage, which of the following best describes the relationship between law and power?

- (A) Law is the protector of power.
- (B) Law is the source of power.
- (C) Law sets bounds to power.
- (D) Law is a product of power.
- (E) Law is a stabilizer of power.

### 3. Which of the following methods is NOT used extensively by the author in describing his own conception of power?

- (A) Restatement of central ideas
- (B) Provision of concrete examples
- (C) Analysis and classification
- (D) Comparison and contrast
- (E) Statement of cause and effect

### 4. With which of the following statements would the author be most likely to agree?

- (A) Power tends to corrupt; absolute power corrupts absolutely.
- (B) The highest proof of virtue is to possess boundless power without abusing it.
- (C) To love knowledge is to love power.
- (D) It is from the people and their deeds that power springs.
- (E) The health of the people as a state is the foundation on which all their power depends.

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**5. The author's attitude toward the various kinds of compulsion employed by social institutions is best described as**

- (A) concerned and sympathetic
- (B) scientific and detached
- (C) suspicious and cautious
- (D) reproachful and disturbed
- (E) meditative and wistful

**6. According to the passage, states of power are transient because of the**

- (A) differing natures and directions of the forces that create them
- (B) rigid structural framework in which they operate
- (C) unique source from which they emanate
- (D) pervasive nature and complexity of the mechanisms by which they operate
- (E) concatenation that seeks to arrest their movement

**7. It can be inferred from the passage that the author believes the conflict among social forces to be**

- (A) essentially the same from one society to another even though its outward manifestation may seem different
- (B) usually the result of misunderstandings that impede social progress
- (C) an inevitable feature of the social order of any state
- (D) wrongly blamed for disrupting the stability of society
- (E) best moderated in states that possess a strong central government

## Passage 15

"Masterpieces are dumb," wrote Flaubert, "They have a tranquil aspect like the very products of nature, like large animals and mountains." He might have been thinking of *War and Peace*, that vast, silent work, unfathomable and simple, provoking endless questions through the majesty of its being. Tolstoi's simplicity is "overpowering," says the critic Bayley, "disconcerting," because it comes from "his casual assumption that the world is as he sees it." Like other nineteenth-century Russian writers he is "impressive" because he "means what he says," but he stands apart from all others and from most Western writers in his identity with life, which is so complete as to make us forget he is an artist. He is the center of his work, but his egocentricity is of a special kind. Goethe, for example, says Bayley, "cared for nothing but himself. Tolstoi was nothing but himself."

For all his varied modes of writing and the multiplicity of characters in his fiction, Tolstoi and his work are of a piece. The famous "conversion" of his middle years, movingly recounted in his *Confession*, was a culmination of his early spiritual life, not a departure from it. The apparently fundamental changes that led from epic narrative to dogmatic parable, from a joyous, buoyant attitude toward life to pessimism and cynicism, from *War and Peace* to *The Kreutzer Sonata*, came from the same restless, impressionable depths of an independent spirit yearning to get at the truth of its experience. "Truth is my hero," wrote Tolstoi in his youth, reporting the fighting in Sebastopol. Truth remained his hero—his own, not others', truth. Others were awed by Napoleon, believed that a single man could change the destinies of nations, adhered to meaningless rituals, formed their tastes on established canons of art. Tolstoi reversed all preconceptions; and in every reversal he overthrew the "system," the "machine," the externally ordained belief, the conventional behavior in favor of unsystematic, impulsive life, of inward motivation and the solutions of independent thought.

In his work the artificial and the genuine are always exhibited in dramatic opposition: the supposedly great Napoleon and the truly great, unregarded little Captain Tushin, or Nicholas Rostov's actual experience in battle and his later account of it. The simple is always pitted against the elaborate, knowledge gained from observation against assertions of borrowed faiths. Tolstoi's magical simplicity is a product of these tensions; his work is a record of the questions he put to himself and of the answers he found in his search. The greatest characters of his fiction exemplify this search, and their happiness depends on the measure of their answers. Tolstoi wanted happiness, but only hard-won happiness, that emotional fulfillment and intellectual clarity which could come only as the prize of all-consuming effort. He scorned lesser satisfactions..

### 1. Which of the following best characterizes the author's attitude toward Tolstoi?

- (A) She deprecates the cynicism of his later works.
- (B) She finds his theatricality artificial.
- (C) She admires his wholehearted sincerity.
- (D) She thinks his inconsistency disturbing.
- (E) She respects his devotion to orthodoxy.

### 2. Which of the following best paraphrases Flaubert's statement quoted in lines 1-4?

- (A) Masterpiece seem ordinary and unremarkable from the perspective of a later age.
- (B) Great works of art do not explain themselves to us any more than natural objects do.
- (C) Important works of art take their place in the pageant of history because of their uniqueness.
- (D) The most important aspects of good art are the orderliness and tranquility it reflects.
- (E) Masterpieces which are of enduring value represent the forces of nature.

### 3. The author quotes from Bayley (line 8-20) to show that

- (A) although Tolstoi observes and interprets life, he maintains no self-conscious distance from his experience
- (B) the realism of Tolstoi's work gives the illusion that his novels are reports of actual events
- (C) unfortunately, Tolstoi is unaware of his own limitation, though he is sincere in his attempt to describe experience
- (D) although Tolstoi works casually and makes unwarranted assumption, his work has an inexplicable appearance of truth
- (E) Tolstoi's personal perspective makes his work almost unintelligible to the majority of his readers

### 4. The author states that Tolstoi's conversion represented

- (A) a radical renunciation of the world
- (B) the rejection of avant-garde ideas
- (C) the natural outcome of his earlier beliefs
- (D) the acceptance of religion he had earlier rejected
- (E) a fundamental change in his writing style

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**5. According to the passage, Tolstoi's response to the accepted intellectual and artistic values of his times was to**

- (A) select the most valid from among them
- (B) combine opposing viewpoints into a new doctrine
- (C) reject the claims of religion in order to serve his art
- (D) subvert them in order to defend a new political viewpoint
- (E) upset them in order to be faithful to his experience

**6. It can be inferred from the passage that which of the following is true of *War and Peace*?**

- (A) It belongs to an early period of Tolstoi's work.
- (B) It incorporates a polemic against the disorderliness of Russian life.
- (C) It has a simple structural outline.
- (D) It is a work that reflects an ironic view of life.
- (E) It conforms to the standard of aesthetic refinement favored by Tolstoi's contemporaries.

**7. According to the passage, the explanation of Tolstoi's "magical simplicity" (line 55) lies partly in his**

- (A) remarkable power of observation and his facility in exact description
- (B) persistent disregard for conventional restraints together with his great energy
- (C) unusual ability to reduce the description of complex situations to a few words
- (D) abiding hatred of religious doctrine and preference for new scientism
- (E) continuing attempt to represent the natural in opposition to the pretentious

## Passage 16

Before Laura Gilpin (1891-1979), few women in the history of photography had so devoted themselves to chronicling the landscape. Other women had photographed the land, but none can be regarded as a landscape photographer with a sustained body of work documenting the physical terrain. Anne Brigman often photographed woodlands and coastal areas, but they were generally settings for her artfully placed subjects. Dorothea Lange's landscapes were always conceived of as counterparts to her portraits of rural women.

At the same time that Gilpin's interest in landscape work distinguished her from most other women photographers, her approach to landscape photography set her apart from men photographers who, like Gilpin, documented the western United States. Western American landscape photography grew out of a male tradition, pioneered by photographers attached to government and commercial survey **teams** that went west in the 1860's and 1870's. These explorer-photographers documented the West that their employers wanted to see: an exotic and majestic land shaped by awesome natural forces, unpopulated and ready for American settlement. The next generation of male photographers, represented by Ansel Adams and Eliot Porter, often worked with conservationist groups rather than government agencies or commercial companies, but they nonetheless preserved the "heroic" style and maintained the role of respectful outsider peering in with reverence at a fragile natural world.

For Gilpin, by contrast, the landscape was neither an empty vista awaiting human settlement nor a jewel-like scene resisting human intrusion, but a peopled landscape with a rich history and tradition of its own, an environment that shaped and molded the lives of its inhabitants. Her photographs of the Rio Grande, for example, consistently depict the river in terms of its significance to human culture: as a source of irrigation water, a source of food for livestock, and a provider of town sites. Also instructive is Gilpin's general avoidance of extreme close-ups of her natural subjects: for her, emblematic details could never suggest the intricacies of the interrelationship between people and nature that made the landscape a compelling subject. While it is dangerous to draw conclusions about a "feminine" way of seeing from the work of one woman, it can nonetheless be argued that Gilpin's unique approach to landscape photography was analogous to the work of many **women writers** who, far more than their male counterparts, described the landscape in terms of its potential to sustain human life.

Gilpin never spoke of herself as a photographer with a feminine perspective: she eschewed any discussion of gender as it related to her work and maintained little interest in interpretations that relied on the concept of a "woman's eye." Thus it is ironic that her photographic evocation of a historical landscape should so clearly present a distinctively feminine approach to landscape photography.

### 1. Which of the following best expresses the main idea of the passage?

- (A) Gilpin's landscape photographs more accurately documented the Southwest than did the photographs of explorers and conservationists.
- (B) Gilpin's style of landscape photography substantially influenced the heroic style practiced by her male counterparts.
- (C) The labeling of Gilpin's style of landscape photography as feminine ignores important ties between it and the heroic style.
- (D) Gilpin's work exemplifies an arguably feminine style of landscape photography that contrasts with the style used by her male predecessors.
- (E) Gilpin's style was strongly influenced by the work of women writers who described the landscape in terms of its relationship to people.

### 2. It can be inferred from the passage that the teams (Highlighted) were most interested in which of the following aspects of the land in the western United States?

- (A) Its fragility in the face of increased human intrusion
- (B) Its role in shaping the lives of indigenous peoples
- (C) Its potential for sustaining future settlements
- (D) Its importance as an environment for rare plants and animals
- (E) Its unusual vulnerability to extreme natural forces

### 3. The author of the passage claims that which of the following is the primary reason why Gilpin generally avoided extreme close-ups of natural subjects?

- (A) Gilpin believed that pictures of natural details could not depict the interrelationship between the land and humans.
- (B) Gilpin considered close-up photography to be too closely associated with her predecessors.
- (C) Gilpin believed that all of her photographs should include people in them.
- (D) Gilpin associated close-up techniques with photography used for commercial purposes.
- (E) Gilpin feared that pictures of small details would suggest an indifference to the fragility of the land as a whole.

### 4. The passage suggests that a photographer who practiced the heroic style would be most likely to emphasize which of the following in a photographic series focusing on the Rio Grande?

- (A) Indigenous people and their ancient customs relating to the river
- (B) The exploits of navigators and explorers
- (C) Unpopulated, pristine parts of the river and its surroundings
- (D) Existing commercial ventures that relied heavily on the river
- (E) The dams and other monumental engineering structures built on the river

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**5. It can be inferred from the passage that the first two generations of landscape photographers in the western United States had which of the following in common?**

- (A) They photographed the land as an entity that had little interaction with human culture.
- (B) They advanced the philosophy that photographers should resist alliances with political or commercial groups.
- (C) They were convinced that the pristine condition of the land needed to be preserved by government action.
- (D) They photographed the land as a place ready for increased settlement.
- (E) They photographed only those locations where humans had settled.

**6. Based on the description of her works in the passage, which of the following would most likely be a subject for a photograph taken by Gilpin?**

- (A) A vista of a canyon still untouched by human culture
- (B) A portrait of a visitor to the West against a desert backdrop
- (C) A view of historic Native American dwellings carved into the side of a natural cliff
- (D) A picture of artifacts from the West being transported to the eastern United States for retail sale
- (E) An abstract pattern created by the shadows of clouds on the desert

**7. The author of the passage mentions women writers in line 50 most likely in order to**

- (A) counter a widely held criticism of her argument
- (B) bolster her argument that Gilpin's style can be characterized as a feminine style
- (C) suggest that Gilpin took some of her ideas for photographs from landscape descriptions by women writers
- (D) clarify the interrelationship between human culture and the land that Gilpin was attempting to capture
- (E) offer an analogy between photographic close-ups and literary descriptions of small details

## Passage 17

A meteor stream is composed of dust particles that have been ejected from a parent comet at a variety of velocities. These particles follow the same orbit as the parent comet, but due to their differing velocities they slowly gain on or fall behind the disintegrating comet until a shroud of dust surrounds the entire cometary orbit. Astronomers have hypothesized that a meteor stream should broaden with time as the dust particles' individual orbits are perturbed by planetary gravitational fields. A recent computer-modeling experiment tested this hypothesis by tracking the influence of planetary gravitation over a projected 5,000-year period on the positions of a group of hypothetical dust particles. In the model, the particles were randomly distributed throughout a computer simulation of the orbit of an actual meteor stream, the Geminid. The researcher found, as expected, that the computer-model stream broadened with time. **Conventional theories**, however, predicted that the distribution of particles would be increasingly dense toward the center of a meteor stream. Surprisingly, the computer-model meteor stream gradually came to resemble a thick-walled, hollow pipe.

Whenever the Earth passes through a meteor stream, a meteor shower occurs. Moving at a little over 1,500,000 miles per day around its orbit, the Earth would take, on average, just over a day to cross the hollow, computer-model Geminid stream if the stream were 5,000 years old. Two brief periods of peak meteor activity during the shower would be observed, one as the Earth entered the thick-walled "pipe" and one as it exited. There is no reason why the Earth should always pass through the stream's exact center, so the time interval between the two bursts of activity would vary from one year to the next.

Has the predicted twin-peaked activity been observed for the actual yearly Geminid meteor shower? The Geminid data between 1970 and 1979 shows just such a bifurcation, a secondary burst of meteor activity being clearly visible at an average of 19 hours (1,200,000 miles) after the first burst. The time intervals between the bursts suggest the actual Geminid stream is about 3,000 years old.

1. The primary focus of the passage is on which of the following?

- (A) Comparing two scientific theories and contrasting the predictions that each would make concerning a natural phenomenon
- (B) Describing a new theoretical model and noting that it explains the nature of observations made of a particular natural phenomenon

- (C) Evaluating the results of a particular scientific experiment and suggesting further areas for research
- (D) Explaining how two different natural phenomena are related and demonstrating a way to measure them
- (E) Analyzing recent data derived from observations of an actual phenomenon and constructing a model to explain the data

2. According to the passage, which of the following is an accurate statement concerning meteor streams?

- (A) Meteor streams and comets start out with similar orbits, but only those of meteor streams are perturbed by planetary gravitation.
- (B) Meteor streams grow as dust particles are attracted by the gravitational fields of comets.
- (C) Meteor streams are composed of dust particles derived from comets.
- (D) Comets may be composed of several kinds of materials, while meteor streams consist only of large dust particles.
- (E) Once formed, meteor streams hasten the further disintegration of comets.

3. The author states that the research described in the first paragraph was undertaken in order to

- (A) determine the age of an actual meteor stream
- (B) identify the various structural features of meteor streams
- (C) explore the nature of a particularly interesting meteor stream
- (D) test the hypothesis that meteor streams become broader as they age
- (E) show that a computer model could help in explaining actual astronomical data

4. Q. It can be inferred from the passage that which of the following would most probably be observed during the Earth's passage through a meteor stream if the conventional theories mentioned in line 18 were correct?

- (A) Meteor activity would gradually increase to a single, intense peak, and then gradually decline.
- (B) Meteor activity would be steady throughout the period of the meteor shower.
- (C) Meteor activity would rise to a peak at the beginning and at the end of the meteor shower.
- (D) Random bursts of very high meteor activity would be interspersed with periods of very little activity.
- (E) In years in which the Earth passed through only the outer areas of a meteor stream, meteor activity would be absent.

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**5. According to the passage, why do the dust particles in a meteor stream eventually surround a comet's original orbit?**

- (A) They are ejected by the comet at differing velocities.
- (B) Their orbits are uncontrolled by planetary gravitational fields.
- (C) They become part of the meteor stream at different times.

- (D) Their velocity slows over time.
- (E) Their ejection velocity is slower than that of the comet.

**6. The passage suggests that which of the following is a prediction concerning meteor streams that can be derived from both the conventional theories mentioned in line 18 and the new computer-derived theory?**

- (A) Dust particles in a meteor stream will usually be distributed evenly throughout any cross section of the stream.
- (B) The orbits of most meteor streams should cross the orbit of the Earth at some point and give rise to a meteor shower.
- (C) Over time the distribution of dust in a meteor stream will usually become denser at the outside edges of the stream than at the center.
- (D) Meteor showers caused by older meteor streams should be, on average, longer in duration than those caused by very young meteor streams.
- (E) The individual dust particles in older meteor streams should be, on average, smaller than those that compose younger meteor streams.

**7. It can be inferred from the last paragraph of the passage that which of the following must be true of the Earth as it orbits the Sun?**

- (A) Most meteor streams it encounters are more than 2,000 years old.
- (B) When passing through a meteor stream, it usually passes near to the stream's center.
- (C) It crosses the Geminid meteor stream once every year.
- (D) It usually takes over a day to cross the actual Geminid meteor stream.
- (E) It accounts for most of the gravitational perturbation affecting the Geminid meteor stream.

**8. Which of the following is an assumption underlying the last sentence of the passage?**

- (A) In each of the years between 1970 and 1979, the Earth took exactly 19 hours to cross the Geminid meteor stream.
- (B) The comet associated with the Geminid meteor stream has totally disintegrated.
- (C) The Geminid meteor stream should continue to exist for at least 5,000 years.
- (D) The Geminid meteor stream has not broadened as rapidly as the conventional theories would have predicted.
- (E) The computer-model Geminid meteor stream provides an accurate representation of the development of the actual Geminid stream.

## Passage 18

The impressionist painters expressly disavowed any interest in philosophy, yet their new approach to art had far-reaching philosophical implications. For the view of matter that the Impressionists assumed differed profoundly from the view that had previously prevailed among artists. This view helped to unify the artistic works created in the new style.

The ancient Greeks had conceived of the world in concrete terms, even endowing abstract qualities with bodies. This Greek view of matter persisted, so far as painting was concerned, into the nineteenth century. The Impressionists, on the other hand, viewed light, not matter, as the ultimate visual reality. The philosopher Taine expressed the Impressionist view of things when he said, "The chief 'person' in a picture is the light in which everything is bathed."

In Impressionist painting, solid bodies became mere reflectors of light, and distinctions between one object and another became arbitrary conventions; for by light all things were welded together. The treatment of both color and outline was transformed as well. Color, formerly considered a property inherent in an object, was seen to be merely the result of vibrations of light on the object's colorless surface. And outline, whose function had formerly been to indicate the limits of objects, now marked instead merely the boundary between units of pattern, which often merged into one another.

The Impressionist world was composed not of separate objects but of many surfaces on which light struck and was reflected with varying intensity to the eye through the atmosphere, which modified it. It was this process that produced the mosaic of colors that formed an Impressionist canvas. "Light becomes the sole subject of the picture," writes Mauclair. "The interest of the object upon which it plays is secondary. Painting thus conceived becomes a purely optic art."

From this profoundly revolutionary form of art, then, all ideas—religious, moral, psychological—were excluded, and so were all emotions except certain aesthetic ones. The people, places, and things depicted in an Impressionist picture do not tell story or convey any special meaning; they are, instead, merely parts of pattern of light drawn from nature and captured on canvas by the artist.

1. The author of the passage is primarily concerned with
  - (A) explaining how the Impressionists were influenced by scientific studies of light and color
  - (B) discussing the philosophical implications of the Impressionist style of painting
  - (C) identifying the revolutionary artistic techniques developed by the Impressionist painters
  - (D) analyzing the influence of thinkers like Taine and Mauclair on Impressionist painting
  - (E) defending the importance of the Impressionist painters in the history of modern art
2. According to the passage, the Impressionists differed from the ancient Greeks in that the Impressionists
  - (A) considered color to be property inherent in objects
  - (B) placed a higher value on the narrative element in painting
  - (C) depicted the objects in a painting as isolated, rather than united in a single pattern
  - (D) treated light, rather than matter, as the ultimate reality
  - (E) regarded art primarily as a medium for expressing moral and aesthetic ideas
3. The author's quotation of a statement by Taine (lines 15-16) serves which of the following functions in the passage?
  - (A) It furnishes a specific example of an Impressionist painting that features light as its chief subject.
  - (B) It resolves an apparent contradiction in the philosophy of the Impressionists.
  - (C) It qualifies the statement that the ancient Greeks viewed the world in concrete terms.
  - (D) It summarizes the unique perspective that the Impressionists brought to painting.
  - (E) It provides a concrete illustration of the far-reaching philosophical implications of Impressionism.
4. According to the passage, the Impressionists believed that the atmosphere
  - (A) reflects light with varying intensity
  - (B) creates the illusion of color in colorless surfaces
  - (C) modifies the shapes of objects
  - (D) is the result of vibrations of light
  - (E) affects the way we perceived color

## Passage 18

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From this profoundly revolutionary form of art, then, all ideas—religious, moral, psychological—were excluded, and so were all emotions except certain aesthetic ones. The people, places, and things depicted in an Impressionist picture do not tell story or convey any special meaning; they are, instead, merely parts of pattern of light drawn from nature and captured on canvas by the artist.

5. The author's use of the term "mosaic of colors" (line 32) suggests that Impressionist paintings were characterized by

- (A) discontinuous dabs of unmixed pigment
- (B) broad, sweeping brush strokes
- (C) clearly defined forms and objects
- (D) subjects devoid of emotive or literary qualities
- (E) the glowing reds, greens, and midnight blues of stained glass

6. The passage contains information that answers which of the following questions?

- I. How did the Impressionists perceive matter?
  - II. What is the unifying element in a typical Impressionist painting?
  - III. How did the Impressionists' view of color differ from that of eighteenth-century artists?
- (A) I only
  - (B) III only
  - (C) I and II only
  - (D) II and III only
  - (E) I, II, and III

7. The ideas attributed to the Impressionists in the passage suggest that an Impressionist painter would be most likely to agree with which of the following statements?

- (A) A picture is significant primarily as a manifestation of the artist's mental state.
- (B) The highest purpose of art is to teach religious truths.
- (C) The quality of a picture has nothing to do with the nature of the objects it depicts.
- (D) An artist should strive to recreate on canvas the inner nature of objects from real life.
- (E) It is futile to attempt to paint pictures that aim to copy the optical appearance of the world.

## Passage 19

Many politicians, business leaders, and scholars discount the role of public policy and emphasize the role of the labor market when explaining employers' maternity-leave policies, arguing that prior to the passage of the Family and Medical Leave Act (FMLA) of 1993, employers were already providing maternity leave in response to the increase in the number of women workers. Employers did create maternity-leave programs in the 1970's and 1980's, but not as a purely voluntary response in the absence of any government mandate. In 1972, the Equal Employment Opportunity Commission (EEOC) ruled that employers who allowed leaves for disabling medical conditions must also allow them for maternity and that failure to do so would constitute sex discrimination under the Civil Rights Act of 1964. As early as 1973, a survey found that 58 percent of large employers had responded with new maternity-leave policies. Because the 1972 EEOC ruling was contested in court, the ruling won press attention that popularized maternity-leave policies. Yet perhaps because the Supreme Court later struck down the ruling, politicians and scholars have failed to recognize its effects, assuming that employers adopted maternity-leave policies in response to the growing feminization of the workforce.

1. It can be inferred that the author of the passage would be most likely to agree with which of the following statements about government policy?

- (A) Government policy is generally unaffected by pressures in the labor market.
- (B) The impact of a given government policy is generally weakened by sustained press attention.
- (C) It is possible for a particular government policy to continue to have an impact after that policy has been eliminated.
- (D) A given government policy can be counterproductive when that policy has already unofficially been implemented.
- (E) The impact of a given government policy is generally weakened when the ruling is contested in court.

2. The passage suggests that the relationship between the view of the author with respect to maternity leave policy prior to passage of the FMLA and the view of the politicians, business leaders, and scholars mentioned in lines 1-2 can best be characterized by which of the following statements?

- (A) They agree that both the 1972 EEOC ruling on maternity-leave policy and the increasing feminization of the workplace had an impact on employers' creation of maternity-leave programs but disagree about the relative importance of each factor.
- (B) They agree that the EEOC ruling on maternity-leave policy had an initial impact on employers' creation of maternity-leave programs but disagree over whether the Supreme Court's striking down of the EEOC ruling weakened that impact.
- (C) They agree that creating maternity-leave programs was a necessary response to the needs of the increasing number of women workers but disagree about whether maternity should be classified as a disabling medical condition.
- (D) They agree that employers created maternity-leave programs prior to passage of the FMLA but disagree about employers' motivations for doing so.
- (E) They agree that employers created maternity-leave programs prior to passage of the FMLA but disagree about how widespread those programs were.

3. The primary purpose of the passage is to

- (A) present an alternative to a commonly accepted explanation for a phenomenon
- (B) reexamine a previously discredited explanation for a phenomenon in light of new evidence
- (C) criticize politicians and scholars for failing to anticipate a phenomenon
- (D) correct a common misconception about the impact a phenomenon has had on a government policy
- (E) analyze the ways in which a phenomenon has changed over time in response to market forces

4. According to the passage, the 1972 EEOC ruling did which of the following?

- (A) It provided a government mandate for maternity-leave policies that employers were already offering voluntarily.
- (B) It provoked a controversy among employers regarding the proper implementation of maternity-leave policies.
- (C) It required all employers to provide employee leave for pregnant women and people with disabling medical conditions.
- (D) It gave pregnant women the same rights to employee leave as people with disabling medical conditions.
- (E) It increased pregnant women's awareness of their rights to employee leave.

## Passage 20

In 1975 Chinese survey teams remeasured Mount Everest, the highest of the Himalayan mountains. Like the British in 1852, they used the age-old technique of “carrying in” sea level: surveyors marched inland from the coast for thousands of miles, stopping at increments of as little as a few feet to measure their elevation, and marking each increment with two poles. To measure the difference in elevation between poles, surveyors used an optical level—a telescope on a level base—placed halfway between the poles. They sighted each pole, reading off measurements that were then used to calculate the change in elevation over each increment. In sight of the peaks the used theodolites telescopes for measuring vertical and horizontal angles—to determine the elevation of the summit. The Chinese, however, made efforts to correct for the errors that had plagued the British. One source of error is refraction, the bending of light beams as they pass through air layers of different temperature and pressure. Because light traveling down from a summit passes through many such layers, a surveyor could sight a mirage rather than the peak itself. To reduce refraction errors, the Chinese team carried in sea level to within five to twelve miles of Everest’s summit, decreasing the amount of air that light passed through on its way to their theodolites. The Chinese also launched weather balloons near their theodolites to measure atmospheric temperature and pressure changes to better estimate refraction errors. Another hurdle is the peak’s shape. When surveyors sight the summit, there is a risk they might not all measure the same point. In 1975 the Chinese installed the first survey beacon on Everest, a red reflector visible through a theodolite for ten miles, as a reference point. One more source of error is the unevenness of sea level. The British assumed that carrying in sea level would extend an imaginary line from the shore along Earth’s curve to a point beneath the Himalaya. In reality, sea level varies according to the irregular interior of the planet. The Chinese used a gravity meter to correct for local deviations in sea level.

- 1) It can be inferred from the passage that refraction would be most likely to cause errors in measurements of a mountain’s elevation under which of the following conditions?
- A. When there are local variations in sea level
  - B. When light passes through humid air
  - C. When theodolites are used relatively far from the mountain peak.
  - D. When weather balloons indicate low air temperature and pressure.
  - E. When sea level has been carried in to Within five to twelve miles of the summit.

- 2) Which of the following best describes the purpose of the sentence in lines 23-25 (“The Chinese , however,...the British”)?
- A. Introduce a definition
  - B. Signal a transition in focus
  - C. Summarize the preceding paragraph
  - D. Draw a contrast between two different theories.
  - E. Present information that contradicts the Preceding paragraph.

- 3) Which of the following is NOT mentioned as a possible source of error in surveying mountain elevation?
- A. Mirages
  - B. Refraction
  - C. Inaccurate instruments
  - D. Variations in sea level
  - E. Uncertainty about the exact point to be Measured

- 4) The primary purpose of the passage is to
- A. provide details about improvements to a process
  - B. challenge the assumptions underlying a new method
  - C. criticize the way in which a failed project was carried out
  - D. call for new methods to solve an existing problem
  - E. explain the theory behind a new technique

- 5) The passage suggests which of the following about the technique used by the Chinese in their measurement of Mount Everest?
- A. The Chinese employed the same assumptions about sea level as the British but used more accurate methods.
  - B. The Chinese used a different instrument for measuring the difference in elevation between increments than the British had.
  - C. The Chinese used the same basic technique as the British, supplementing it with modern refinements to knowledge and methods.
  - D. Since the accuracy of the technique of carrying in sea level had been challenged, the Chinese were obliged to develop a new technique to replace it.
  - E. Since few advances had been made in the field of mountain surveying, the Chinese used no equipment in addition to what the British had used.

## Passage 21

Maps made by non-Native Americans to depict Native American land tenure, resources and population distributions appeared almost as early as Europeans' first encounters with Native Americans and took many forms: missionaries' field sketches, explorers' drawings, and surveyors' maps, as well as maps rendered in connection with treaties involving land transfers. **Most existing maps** of Native American lands are reconstructions that are based largely on archaeology, oral reports, and evidence gathered from observers' accounts in letters, diaries, and official reports; accordingly, the accuracy of these maps is especially dependent on the mapmakers' own interpretive abilities.

Many existing maps also reflect the 150-year role of the Bureau of Indian Affairs (BIA) in administering tribal lands. Though these maps incorporate some information gleaned directly from Native Americans, rarely has Native American cartography contributed to this official record, which has been compiled, surveyed, and authenticated by non-Native Americans. Thus our current cartographic record relating to Native American tribes and their migrations and cultural features, as well as territoriality and contemporary trust lands, reflects the origins of the data, the mixed purposes for which the maps have been prepared, and changes both in United States government policy and in non-Native Americans' attitudes toward an understanding of Native Americans.

1. Which of the following best describes the content of the passage?  
(A) A chronology of the development of different methods for mapping Native Americans  
(B) A discussion of how the mapmaking techniques of Native Americans differed from those of Europeans  
(C) An argument concerning the present-day uses to which historical maps of Native American lands are put  
(D) An argument concerning the nature of information contained in maps of Native American lands  
(E) A proposal for improving the accuracy of maps of Native American lands
2. The passage mentions each of the following as a factor affecting current maps of Native American lands EXCEPT  
(A) United States government policy  
(B) non-Native Americans' perspective on Native Americans  
(C) origins of the information utilized to produce the maps

- (D) changes in ways that tribal lands are used  
(E) the reason for producing the maps

3. The passage suggests which of the following about most existing maps of Native American lands?  
(A) They do not record the migrations of Native American tribes.  
(B) They have been preserved primarily because of their connection with treaties involving land transfers.  
(C) They tend to reflect archaeological evidence that has become outdated.  
(D) They tend to be less accurate when they are based on oral reports than when they are based on written documents.  
(E) They are not based primarily on the mapmakers' first-hand observations of Native American lands.

4. All of the following are examples of the type of evidence used in creating "**Most existing maps**" (line 7-8) EXCEPT  
(A) a nineteenth-century government report on population distribution of a particular tribe  
(B) taped conversations with people who lived on Native American tribal lands in the early twentieth century  
(C) aerial photographs of geological features of lands inhabited by Native Americans  
(D) findings from a recently excavated site once inhabited by a certain Native American people  
(E) a journal kept by a non-Native American explorer who traveled in Native American territory in the early nineteenth century

## Passage 22

Early models of the geography of the metropolis were unicellular: that is, they assumed that the entire urban district would normally be dominated by a single central district, around which the various economic functions of the community would be focused. This central business district (CBD) is the source of so-called high-order goods and services, which can most efficiently be provided from a central location rather than from numerous widely dispersed locations. Thus, retailers of infrequently and irregularly purchased goods, such as fur coats, jewelry, and antique furniture, and specialized service outlets, such as theaters, advertising agencies, law firms, and government agencies, will generally be found in the CBD. By contrast, less costly, more frequently demanded goods, such as groceries and housewares, and low-order services, such as shoe repair and hairdressing, will be available at many small, widely scattered outlets throughout the metropolis.

Both the concentric-ring model of the metropolis, first developed in Chicago in the late nineteenth century, and the sector model, closely associated with the work of Homer Hoyt in the 1930s, make the CBD the focal point of the metropolis. The concentric-ring model assumes that the varying degrees of need for accessibility to the CBD of various kinds of economic entities will be the main determinant of their location. Thus, wholesale and manufacturing firms, which need easy accessibility to the specialized legal, financial, and governmental services provided in the CBD, will normally be located just outside the CBD itself. Residential areas will occupy the outer rings of the model, with low-income groups residing in the relatively crowded older housing close to the business zone and high-income groups occupying the outermost ring, in the more spacious, newer residential areas built up through urban expansion. Homer Hoyt's sector model is a modified version of the concentric-ring model. Recognizing the influence of early established patterns of geographic distribution on the later growth of the city, Hoyt developed the concept of directional inertia. According to Hoyt, custom and social pressures tend to perpetuate locational patterns within the city. Thus, if a particular part of the city (say, the east side) becomes a common residential area for higher-income families, perhaps because of a particular topographical advantage such as a lake or other desirable feature, future expansion of the high-income segment of the population is likely to proceed in the same direction. In our example, as the metropolis expands, a wedge-shaped sector would develop on the east side of the city in which the higher-income residence would be clustered. Lower-income residences, along with manufacturing facilities, would be confined, therefore, to the western margins of the CBD. Although Hoyt's model undoubtedly represented an advance in sophistication over the simpler concentric-ring model, neither model fully accounts for the increasing importance of focal points other than the traditional CBD. Recent years have witnessed the establishment around older cities of secondary nuclei centered on suburban business districts. In other cases, particular kinds of goods, services, and manufacturing facilities have clustered in specialized centers away from the CBD, encouraging the development of particular housing patterns in the adjacent areas.

A new multicellular model of metropolitan geography is needed to express these and other emerging trends of urban growth.

### 1. The primary purpose of the passage is to

- (A) explain the significance of Hoyt's concept of directional inertia and its effect on patterns of urban growth
- (B) emphasize the inadequacy of past attempts to explain patterns of urban geography
- (C) analyze two varying theories concerning the distribution of residential areas within and around the metropolis
- (D) describe two models of metropolitan geography and suggest their limitations
- (E) show the importance of the central business district as a focus for urban growth

### 2. It can be inferred from the passage that according to a unicellular urban model, law firms are commonly located near the center of a city mainly because

- (A) law firms benefit from the proximity to financial and governmental services that a center city location provides
- (B) the demand for legal services is too irregular to support many small law firms in the outer districts of the city
- (C) law firms require accessibility to the wholesale and retail businesses that provide a major share of their clientele
- (D) the high-income groups that make up the primary users of legal services demand easy access to the firms' offices
- (E) the specialized service personnel required by a law firm are often interested in residing as close as possible to the city center

### 3. According to the concentric-ring model, in which of the following orders (from the center of the city outward) would the areas of the typical city be arranged?

- (A) central business district, low-income housing, wholesale and manufacturing businesses, high-income housing
- (B) central business district, wholesale and manufacturing businesses, low-income housing, high-income housing
- (C) wholesale and manufacturing businesses, central business district, low-income housing, high-income housing
- (D) central business district, high-income housing, wholesale and manufacturing businesses, low-income housing
- (E) wholesale and manufacturing businesses, low-income housing, central business district, high-income housing

### 4. According to the passage, the sector model differs from the concentric-ring model primarily in that it

- (A) stresses the role of topographic features in determining patterns of urban development
- (B) emphasizes the continuing expansion of the city as an influence on urban development
- (C) recognizes the importance of focal points of urban growth other than the traditional central business district
- (D) assumes that the need for access to the central business district is the main determinant of urban developmental patterns
- (E) takes into account the influence of certain social factors on urban geographical patterns

## Passage 22

Early models of the geography of the metropolis were unicellular: that is, they assumed that the entire urban district would normally be dominated by a single central district, around which the various economic functions of the community would be focused. This central business district (CBD) is the source of so-called high-order goods and services, which can most efficiently be provided from a central location rather than from numerous widely dispersed locations. Thus, retailers of infrequently and irregularly purchased goods, such as fur coats, jewelry, and antique furniture, and specialized service outlets, such as theaters, advertising agencies, law firms, and government agencies, will generally be found in the CBD. By contrast, less costly, more frequently demanded goods, such as groceries and housewares, and low-order services, such as shoe repair and hairdressing, will be available at many small, widely scattered outlets throughout the metropolis.

Both the concentric-ring model of the metropolis, first developed in Chicago in the late nineteenth century, and the sector model, closely associated with the work of Homer Hoyt in the 1930s, make the CBD the focal point of the metropolis. The concentric-ring model assumes that the varying degrees of need for accessibility to the CBD of various kinds of economic entities will be the main determinant of their location. Thus, wholesale and manufacturing firms, which need easy accessibility to the specialized legal, financial, and governmental services provided in the CBD, will normally be located just outside the CBD itself. Residential areas will occupy the outer rings of the model, with low-income groups residing in the relatively crowded older housing close to the business zone and high-income groups occupying the outermost ring, in the more spacious, newer residential areas built up through urban expansion. Homer Hoyt's sector model is a modified version of the concentric-ring model. Recognizing the influence of early established patterns of geographic distribution on the later growth of the city, Hoyt developed the concept of directional inertia. According to Hoyt, custom and social pressures tend to perpetuate locational patterns within the city. Thus, if a particular part of the city (say, the east side) becomes a common residential area for higher-income families, perhaps because of a particular topographical advantage such as a lake or other desirable feature, future expansion of the high-income segment of the population is likely to proceed in the same direction. In our example, as the metropolis expands, a wedge-shaped sector would develop on the east side of the city in which the higher-income residence would be clustered. Lower-income residences, along with manufacturing facilities, would be confined, therefore, to the western margins of the CBD. Although Hoyt's model undoubtedly represented an advance in sophistication over the simpler concentric-ring model, neither model fully accounts for the increasing importance of focal points other than the traditional CBD. Recent years have witnessed the establishment around older cities of secondary nuclei centered on suburban business districts. In other cases, particular kinds of goods, services, and manufacturing facilities have clustered in specialized centers away from the CBD, encouraging the development of particular housing patterns in the adjacent areas.

A new multicellular model of metropolitan geography is needed to express these and other emerging trends of urban growth.

### 5. The passage states that both the concentric-ring model and the sector model

- (A) inadequately represent the forms of urban development emerging in today's cities
- (B) need to be considerably refined to be of real use to students of urban growth
- (C) have been superseded by more recently developed models of urban growth
- (D) represent older cities more accurately than they do newly founded metropolitan areas
- (E) fail to explain the rapid outward growth of cities that has occurred in recent years

### 6. According to the passage, an updated model of urban geography would indicate the

- (A) phenomenal growth in population and area of suburban residential districts beyond the limits of the city itself
- (B) recent decline in the influence of business and industry over the geographical patterns of urban growth
- (C) growing importance of urban business and service centers located away from the central business district
- (D) clustering of business facilities in recently built areas, while older districts are turned into residential areas
- (E) gradual displacement of older urban centers by new, more highly specialized cities in geographically dispersed locations

### 7. All of the following are examples of the emerging trends of urban growth described in the last paragraph of the passage EXCEPT

- (A) the construction in a suburban community of a large shopping mall where many of the local residents do most of their buying
- (B) the opening of an industrial park on the outskirts of a declining older city
- (C) the construction of hospital-medical school complex near a highway fifteen miles from a downtown business district
- (D) the building of a residential development near a suburban tool factory to house the factory workers and their families
- (E) the creation of a luxury housing development in a rural setting thirty miles from the center of a city

### 8. Which of the following best describes the organization of the last paragraph of the passage?

- (A) It summarizes the information presented in the first three paragraphs and draws some conclusions.
- (B) It outlines a new model, applies it to recent phenomena, and argues in favor of its adoption.
- (C) It introduces no evidence in support of an existing model.
- (D) It evaluates two models in the light of recent evidence and advocates the development of a third model.
- (E) It compares one model unfavorably with another and develops the comparison by citing examples.

### Passage 23

It was once assumed that all living things could be divided into two fundamental and exhaustive categories. Multicellular plants and animals, as well as many unicellular organisms, are eukaryotic—their large, complex cells have a well-formed nucleus and many organelles. On the other hand, the true bacteria are prokaryotic cell, which are simple and lack a nucleus. The distinction between eukaryotes and bacteria, initially defined in terms of subcellular structures visible with a microscope, was ultimately carried to the molecular level. Here prokaryotic and eukaryotic cells have many features in common. For instance, they translate genetic information into proteins according to the same type of genetic coding. But even where the molecular processes are the same, the details in the two forms are different and characteristic of the respective forms. For example, the amino acid sequences of various enzymes tend to be typically prokaryotic or eukaryotic. The differences between the groups and the similarities within each group made it seem certain to most biologists that the tree of life had only two stems. Moreover, arguments pointing out the extent of both structural and functional differences between eukaryotes and true bacteria convinced many biologists that the precursors of the eukaryotes must have diverged from the common ancestor before the bacteria arose.

Although much of this picture has been sustained by more recent research, it seems fundamentally wrong in one respect. Among the bacteria, there are organisms that are significantly different both from the cells of eukaryotes and from the true bacteria, and it now appears that there are three stems in the tree of life. New techniques for determining the molecular sequence of the RNA of organisms have produced evolutionary information about the degree to which organisms are related, the time since they diverged from a common ancestor, and the reconstruction of ancestral versions of genes. These techniques have strongly suggested that although the true bacteria indeed form a large coherent group, certain other bacteria, the archaeobacteria, which are also prokaryotes and which resemble true bacteria, represent a distinct evolutionary branch that far antedates the common ancestor of all true bacteria.

1. The passage is primarily concerned with
- (A) detailing the evidence that has led most biologists to replace the trichotomous picture of living organisms with a dichotomous one
  - (B) outlining the factors that have contributed to the current hypothesis concerning the number of basic categories of living organisms
  - (C) evaluating experiments that have resulted in proof that the prokaryotes are more ancient than had been expected
  - (D) summarizing the differences in structure and function

found among true bacteria, archaeobacteria, and eukaryotes

(E) formulating a hypothesis about the mechanisms of evolution that resulted in the ancestors of the prokaryotes

2. According to the passage, investigations of eukaryotic and prokaryotic cells at the molecular level supported the conclusion that
- (A) most eukaryotic organisms are unicellular
  - (B) complex cells have well-formed nuclei
  - (C) prokaryotes and eukaryotes form two fundamental categories
  - (D) subcellular structures are visible with a microscope
  - (E) prokaryotic and eukaryotic cells have similar enzymes
3. According to the passage, which of the following statements about the two-category hypothesis is likely to be true?
- (A) It is promising because it explains the presence of true bacteria-like organisms such as organelles in eukaryotic cells.
  - (B) It is promising because it explains why eukaryotic cells, unlike prokaryotic cells, tend to form multicellular organisms.
  - (C) It is flawed because it fails to account for the great variety among eukaryotic organisms.
  - (D) It is flawed because it fails to account for the similarity between prokaryotes and eukaryotes
  - (E) It is flawed because it fails to recognize an important distinction among prokaryotes.
4. It can be inferred from the passage that which of the following have recently been compared in order to clarify the fundamental classifications of living things?
- (A) The genetic coding in true bacteria and that in other prokaryotes
  - (B) The organelle structures of archaeobacteria, true bacteria, and eukaryotes
  - (C) The cellular structures of multicellular organisms and unicellular organisms
  - (D) The molecular sequences in eukaryotic RNA, true bacterial RNA, and archaeobacterial RNA
  - (E) The amino acid sequences in enzymes of various eukaryotic species and those of enzymes in archaeobacterial species
5. If the “new techniques” mentioned in line 31 were applied in studies of biological classifications other than bacteria, which of the following is most likely?
- (A) Some of those classifications will have to be reevaluated.
  - (B) Many species of bacteria will be reclassified.
  - (C) It will be determined that there are four main categories of living things rather than three.
  - (D) It will be found that true bacteria are much older than eukaryotes
  - (E) It will be found that there is a common ancestor of the eukaryotes, archaeobacteria, and true bacteria.

### Passage 23

It was once assumed that all living things could be divided into two fundamental and exhaustive categories. Multicellular plants and animals, as well as many unicellular organisms, are eukaryotic—their large, complex cells have a well-formed nucleus and many organelles. On the other hand, the true bacteria are prokaryotic cell, which are simple and lack a nucleus. The distinction between eukaryotes and bacteria, initially defined in terms of subcellular structures visible with a microscope, was ultimately carried to the molecular level. Here prokaryotic and eukaryotic cells have many features in common. For instance, they translate genetic information into proteins according to the same type of genetic coding. But even where the molecular processes are the same, the details in the two forms are different and characteristic of the respective forms. For example, the amino acid sequences of various enzymes tend to be typically prokaryotic or eukaryotic. The differences between the groups and the similarities within each group made it seem certain to most biologists that the tree of life had only two stems. Moreover, arguments pointing out the extent of both structural and functional differences between eukaryotes and true bacteria convinced many biologists that the precursors of the eukaryotes must have diverged from the common ancestor before the bacteria arose.

Although much of this picture has been sustained by more recent research, it seems fundamentally wrong in one respect. Among the bacteria, there are organisms that are significantly different both from the cells of eukaryotes and from the true bacteria, and it now appears that there are three stems in the tree of life. New techniques for determining the molecular sequence of the RNA of organisms have produced evolutionary information about the degree to which organisms are related, the time since they diverged from a common ancestor, and the reconstruction of ancestral versions of genes. These techniques have strongly suggested that although the true bacteria indeed form a large coherent group, certain other bacteria, the archaeobacteria, which are also prokaryotes and which resemble true bacteria, represent a distinct evolutionary branch that far antedates the common ancestor of all true bacteria.

6. According to the passage, researchers working under the two-category hypothesis were correct in thinking that

- (A) prokaryotes form a coherent group
- (B) the common ancestor of all living things had complex properties
- (C) eukaryotes are fundamentally different from true bacteria
- (D) true bacteria are just as complex as eukaryotes
- (E) ancestral versions of eukaryotic genes functioned differently from their modern counterparts

7. All of the following statements are supported by the passage EXCEPT:

- (A) True bacteria form a distinct evolutionary group.
- (B) Archaeobacteria are prokaryotes that resemble true bacteria.
- (C) True bacteria and eukaryotes employ similar types of genetic coding.
- (D) True bacteria and eukaryotes are distinguishable at the subcellular level
- (E) Amino acid sequences of enzymes are uniform for eukaryotic and prokaryotic organisms.

8. The author's attitude toward the view that living things are divided into three categories is best described as one of

- (A) tentative acceptance
- (B) mild skepticism
- (C) limited denial
- (D) studious criticism
- (E) whole hearted endorsement

## Passage 24

Since the late 1970's, in the face of a severe loss of market share in dozens of industries, manufacturers in the United States have been trying to improve productivity—and therefore enhance their international competitiveness—through cost-cutting programs. (Cost-cutting here is defined as raising labor output while holding the amount of labor constant.) However, from 1978 through 1982, productivity—the value of goods manufactured divided by the amount of labor input—did not improve; and while the results were better in the business upturn of the three years following, they ran 25 percent lower than productivity improvements during earlier, post-1945 upturns. At the same time, it became clear that the harder manufactures worked to implement cost-cutting, the more they lost their competitive edge.

With this paradox in mind, I recently visited 25 companies; it became clear to me that the cost-cutting approach to increasing productivity is fundamentally flawed. Manufacturing regularly observes a “40, 40, 20” rule. Roughly 40 percent of any manufacturing-based competitive advantage derives from long-term changes in manufacturing structure (decisions about the number, size, location, and capacity of facilities) and in approaches to materials. Another 40 percent comes from major changes in equipment and process technology. The final 20 percent rests on implementing conventional cost-cutting. This rule does not imply that cost-cutting should not be tried. The well-known tools of this approach—including simplifying jobs and retraining employees to work smarter, not harder—do produce results. But the tools quickly reach the limits of what they can contribute.

Another problem is that the cost-cutting approach hinders innovation and discourages creative people. As Abernathy's study of automobile manufacturers has shown, an industry can easily become prisoner of its own investments in cost-cutting techniques, reducing its ability to develop new products. And managers under pressure to maximize cost-cutting will resist innovation because they know that more fundamental changes in processes or systems will wreak havoc with the results on which they are measured. Production managers have always seen their job as one of minimizing costs and maximizing output. This dimension of performance has

until recently sufficed as a basis of evaluation, but it has created a penny-pinching, mechanistic culture in most factories that has kept away creative managers.

Every company I know that has freed itself from the paradox has done so, in part, by developing and implementing a manufacturing strategy. Such a strategy focuses on the manufacturing structure and on equipment and process technology. In one company a manufacturing strategy that allowed different areas of the factory to specialize in different markets replaced the conventional cost-cutting approach; within three years the company regained its competitive advantage. Together with such strategies, successful companies are also encouraging managers to focus on a wider set of objectives besides cutting costs. There is hope for manufacturing, but it clearly rests on a different way of managing.

1. The author refers to Abernathy's study (line 36) most probably in order to

- (A) qualify an observation about one rule governing manufacturing
- (B) address possible objections to a recommendation about improving manufacturing competitiveness
- (C) support an earlier assertion about one method of increasing productivity
- (D) suggest the centrality in the United States economy of a particular manufacturing industry
- (E) given an example of research that has questioned the wisdom of revising a manufacturing strategy

2. The author suggests that implementing conventional cost-cutting as a way of increasing manufacturing competitiveness is a strategy that is

- (A) flawed and ruinous
- (B) shortsighted and difficult to sustain
- (C) popular and easily accomplished
- (D) useful but inadequate
- (E) misunderstood but promising

## Passage 25

Modern manufacturers, who need reliable sources of materials and technologically advanced components to operate profitably, face an increasingly difficult choice between owning the producers of these items (a practice known as backward integration) and buying from independent producers. Manufacturers who integrate may reap short-term rewards, but they often restrict their future capacity for innovative product development.

Backward integration removes the need for some purchasing and marketing functions, centralizes overhead, and permits manufacturers to eliminate duplicated efforts in research and development. Where components are commodities (ferrous metals or petroleum, for example), backward integration almost certainly boosts profits. Nevertheless, because product innovation means adopting the most technologically advanced and cost-effective ways of making components, backward integration may entail a serious risk for a technologically active company—for example, a producer of sophisticated consumer electronics.

A company that decides to make rather than buy important parts can lock itself into an outdated technology. Independent suppliers may be unwilling to share innovations with assemblers with whom they are competing. Moreover, when an assembler sets out to master the technology of producing advanced components, the resulting demands on its resources may compromise its ability to assemble these components successfully into end products. Long-term contracts with suppliers can achieve many of the same cost benefits as backward integration without compromising a company's ability to innovate.

However, moving away from backward integration is not a complete solution either. Developing innovative technologies requires independent suppliers of components to invest huge sums in research and development. The resulting low profit margins on the sale of components threaten the long-term financial stability of these firms. Because the ability of end-product assemblers to respond to market opportunities depends heavily on suppliers of components, assemblers are often forced to integrate by purchasing the suppliers of components just to keep their suppliers in business.

### 1. According to the passage, which of the following relationships between profits and investments in research and development holds true for producers of technologically advanced components?

- A) Modest investments are required and the profit margins on component sales are low.
- B) Modest investments are required but the profit margins on component sales are quite high.
- C) Despite the huge investments that are required, the profit margins on component sales are high.
- D) Because huge investments are required, the profit margins on component sales are low.
- E) Long-term contractual relationships with purchasers of components ensure a high ratio of profits to investment costs.

### 2. According to passage, when an assembler buys a firm that makes some important component of the end product that the assembler produces, independent suppliers of the same component may

- A. withhold technological innovations from the assembler
- B. experience improved profit margins of on sales of their products
- C. lower their prices to protect themselves from competition
- D. suffer financial difficulties and go out of business
- E. stop developing new versions of the component

### 3. According to the passage, all of the following are benefits associated with backward integration EXCEPT:

- A. improvement in the management of overhead expenses
- B. enhancement of profit margins on sales of components
- C. simplification of purchasing and marketing operations
- D. reliability of a source of necessary components
- E. elimination of unnecessary research efforts

### 4. Which of the following best describes the way the last paragraph functions in the context of the passage?

- A. The last in a series of arguments supporting the central argument of the passage is presented.
- B. A viewpoint is presented which qualifies one presented earlier in the passage.
- C. Evidence is presented in support of the argument developed in the preceding paragraph.
- D. Questions arising from the earlier discussion are identified as points of departure for further study of the topic.
- E. A specific example is presented to illustrate the main elements of argument presented in the earlier paragraphs.

## Passage 26

Historians have long thought that America was, from the beginning, profoundly influenced by the Lockean notion of liberty, with its strong emphasis on individual rights and self-interest. Yet in his recent book, historian J. G. A. Pocock argues that early American culture was actually rooted in the writings of Machiavelli, not Locke. The implications of this substitution are important: if Pocock's argument is right, then Americans may not be as deeply individualistic and capitalistic as many believe. Pocock argues that out of the writings of antiquity Machiavelli created a body of political thinking called "classical republicanism." This body of thought revived the ancient belief that a human being was by nature a citizen who achieved moral fulfillment by participating in a self-governing republic. Liberty was interpreted as a condition that is realized when people are virtuous and are willing to sacrifice their individual interests for the sake of the community. To be completely virtuous, people had to be independent and free of the petty interests of the marketplace. The greatest enemy of virtue was commerce. This classical republican tradition is said by Pocock to have shaped the ideology of America during the eighteenth century. Many events in early American history can be reinterpreted in light of Pocock's analysis. Jefferson is no longer seen as a progressive reader of Locke leading America into its individualistic future; instead Jefferson is understood as a figure obsessed with virtue and corruption and fearful of new commercial developments. Influenced by Pocock, some historians have even argued that a communitarian and precapitalist mentality was pervasive among the eighteenth-century farmers of America.

Yet Pocock's thesis and the reinterpretation of the history of eighteenth-century America engendered by it are of dubious validity. If Americans did believe in the ideals of classical virtue that stressed civic duty and made the whole community greater than its discrete parts, then why did the colonists lack a sense of obligation to support the greater good of the British Empire? If indeed America has not always been the society of individual rights and self-interest that it is today, how and when did it come so? Classical republicanism is elitist, and it certainly had little to offer the important new social groups of artisans and shopkeepers that emerged in America during the eighteenth century. These middle-class radicals, for whom John Wilkes and Thomas Paine were spokesmen, had none of the independence from the market that the landed gentry had. They were less concerned with virtue and community than they were with equality and private rights. They hated political privilege and wanted freedom from an elite-dominated state. In short, the United States was created not in a mood of classical anxiety over virtue and corruption, but in a mood of liberal optimism over individual profits and prosperity.

### 1. Which of the following best states the author's main point?

- (A) Classical republicanism could not have been the ideological basis of eighteenth-century America.
- (B) Classical republicanism is an elitist theory that was rejected by eighteenth-century artisans and shopkeepers.
- (C) Pocock understates the importance of the contributions Machiavelli made to the formation of early American culture.
- (D) Pocock fails to capture the great extent to which eighteenth-century Americans were committed to a sense of civic duty.
- (E) Pocock's account of Jefferson is incompatible with Jefferson's commitment to a Lockean notion of liberty.

### 2. The conception of liberty that, according to Pocock, formed the basis of America's eighteenth-century ideology is most clearly exhibited by which of the following individuals?

- (A) The merchant who rebuilds the damaged sidewalk in front of his store in order to avoid potential lawsuits by customers who might fall there
- (B) The professor who allows her students to help her design the content and the format of the courses she teaches
- (C) The doctor who bows to government pressure and agrees to treat a small number of low-income patients at no cost
- (D) The lawyer who argues that a state law prohibiting smoking in public places unfairly encroaches on the rights of smokers
- (E) The engineer whose business suffers as a result of the personal time and energy he devotes to a program to clean up city streets

### 3. According to the author, eighteenth-century American artisans and shopkeepers had little reason to

- (A) support the political efforts of Thomas Jefferson
- (B) reject the ideals of classical virtue
- (C) embrace the principles of classical republicanism
- (D) renounce the political objectives of the British Empire
- (E) worry about increasing profits and maintaining general prosperity

### 4. The author mentions which of the following as a fact that weakens Pocock's argument about the ideology of eighteenth-century America?

- (A) Jefferson's obsession with virtue and corruption and his fear of commercial development
- (B) The precapitalist mentality that was pervasive among farmers in early America
- (C) The political decline of artisans and shopkeepers in eighteenth-century America
- (D) The colonists' lack of commitment to support the general welfare of the British Empire
- (E) The existence of political privilege in early American society

## Passage 26

Historians have long thought that America was, from the beginning, profoundly influenced by the Lockean notion of liberty, with its strong emphasis on individual rights and self-interest. Yet in his recent book, historian J. G. A. Pocock argues that early American culture was actually rooted in the writings of Machiavelli, not Locke. The implications of this substitution are important: if Pocock's argument is right, then Americans may not be as deeply individualistic and capitalistic as many believe. Pocock argues that out of the writings of antiquity Machiavelli created a body of political thinking called "classical republicanism." This body of thought revived the ancient belief that a human being was by nature a citizen who achieved moral fulfillment by participating in a self-governing republic. Liberty was interpreted as a condition that is realized when people are virtuous and are willing to sacrifice their individual interests for the sake of the community. To be completely virtuous, people had to be independent and free of the petty interests of the marketplace. The greatest enemy of virtue was commerce. This classical republican tradition is said by Pocock to have shaped the ideology of America during the eighteenth century. Many events in early American history can be reinterpreted in light of Pocock's analysis. Jefferson is no longer seen as a progressive reader of Locke leading America into its individualistic future; instead Jefferson is understood as a figure obsessed with virtue and corruption and fearful of new commercial developments. Influenced by Pocock, some historians have even argued that a communitarian and precapitalist mentality was pervasive among the eighteenth-century farmers of America.

Yet Pocock's thesis and the reinterpretation of the history of eighteenth-century America engendered by it are of dubious validity. If Americans did believe in the ideals of classical virtue that stressed civic duty and made the whole community greater than its discrete parts, then why did the colonists lack a sense of obligation to support the greater good of the British Empire? If indeed America has not always been the society of individual rights and self-interest that it is today, how and when did it become so? Classical republicanism is elitist, and it certainly had little to offer the important new social groups of artisans and shopkeepers that emerged in America during the eighteenth century. These middle-class radicals, for whom John Wilkes and Thomas Paine were spokesmen, had none of the independence from the market that the landed gentry had. They were less concerned with virtue and community than they were with equality and private rights. They hated political privilege and wanted freedom from an elite-dominated state. In short, the United States was created not in a mood of classical anxiety over virtue and corruption, but in a mood of liberal optimism over individual profits and prosperity.

**5. The passage suggests that, if classical republicanism had been the ideology of eighteenth-century America, which of the following would have resulted?**

- (A) People would have been motivated to open small businesses and expand commercial activity.
- (B) Citizens and politicians would not have been encouraged to agitate for increased individual rights.
- (C) People would have been convinced that by pursuing their own interests they were contributing to the good of the group.
- (D) The political and social privileges enjoyed by the landed gentry would have been destroyed.
- (E) A mood of optimism among people over individual profits and prosperity would have been created.

**6. The author implies that Pocock's argument about the ideology of eighteenth-century America would be more plausible if the argument explained which of the following?**

- (A) How a society that was once committed to the ideals of classical virtue could be transformed into a society of individual rights and self-interest
- (B) How Thomas Jefferson could have become obsessed with individual rights and with prosperity and profits
- (C) Why classical republicanism had such wide appeal among those who were free from the demands of the marketplace
- (D) Why many colonists who embraced classical republicanism were reluctant to place their individual interests above those of Great Britain
- (E) Why the landed gentry in eighteenth-century America should have believed that moral fulfillment is achieved by participating in a self-governing republic

**7. According to the passage, Pocock's theory suggests that many eighteenth-century Americans believed that increasing commercial activity would**

- (A) force the landed gentry to relinquish their vast holdings
- (B) enrich the nation and increase individual rights
- (C) cause some people to forfeit their liberty and virtue
- (D) create a mood of optimism about national prosperity
- (E) strengthen the political appeal of middle-class radicals

**8. The author is primarily concerned with**

- (A) refuting a proposed thesis about eighteenth-century America
- (B) analyzing a long-established interpretation of American history
- (C) criticizing a set of deeply held beliefs about early American ideology
- (D) reconciling opposing interpretations of eighteenth-century American ideology
- (E) defending a novel reading of the ideology of eighteenth-century America

## Passage 27

Most large corporations in the United States were once run by individual capitalists who owned enough stock to dominate the board of directors and dictate company policy. Because putting such large amounts of stock on the market would only depress its value, they could not sell out for a quick profit and instead had to concentrate on improving the long-term productivity of their companies. Today, with few exceptions, the stock of large United States corporations is held by large institutions — pension funds, for example — and because these institutions are prohibited by antitrust laws from owning a majority of a company's stock and from actively influencing a company's decision-making, they can enhance their wealth only by buying and selling stock in anticipation of fluctuations in its value. A minority shareholder is necessarily a short term trader. As a result, United States productivity is unlikely to improve unless shareholders and the managers of the companies in which they invest are encouraged to enhance long-term productivity (and hence long-term profitability), rather than simply to maximize short term profits.

Since the return of the **old-style capitalist** is unlikely, today's short-term traders must be remade into tomorrow's long-term capitalistic investors. The legal limits that now prevent financial institutions from acquiring a dominant shareholding position in a corporation should be removed, and such institutions encouraged to take a more active role in the operations of the companies in which they invest. **In addition, any institution that holds twenty percent or more of a company's stock should be forced to give the public one day's notice of the intent to sell those shares.** Unless the announced sale could be explained to the public on grounds other than anticipated future losses, the value of the stock would plummet and, like the old-time capitalists, major investors could cut their losses only by helping to restore their companies' productivity. Such measures would force financial institutions to become capitalists whose success depends not on trading shares at the propitious moment, but on increasing the productivity of the companies in which they invest.

1. In the passage, the author is primarily concerned with doing which of the following?

- (A) Comparing two different approaches to a problem
- (B) Describing a problem and proposing a solution
- (C) Defending an established method
- (D) Presenting data and drawing conclusions from the data
- (E) Comparing two different analyses of a current situation

2. It can be inferred from the passage that which of the following is true of majority shareholders in a corporation?

- (A) They make the corporation's operational management decisions.
- (B) They are not allowed to own more than fifty percent of the corporation's stock.
- (C) They cannot make quick profits by selling their stock in the corporation.
- (D) They are more interested in profits than in productivity.
- (E) They cannot sell any of their stock in the corporation without giving the public advance notice.

3. According to the passage, the purpose of the requirement suggested in lines 30-33 [**In addition, any institution that holds twenty percent or more of a company's stock should be forced to give the public one day's notice of the intent to sell those shares.**] would be which of the following?

- (A) To encourage institutional stockholders to sell stock that they believe will decrease in value
- (B) To discourage institutional stockholders from intervening in the operation of a company whose stock they own
- (C) To discourage short-term profit-taking by institutional stockholders
- (D) To encourage a company's employees to take an active role in the ownership of stock in the company
- (E) To encourage investors to diversify their stock holdings

4. The author suggests that which of the following is a true statement about people who typify the "**old-style capitalist**" referred to in line 23?

- (A) They now rely on outdated management techniques.
- (B) They seldom engaged in short-term trading of the stock they owned.
- (C) They did not influence the investment policies of the corporations in which they invested.
- (D) They now play a much smaller role in the stock market as a result of antitrust legislation.
- (E) They were primarily concerned with maximizing the short-term profitability of the corporations in which they owned stock.

## Passage 27

Most large corporations in the United States were once run by individual capitalists who owned enough stock to dominate the board of directors and dictate company policy. Because putting such large amounts of stock on the market would only depress its value, they could not sell out for a quick profit and instead had to concentrate on improving the long-term productivity of their companies. Today, with few exceptions, the stock of large United States corporations is held by large institutions — pension funds, for example — and because these institutions are prohibited by antitrust laws from owning a majority of a company's stock and from actively influencing a company's decision-making, they can enhance their wealth only by buying and selling stock in anticipation of fluctuations in its value. A minority shareholder is necessarily a short term trader. As a result, United States productivity is unlikely to improve unless shareholders and the managers of the companies in which they invest are encouraged to enhance long-term productivity (and hence long-term profitability), rather than simply to maximize short term profits.

Since the return of the **old-style capitalist** is unlikely, today's short-term traders must be remade into tomorrow's long-term capitalistic investors. The legal limits that now prevent financial institutions from acquiring a dominant shareholding position in a corporation should be removed, and such institutions encouraged to take a more active role in the operations of the companies in which they invest. **In addition, any institution that holds twenty percent or more of a company's stock should be forced to give the public one day's notice of the intent to sell those shares.** Unless the announced sale could be explained to the public on grounds other than anticipated future losses, the value of the stock would plummet and, like the old-time capitalists, major investors could cut their losses only by helping to restore their companies' productivity. Such measures would force financial institutions to become capitalists whose success depends not on trading shares at the propitious moment, but on increasing the productivity of the companies in which they invest.

5. It can be inferred that the author makes which of the following assumptions about the businesses once controlled by individual capitalists?

- (A) These businesses were less profitable than are businesses today.
- (B) Improving long-term productivity led to increased profits.
- (C) Each business had only a few stockholders.
- (D) There was no short-term trading in the stock of these businesses.
- (E) Institutions owned no stock in these companies.

6. The author suggests that the role of large institutions as stockholders differs from that of the "old-style capitalist" in part because large institutions

- (A) invest in the stock of so many companies that they cannot focus attention on the affairs of any single corporation
- (B) are prohibited by law from owning a majority of a corporation's stock
- (C) are influenced by brokers who advise against long-term ownership of stocks
- (D) are able to put large amounts of stock on the market without depressing the stock's value
- (E) are attracted to the stocks of corporations that demonstrate long-term gains in productivity

7. The primary function of the second paragraph of the passage is to

- (A) identify problems
- (B) warn of consequence
- (C) explain effects
- (D) evaluate solutions
- (E) recommend actions

8. The passage supports which of the following statements?

- (A) Antitrust laws prevent any single shareholder from acquiring a majority of the stock in a corporation.
- (B) Institutions that intend to sell a large block of stock in a single corporation must give at least twenty-four hours notice of the sale.
- (C) In most corporations it is the board of directors rather than the corporate managers who make policy decisions.
- (D) The sudden sale of a large amount of stock in any one corporation makes the value of the stock go down.
- (E) The way corporations are currently run, it is unlikely that increased productivity would lead to short-term increases in stock values.

## Passage 28

In terms of its prevalence, obesity is the leading disease in the United States. There is no universally accepted standard for obesity, defined generally as an excess of adipose tissue, but a common rule of thumb classifies people who are more than 20 percent above their desirable weight as obese. By this measure, 30 percent of men and 40 percent of women in America are obese. Although studies show that few of these people will ever recover fully and permanently from the disease, the incidence of obesity in future generations can be reduced.

Adipose tissue is a triumph of evolution. Fat yields 9 calories per gram, while protein, like carbohydrates, yields only 4 calories per gram. Fat also contains much less water than protein does. Therefore, fat is much more efficient for storing excess energy than is protein. Primitive humans, with uncertain food sources, had a great need for excess fat, and their bodies adapted accordingly. Modern humans, with a predictable food supply and a sedentary life-style, are burdened by this vestige of evolution. Although they need some adipose tissue to provide insulation and protect internal organs from injury, modern humans need much less than their primitive ancestors did.

In an attempt to shed excess adipose tissue, many Americans turn from one fad diet to another, and a billion-dollar diet industry has grown up to aid them in their efforts. Nevertheless, the five-year cure rate for obesity is very low. In fact, by comparison, cancer is more curable. The reasons for this are psychological as well as physiological.

From a physical standpoint, losing a pound or two a week for a few weeks is not difficult because most of the loss is in the form of protein and water, and protein carries four times its weight in water. However, protein is also the only source of nitrogen in the body, and when the body loses too much nitrogen, it acts to correct the imbalance by excreting less nitrogen than it takes in. Hence beyond a certain point additional weight loss must come from adipose tissue, which, because of its compactness, takes longer to shed. The body's tendency to return to nitrogen balance and to protect its energy reserves can be so strong that dieters may stop losing or even gain weight while still expending more calories than they ingest. As a result, they frequently suffer not only from hunger, weakness, and a decreased metabolic rate, but also from depression and inactivity, all of which lead them to abandon their diets. Probably because of numerous psychological factors as well as physiological factors such as increased lipid synthesis, they then tend to regain weight rapidly.

While vigorous attempts to reduce obesity in America should be aimed at all affected, the most successful efforts are likely to be those directed toward children. If the advertising and food industries stop trying to sell high-calorie, nutritionally deficient food to children, and if parents understand that the feeding patterns they impose on their children can determine the

adolescent and adult eating habits those children will develop, the future generation may not be as fat as ours is.

- The primary purpose of the passage is to
  - explain why prevention is the best defense against obesity
  - criticize the food and advertising industries for encouraging bad eating habits and thus contributing to the prevalence of obesity in the United States
  - recruit volunteers for a national crusade against obesity
  - discourage dependency on fad diets as a method for losing weight
  - argue that obesity is a genetic disorder that is virtually impossible to cure
- By the rule of thumb mentioned in the passage, which of the following would be considered obese?
  - A 25-pound toddler whose desirable weight is 20 pounds
  - A large-framed woman weighting 140 pounds whose desirable weight for her height is between 112 and 120 pounds
  - A 175-pound man who was 25 pounds over his desirable weight and then gained an additional 10 pounds
  - II only
  - III only
  - I and III only
  - II and III only
  - I, II, and III
- Which of the following, if true, best helps to explain why a greater percentage of women than men in the United States are considered obese by the measure mentioned in the passage?
  - The measure is the same for both men and women, but it is normal for women to carry a greater percentage of fat at any weight.
  - The average man is heavier than the average woman; therefore, men generally need to gain more weight than women do before they are considered obese.
  - There are more women in the United States than there are men.
  - Because of the influence of the fashion and film industries, many American women consider themselves obese even though they are not.
  - Women burn off fewer calories than men because their bodies contain a lower percentage of muscle, and muscle burns calories at a faster rate than fat.
- According to the passage, modern humans do not need to store as much fat as primitive humans because
  - modern humans work fewer hours than their primitive forebears did
  - the diet of modern humans is higher in protein than was the diet of primitive humans
  - modern humans eat more regularly than primitive humans did
  - primitive humans had to insulate their bodies from the cold whereas modern humans do not
  - the food consumed by modern humans has a higher nutritional value than that consumed by primitive humans

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Adipose tissue is a triumph of evolution. Fat yields 9 calories per gram, while protein, like carbohydrates, yields only 4 calories per gram. Fat also contains much less water than protein does.

Therefore, fat is much more efficient for storing excess energy than is protein. Primitive humans, with uncertain food sources, had a great need for excess fat, and their bodies adapted accordingly. Modern humans, with a predictable food supply and a sedentary life-style, are burdened by this vestige of evolution. Although they need some adipose tissue to provide insulation and protect internal organs from injury, modern humans need much less than their primitive ancestors did.

In an attempt to shed excess adipose tissue, many Americans turn from one fad diet to another, and a billion-dollar diet industry has grown up to aid them in their efforts. Nevertheless, the five-year cure rate for obesity is very low. In fact, by comparison, cancer is more curable. The reasons for this are psychological as well as physiological.

From a physical standpoint, losing a pound or two a week for a few weeks is not difficult because most of the loss is in the form of protein and water, and protein carries four times its weight in water. However, protein is also the only source of nitrogen in the body, and when the body loses too much nitrogen, it acts to correct the imbalance by excreting less nitrogen than it takes in. Hence beyond a certain point additional weight loss must come from adipose tissue, which, because of its compactness, takes longer to shed. The body's tendency to return to nitrogen balance and to protect its energy reserves can be so strong that dieters may stop losing or even gain weight while still expending more calories than they ingest. As a result, they frequently suffer not only from hunger, weakness, and a decreased metabolic rate, but also from depression and inactivity, all of which lead them to abandon their diets. Probably because of numerous psychological factors as well as physiological factors such as increased lipid synthesis, they then tend to regain weight rapidly.

While vigorous attempts to reduce obesity in America should be aimed at all affected, the most successful efforts are likely to be those directed toward children. If the advertising and food industries stop trying to sell high-calorie, nutritionally deficient food to children, and if parents understand that the feeding patterns they impose on their children can determine the adolescent and adult eating habits those children will develop, the future generation may not be as fat as ours is.

5. All of the following statements about protein are supported by the passage EXCEPT:

- (A) Gram for gram, foods that are high in protein are lower in calories than foods that are high in fat.
- (B) The body gets all of its nitrogen from protein.
- (C) Nine grams of protein yield the same number of calories as 4 grams of fat.
- (D) Protein is not converted into adipose tissue.
- (E) Five grams of protein carry 20 grams of water.

6. The author mentions that "cancer is more curable" (line 27) than obesity in order to

- (A) underscore the point that obesity is the leading disease in the United States
- (B) support the conclusion that it is easier to keep people from becoming obese than it is to cure them once they are
- (C) discourage obese people from trying to lose weight
- (D) demonstrate by analogy that more money should be spent on obesity research
- (E) refute the contention that the causes of obesity are purely physiological

7. The passage contains information that answers which of the following questions?

- (A) What percent of the total population in the United States is obese?
- (B) What psychological factors cause people to gain weight rapidly once they go off a diet?
- (C) What function does nitrogen perform in the body?
- (D) How is an individual's desirable weight determined?
- (E) If a snack bar contains 130 calories and 4 grams of fat, what percentage of the calories in the bar come from fat?

8. The author mentions all of the following as factors that cause obese people to abandon diets EXCEPT

- (A) depression
- (B) increased lipid synthesis
- (C) a negative nitrogen balance
- (D) enervation
- (E) a lower metabolic rate

9. Which of the following, if it could be demonstrated, would most strengthen the claim that the feeding patterns of children "can determine the adolescent and adult eating habits those children will develop" (lines 55-56)?

- (A) The incidence of obesity in children whose parents are both obese is 80 percent.
- (B) Thirty-six percent of infants who are obese during their first half year of life are also overweight between the ages of 20 and 36.
- (C) Excessive weight gain during the teen years can set the stage for a lifetime battle against the bulge.
- (D) Up to 80 percent of youngsters who are fat as 5-year-olds end up fat as adults.
- (E) The average child witnesses more than 15,000 commercials a year for snacks, candy, and soft drinks laden with fat, sugar, and calories.

## Passage 29

New observations about the age of some globular clusters in our Milky Way galaxy have cast doubt on a long-held theory about how the galaxy was formed. The Milky Way contains about 125 globular clusters (compact groups of anywhere from several tens of thousands to perhaps a million stars) distributed in a roughly spherical halo around the galactic nucleus. The stars in these clusters are believed to have been born during the formation of the galaxy, and so may be considered relics of the original galactic nebula, holding vital clues to the way the formation took place. The conventional theory of the formation of the galaxy contends that roughly 12 to 13 billion years ago the Milky Way formed over a relatively short time (about 200 million years) when a spherical cloud of gas collapsed under the pressure of its own gravity into a disc surrounded by a halo. Such a rapid formation of the galaxy would mean that all stars in the halo should be very nearly the same age.

However, the astronomer Michael Bolte has found considerable variation in the ages of globular clusters. One of the clusters studied by Bolte is 2 billions years older than most other clusters in the galaxy, while another is 2 billion years younger. A colleague of Bolte contends that the cluster called Palomar 12 is 5 billion years younger than most other globular clusters.

To explain the age differences among the globular clusters, astronomers are taking a second look at "renegade" theories. One such newly fashionable theory, first put forward by Richard Larson in the early 1970's, argues that the halo of the Milky Way formed over a period of a billion or more years as hundreds of small gas clouds drifted about, collided, lost orbital energy, and finally collapsed into a centrally condensed elliptical system. Larson's conception of a "lumpy and turbulent" protogalaxy is complemented by computer modeling done in the 1970's by mathematician Alan Toomre, which suggests that closely interacting spiral galaxies could lose enough orbital energy to merge into a single galaxy.

### 1. The passage is primarily concerned with discussing

- (A) the importance of determining the age of globular clusters in assessing when the Milky Way galaxy was formed
- (B) recent changes in the procedures used by astronomers to study the formation of the Milky Way galaxy
- (C) current disputes among astronomers regarding the size and form of the Milky Way galaxy
- (D) the effect of new discoveries regarding globular clusters on theories about the formation of the Milky Way galaxy
- (E) the origin, nature, and significance of groups of stars known as globular clusters

### 2. According to the passage, one way in which Larson's theory and the conventional theory of the formation of the Milky Way galaxy differ is in their assessment of the

- (A) amount of time it took to form the galaxy
- (B) size of the galaxy immediately after its formation
- (C) the particular gases involved in the formation the galaxy
- (D) importance of the age of globular clusters in determining how the galaxy was formed

- (E) shape of the halo that formed around the galaxy

### 3. Which of the following, if true, would be most useful in supporting the conclusions drawn from recent observations about globular clusters?

- (A) There is firm evidence that the absolute age of the Milky Way galaxy is between 10 and 17 billion years.
- (B) A survey reveals that a galaxy close to the Milky Way galaxy contains globular clusters of ages close to the age of Palomar 12.
- (C) A mathematical model proves that small gas clouds move in regular patterns.
- (D) Space probes indicate that the stars in the Milky Way galaxy are composed of several different types of gas.
- (E) A study of over 1,500 individual stars in the halo of the Milky Way galaxy indicates wide discrepancies in their ages.

### 4. If Bolte and his colleague are both correct, it can be inferred that the globular cluster Palomar 12 is approximately

- (A) 5 billion years younger than any other cluster in the galaxy
- (B) the same age as most other clusters in the galaxy
- (C) 7 billion years younger than another cluster in the galaxy
- (D) 12 billion years younger than most other clusters in the galaxy
- (E) 2 billion years younger than most other clusters in the galaxy

### 5. The passage suggests that Toomre's work complements Larson's theory because it

- (A) specifies more precisely the time frame proposed by Larson
- (B) subtly alters Larson's theory to make it more plausible
- (C) supplements Larson's hypothesis with direct astronomical observations
- (D) provides theoretical support for the ideas suggested by Larson
- (E) expands Larson's theory to make it more widely applicable

### 6. Which of the following most accurately states a finding of Bolte's research, as described in the passage?

- (A) The globular clusters in the Milky Way galaxy are 2 billion years older than predicted by the conventional theory.
- (B) The ages of at least some globular clusters in the Milky Way galaxy differ by at least 4 billion years.
- (C) One of the globular clusters in the Milky Way galaxy is 5 billion years younger than most others.
- (D) The globular clusters in the Milky Way galaxy are significantly older than the individual stars in the halo.
- (E) Most globular clusters in the Milky Way galaxy are between 11 and 15 billion years old.

### 7. The author of the passage puts the word "renegade" (line 29) in quotation marks most probably in order to

- (A) emphasize the lack of support for the theories in question
- (B) contrast the controversial quality of the theories in question with the respectable character of their formulators
- (C) generate skepticism about the theories in question
- (D) ridicule the scientists who once doubted the theories in question
- (E) indicate that the theories in question are no longer as unconventional as they once seemed

### Passage 30

Schools expect textbooks to be a valuable source of information for students. My research suggests, however, that textbooks that address the place of Native Americans within the history of the United States distort history to suit a particular cultural value system. In some textbooks, for example, settlers are pictured as more humane, complex, skillful, and wise than Native Americans. In essence, textbooks stereotype and deprecate the numerous Native American cultures while reinforcing the attitude that the European conquest of the New World denotes the superiority of European cultures. Although textbooks evaluate Native American architecture, political systems, and homemaking, I contend that they do it from an ethnocentric, European perspective without recognizing that other perspectives are possible. One argument against my contention asserts that, by nature, textbooks are culturally biased and that I am simply underestimating children's ability to see through these biases. Some **researchers** even claim that by the time students are in high school, they know they cannot take textbooks literally. Yet substantial evidence exists to the contrary. **Two researchers**, for example, have conducted studies that suggest that children's attitudes about particular cultures are strongly influenced by the textbooks used in schools. Given this, an ongoing, careful review of how school textbooks depict Native Americans is certainly warranted.

1. Which of the following would most logically be the topic of the paragraph immediately following the passage?  
(A) Specific ways to evaluate the biases of United States history textbooks  
(B) The centrality of the teacher's role in United States history courses  
(C) Nontraditional methods of teaching United States history  
(D) The contributions of European immigrants to the development of the United States  
(E) Ways in which parents influence children's political attitudes
2. The primary purpose of the passage is to  
(A) describe in detail one research study regarding the impact of history textbooks on children's attitudes and beliefs about certain cultures  
(B) describe revisions that should be made to United States history textbooks  
(C) discuss the difficulty of presenting an accurate history of the United States  
(D) argue that textbooks used in schools stereotype Native Americans and influence children's attitudes  
(E) summarize ways in which some textbooks give distorted

pictures of the political systems developed by various Native American groups

3. The author mentions **two researchers'** studies (lines 22-25) most likely in order to  
(A) suggest that children's political attitudes are formed primarily through textbooks  
(B) counter the claim that children are able to see through stereotypes in textbooks  
(C) suggest that younger children tend to interpret the messages in textbooks more literally than do older children  
(D) demonstrate that textbooks carry political messages meant to influence their readers  
(E) prove that textbooks are not biased in terms of their political presentations
4. The author's attitude toward the content of the history textbooks discussed in the passage is best described as one of  
(A) indifference  
(B) hesitance  
(C) neutrality  
(D) amusement  
(E) disapproval
5. It can be inferred from the passage that the **researchers** mentioned in line 19 would be most likely to agree with which of the following statements?  
(A) Students form attitudes about cultures other than their own primarily inside the school environment.  
(B) For the most part, seniors in high school know that textbooks can be biased.  
(C) Textbooks play a crucial role in shaping the attitudes and beliefs of students.  
(D) Elementary school students are as likely to recognize biases in textbooks as are high school students.  
(E) Students are less likely to give credence to history textbooks than to mathematics textbooks.
6. The author implies that which of the following will occur if textbooks are not carefully reviewed?  
(A) Children will remain ignorant of the European settlers' conquest of the New World.  
(B) Children will lose their ability to recognize biases in textbooks.  
(C) Children will form negative stereotypes of Native Americans.  
(D) Children will develop an understanding of ethnocentrism.  
(E) Children will stop taking textbooks seriously.

### Passage 31

Most pre-1990 literature on businesses' use of information technology (IT)—defined as any form of computer-based information system—focused on spectacular IT successes and reflected a general optimism concerning IT's potential as a resource for creating competitive advantage. But toward the end of the 1980's, some economists spoke of a "productivity paradox": despite huge IT investments, most notably in the service sectors, productivity stagnated. In the retail industry, for example, in which IT had been widely adopted during the 1980's, productivity (average output per hour) rose at an average annual rate of 1.1 percent between 1973 and 1989, compared with 2.4 percent in the preceding 25-year period. Proponents of IT argued that it takes both time and a critical mass of investment for IT to yield benefits, and some suggested that growth figures for the 1990's proved these benefits were finally being realized. They also argued that measures of productivity ignore what would have happened without investments in IT—productivity gains might have been even lower. There were even claims that IT had improved the performance of the service sector significantly, although macroeconomic measures of productivity did not reflect the improvement.

But some observers questioned why, if IT had conferred economic value, it did not produce direct competitive advantages for individual firms. Resource-based theory offers an answer, asserting that, in general, firms gain competitive advantages by accumulating resources that are economically valuable, relatively scarce, and not easily replicated. According to a recent study of retail firms, which confirmed that IT has become pervasive and relatively easy to acquire, IT by itself appeared to have conferred little advantage. In fact, though little evidence of any direct effect was found, the frequent negative correlations between IT and performance suggested that IT had probably weakened some firms' competitive positions. However, firms' human resources, in and of themselves, did explain improved performance, and some firms gained IT-related advantages by merging IT with complementary resources, particularly human resources. The findings support the notion, founded in resource-based theory, that competitive advantages do not arise from easily replicated resources, no matter how impressive or economically valuable they may be, but from complex, intangible resources.

1. The passage is primarily concerned with
  - (A) describing a resource and indicating various methods used to study it
  - (B) presenting a theory and offering an opposing point of view
  - (C) providing an explanation for unexpected findings
  - (D) demonstrating why a particular theory is unfounded
  - (E) resolving a disagreement regarding the uses of a technology
2. The passage suggests that proponents of resource-based theory would be likely to explain IT's inability to produce direct competitive advantages for individual firms by pointing out that
  - (A) IT is not a resource that is difficult to obtain
  - (B) IT is not an economically valuable resource
  - (C) IT is a complex, intangible resource
  - (D) economic progress has resulted from IT only in the service sector
  - (E) changes brought about by IT cannot be detected by macroeconomic measures
3. The author of the passage discusses productivity in the retail industry in the first paragraph primarily in order to
  - (A) suggest a way in which IT can be used to create a competitive advantage
  - (B) provide an illustration of the "productivity paradox"
  - (C) emphasize the practical value of the introduction of IT
  - (D) cite an industry in which productivity did not stagnate during the 1980's
  - (E) counter the argument that IT could potentially create competitive advantage
4. According to the passage, most pre-1990 literature on businesses' use of IT included which of the following?
  - (A) Recommendations regarding effective ways to use IT to gain competitive advantage
  - (B) Explanations of the advantages and disadvantages of adopting IT
  - (C) Information about ways in which IT combined with human resources could be used to increase competitive advantage
  - (D) A warning regarding the negative effect on competitive advantage that would occur if IT were not adopted
  - (E) A belief in the likelihood of increased competitive advantage for firms using IT

## Passage 32

While the most abundant and dominant species within a particular ecosystem is often crucial in perpetuating the ecosystem, a “keystone” species, here defined as one whose effects are much larger than would be predicted from its abundance, can also play a vital role. But because complex species interactions may be involved, identifying a keystone species by removing the species and observing changes in the ecosystem is problematic. It might seem that certain traits would clearly define a species as a keystone species; for example, *Pisaster ochraceus* is often a keystone predator because it consumes and suppresses mussel populations, which in the absence of this starfish can be a dominant species. But such predation on a dominant or potentially dominant species occurs in systems that do as well as in systems that do not have species that play keystone roles. Moreover, whereas *P. ochraceus* occupies an unambiguous keystone role on wave-exposed rocky headlands, in more wave-sheltered habitats the impact of *P. ochraceus* predation is weak or nonexistent, and at certain sites sand burial is responsible for eliminating mussels. Keystone status appears to depend on context, whether of particular geography or of such factors as community diversity (for example, a reduction in species diversity may thrust more of the remaining species into keystone roles) and length of species interaction (since newly arrived species in particular may dramatically affect ecosystems).

1. The passage mentions which of the following as a factor that affects the role of *P. ochraceus* as a keystone species within different habitats?

- (A) The degree to which the habitat is sheltered from waves
- (B) The degree to which other animals within a habitat prey on mussels
- (C) The fact that mussel populations are often not dominant within some habitats occupied by *P. ochraceus*
- (D) The size of the *P. ochraceus* population within the habitat
- (E) The fact that there is great species diversity within some habitats occupied by *P. ochraceus*

2. Which of the following hypothetical experiments most clearly exemplifies the method of identifying species, roles that the author considers problematic?

- (A) A population of seals in an Arctic habitat is counted in order to determine whether it is the dominant species in that ecosystem,
- (B) A species of fish that is a keystone species in one

marine ecosystem is introduced into another marine ecosystem to see whether the species will come to occupy a keystone role.

- (C) In order to determine whether a species of monkey is a keystone species within a particular ecosystem, the monkeys are removed from that ecosystem and the ecosystem is then studied.
- (D) Different mountain ecosystems are compared to determine how geography affects a particular species, ability to dominate its ecosystem.
- (E) In a grassland experiencing a changing climate, patterns of species extinction are traced in order to evaluate the effect of climate changes on keystone species in that grassland.

3. Which of the following, if true, would most clearly support the argument about keystone status advanced in the last sentence of the passage?

- (A) A species of bat is primarily responsible for keeping insect populations within an ecosystem low, and the size of the insect population in turn affects bird species within that ecosystem.
- (B) A species of iguana occupies a keystone role on certain tropical islands, but does not play that role on adjacent tropical islands that are inhabited by a greater number of animal species.
- (C) Close observation of a savannah ecosystem reveals that more species occupy keystone roles within that ecosystem than biologists had previously believed.
- (D) As a keystone species of bee becomes more abundant it has a larger effect on the ecosystem it inhabits.
- (E) A species of moth that occupies a keystone role in a prairie habitat develops coloration patterns that camouflage it from potential predators.

4. The passage suggests which of the following about the identification of a species as a keystone species?

- (A) Such an identification depends primarily on the species' relationship to the dominant species.
- (B) Such an identification can best be made by removing the species from a particular ecosystem and observing changes that occur in the ecosystem.
- (C) Such an identification is likely to be less reliable as an ecosystem becomes less diverse.
- (D) Such an identification seems to depend on various factors within the ecosystem.
- (E) Such an identification can best be made by observing predation behavior.

### Passage 33

Until recently, zoologists believed that all species of phocids (true seals), a pinniped family, use a different maternal strategy than do otariids (fur seals and sea lions), another pinniped family. Mother otariids use a foraging strategy. They acquire moderate energy stores in the form of blubber before arriving at breeding sites and then fast for 5 to 11 days after birth. Throughout the rest of the lactation (milk production) period, which lasts from 4 months to 3 years depending on the species, mother otariids alternately forage at sea, where they replenish their fat stores, and nurse their young at breeding sites. Zoologists had assumed that females of all phocids species, by contrast, use a fasting strategy in which mother phocids, having accumulated large energy stores before they arrive at breeding sites, fast throughout the entire lactation period, which lasts from 4 to 50 days depending on the species. However, recent studies on harbor seals, a phocids species, found that lactating females commenced foraging approximately 6 days after giving birth and on average made 7 foraging trips during the remainder of their 24-day lactation period.

The maternal strategy evolved by harbor seals may have to do with their small size and the large proportion of their fat stores depleted in lactation. Harbor seals are small compared with other phocids species such as grey seals, all of which are known to fast for the entire lactation period. Studies show that mother seals of these species use respectively 84 percent, 58 percent, and 33 percent of their fat stores during lactation. By comparison, harbor seals use 80 percent of their fat stores in just the first 19 days of lactation, even though they occasionally feed during this period. Since such a large proportion of their fat stores is exhausted despite feeding, mother harbor seals clearly cannot support all of lactation using only energy stored before giving birth. Though smaller than many other phocids, harbor seals are similar in size to most otariids. In addition, there is already some evidence suggesting that the ringed seal, a phocids species that is similar in size to the harbor seal, may also use a maternal foraging strategy.

1. It can be inferred from the passage that the females of all phocids species differ from the females of all otariid species in that the female phocids

- A. have shorter lactation periods
- B. consume more food during lactation
- C. consume a higher proportion of fat stores
- D. forage for food occasionally during their lactation periods
- E. deplete a smaller percentage of their fat stores during their lactation periods

2. The primary purpose of the passage is to

- A. present evidence that several phocids species use the maternal fasting strategy
- B. explain why the maternal strategy typically used by phocids is different from the maternal strategy used by otariids
- C. argue that zoologists' current understanding of harbor seals' maternal strategy is incorrect
- D. describe an unexpected behavior observed in harbor seals and propose an explanation that may account for the behavior
- E. describe evidence concerning the maternal strategy of the harbor seal and suggest that the harbor seal belongs to the otariid rather than to the phocids family

3. According to the passage, until recently zoologists believed which of the following about all phocids mothers?

- A. Their fasting periods after giving birth were typically shorter than those of otariids.
- B. Their lactation periods were generally as long as those of comparably sized otariids.
- C. They acquired only moderate energy stores in the form of blubber before arriving at breeding sites.
- D. They depleted less than a third of their stored body fat during lactation.
- E. They replenished their fat stores only after their lactation period ended.

4. The author of the passage mentions ringed seals most probably in order to

- A. provide an example of a phocid species that fasts throughout its entire lactation period
- B. provide an example of a phocid species whose maternal strategy is typical of phocid species
- C. provide an example of a phocid species that may deplete an even higher proportion of its fat stores during lactation than harbor seals do
- D. support the assertion that harbor seals are smaller than many other phocids
- E. support the assertion that harbor seals' maternal strategy may be related to their small size.

### Passage 34

The general density dependence model can be applied to explain the founding of specialist firms (those attempting to serve a narrow target market). According to this model, specialist foundings hinge on the interplay between legitimation and competitive forces, both of which are functions of the density (total number) of firms in a particular specialist population. Legitimation occurs as a new type of firm moves from being viewed as unfamiliar to being viewed as a natural way to organize. At low density levels, each founding increases legitimation, reducing barriers to entry and easing subsequent foundings. Competition occurs because the resources that firms seek--customers, suppliers, and employees--are limited, but as long as density is low relative to plentiful resources, the addition of another firm has a negligible impact on the intensity of competition. At high density levels, however, competitive effects outweigh legitimation effects, discouraging foundings. The more numerous the competitors, the fiercer the competition will be and the smaller will be the incentive for new firms to enter the field.

While several studies have found a significant correspondence between the density dependence model and actual patterns of foundings, other studies have found patterns not consistent with the model. A possible explanation for this inconsistency is that legitimation and competitive forces transcend national boundaries, while studies typically restrict their analysis to the national level. Thus a national-level analysis can understate the true legitimation and competitive forces as well as the number of foundings in an industry that is internationally integrated. Many industries are or are becoming international, and since media and information easily cross national borders, so should legitimation and its effects on overseas foundings. For example, if a type of firm becomes established in the United States, that information transcends borders, reduces uncertainties, and helps foundings of that type of firm in other countries. Even within national contexts, studies have found more support for the density dependence model when they employ broader geographic units of analysis--for example, finding that the model's operation is seen more clearly at the state and national levels than at city levels.

**1. According to the passage, which of the following may account for the inconsistency between the general density dependence model and the evidence provided by certain studies of foundings?**

- (A) Such studies have overemphasized the impact of preexisting firms on the establishment of new firms.
- (B) Such studies have not focused strongly enough on the role of competition among newly established firms operating at the city and state levels.
- (C) Such studies fail to differentiate among specialist firms with regard to the degree to which they deviate from familiar forms of organization.
- (D) Such studies have not taken into account the fact that many industries are internationally integrated.
- (E) Such studies have neglected to investigate firms that attempt to serve only a narrow target market.

**2. In the second paragraph, the author is primarily concerned with**

- (A) noting various exceptions to a certain general finding
- (B) examining the impact of one type of industry on another
- (C) proposing a possible explanation for an inconsistency
- (D) providing specific examples of a particular phenomenon
- (E) defending the validity of a particular study's conclusions

**3. The passage suggests that when a population of specialist firms reaches a high density level, which of the following is likely to occur?**

- (A) Foundings will decline despite legitimation that has occurred in these industries.
- (B) Increasing competition will encourage many firms to broaden their target market.
- (C) Competition for resources will become stabilized and thus foundings will be encouraged.
- (D) Many customers will abandon their loyalty to older firms as more innovative firms enter the market.
- (E) Firms will begin to cross national borders in an attempt to gain a competitive advantage.

**4. The primary purpose of the passage is to**

- (A) question the validity of an economic model
- (B) point out some inconsistencies within an economic model
- (C) outline an economic model and suggest revisions to it
- (D) describe an economic model and provide specific examples to illustrate its use
- (E) explain why an economic model remains valid despite inconsistent research results

### Passage 35

Conventional wisdom has it that large deficits in the United States budget cause interest rates to rise. Two main arguments are given for this claim. According to the first, as the deficit increases, the government will borrow more to make up for the ensuing shortage of funds. Consequently, it is argued, if both the total supply of credit (money available for borrowing) and the amount of credit sought by nongovernment borrowers remain relatively stable, as is often supposed, then the price of credit (the interest rate) will increase. That this is so is suggested by the basic economic principle that if supplies of a commodity (here, credit) remain fixed and demand for that commodity increases, its price will also increase. The second argument supposes that the government will tend to finance its deficits by increasing the money supply with insufficient regard for whether there is enough room for economic growth to enable such an increase to occur without causing inflation. It is then argued that financiers will expect the deficit to cause inflation and will raise interest rates, anticipating that because of inflation the money they lend will be worth less when paid back.

Unfortunately for the first argument, it is unreasonable to assume that nongovernment borrowing and the supply of credit will remain relatively stable. Nongovernment borrowing sometimes decreases. When it does, increased government borrowing will not necessarily push up the total demand for credit. Alternatively, when credit availability increases, for example through greater foreign lending to the United States, then interest rates need not rise, even if both private and government borrowing increase.

The second argument is also problematic. Financing the deficit by increasing the money supply should cause inflation only when there is not enough room for economic growth. Currently, there is no reason to expect deficits to cause inflation. However, since many financiers believe that deficits ordinarily create inflation, then **admittedly** they will be inclined to raise interest rates to offset mistakenly anticipated inflation. This effect, however, is due to ignorance, not to the deficit itself, and could be lessened by educating financiers on this issue.

1. Which of the following best summarizes the central idea of the passage?

- (A) A decrease in nongovernment borrowing or an increase in the availability of credit can eliminate or lessen the ill effects of increased borrowing by the government.
- (B) Educating financiers about the true relationship between large federal deficits and high interest rates will make financiers less prone to raise interest rates in response to deficits.
- (C) There is little support for the widely held belief that large federal deficits will create higher interest rates, as the main

arguments given to defend this claim are flawed.

(D) When the government borrows money, demand for credit increases, typically creating higher interest rates unless special conditions such as decreased consumer spending arise.

(E) Given that most financiers believe in a cause-and-effect relationship between large deficits and high interest rates, it should be expected that financiers will raise interest rates.

2. It can be inferred from the passage that proponents of the second argument would most likely agree with which of the following statements?

- (A) The United States government does not usually care whether or not inflation increases.
- (B) People in the United States government generally know very little about economics.
- (C) The United States government is sometimes careless in formulating its economic policies.
- (D) The United States government sometimes relies too much on the easy availability of foreign credit.
- (E) The United States government increases the money supply whenever there is enough room for growth to support the increase

3. Which of the following claims concerning the United States government's financing of the deficit does the author make in discussing the second argument?

- (A) The government will decrease the money supply in times when the government does not have a deficit to finance.
- (B) The government finances its deficits by increasing the money supply whenever the economy is expanding.
- (C) As long as the government finances the deficit by borrowing, nongovernment borrowers will pay higher interest rates.
- (D) The only way for the government to finance its deficits is to increase the money supply without regard for whether such an increase would cause inflation.
- (E) Inflation should be caused when the government finances the deficit by increasing the money supply only if there is not enough room for economic growth to support the increase.

4. The author uses the term "**admittedly**" (see highlighted text) in order to indicate that

- (A) the second argument has some truth to it, though not for the reasons usually supposed
- (B) the author has not been successful in attempting to point out inadequacies in the two arguments
- (C) the thesis that large deficits directly cause interest rates to rise has strong support after all
- (D) financiers should admit that they were wrong in thinking that large deficits will cause higher inflation rates
- (E) financiers generally do not think that the author's criticisms of the second argument are worthy of consideration

### Passage 36

In recent years, Western business managers have been heeding the exhortations of business journalists and academics to move their companies toward long term, collaborative “strategic partnerships” with their external business partners (e.g., suppliers). The experts’ advice comes as a natural reaction to numerous studies conducted during the past decade that compared Japanese production and supply practices with those of the rest of the world. The link between the success of a certain well-known Japanese automaker and its effective management of its suppliers, for example, has led to an unquestioning belief within Western management circles in the value of strategic partnerships. Indeed, in the automobile sector all three United States manufacturers and most of their European competitors have launched programs to reduce their total number of suppliers and move toward having strategic partnerships with a few.

However, new research concerning supplier relationships in various industries demonstrates that the widespread assumption of Western managers and business consultants that Japanese firms manage their suppliers primarily through strategic partnerships is unjustified. Not only do Japanese firms appear to conduct a far smaller proportion of their business through strategic partnerships than is commonly believed, but they also make extensive use of “market-exchange” relationships, in which either party can turn to the marketplace and shift to different business partners at will, a practice usually associated with Western manufacturers

#### 1. The passage is primarily concerned with

- A. examining economic factors that may have contributed to the success of certain Japanese companies
- B. discussing the relative merits of strategic partnerships as compared with those of market-exchange relationship
- C. challenging the validity of a widely held assumption about how Japanese firms operate
- D. explaining why Western companies have been slow to adopt a particular practice favored by Japanese companies
- E. pointing out certain differences between Japanese and Western supplier relationships

#### 2. According to the passage, the advice referred to in the highlighted text was a response to which of the following?

- A. A recent decrease in the number of available suppliers within the United States automobile industry
- B. A debate within Western management circles during the

- past decade regarding the value of strategic partnerships
- C. The success of certain European automobile manufacturers that have adopted strategic partnerships
- D. An increase in demand over the past decade for automobiles made by Western manufacturers
- E. Research comparing Japanese business practices with those of other nations

#### 3. The author mentions “the success of a certain well known Japanese automaker” most probably in order to

- A. demonstrate some of the possible reasons for the success of a certain business practice
- B. cite a specific case that has convinced Western business experts of the value of a certain business practice
- C. describe specific steps taken by Western automakers that have enabled them to compete more successfully in a global market
- D. introduce a paradox about the effect of a certain business practice in Japan
- E. indicate the need for Western managers to change their relationships with their external business partners

#### 4. Which of the following is most clearly an example of the practice referred to in the last sentence of the passage?

- A. A department store chain that employs a single buyer to procure all the small appliances to be sold in its stores
- B. An automobile manufacturer that has used the same supplier of a particular axle component for several years in a row
- C. A hospital that contracts only with union personnel to staff its nonmedical positions
- D. A municipal government that decides to cancel its contract with a waste disposal company and instead hire its own staff to perform that function
- E. A corporation that changes the food-service supplier for its corporate headquarters several times over a five-year period as part of a cost-cutting campaign.

### Passage 37

Years before the advent of plate tectonics—the widely accepted theory, developed in the mid-1960's, the holds that the major features of Earth's surface are created by the horizontal motions of Earth's outer shell, or lithosphere—a similar theory was rejected by the geological community. In 1912, Alfred Wegener proposed, in a widely debated theory that came to be called continental drift, that Earth's continents were mobile. To most geologists today, Wegener's *The Origin of Continents and Oceans* appears an impressive and prescient document, containing several of the **essential presumptions** underlying plate tectonics theory: the horizontal mobility of pieces of Earth's crust; the essential difference between oceanic and continental crust; and a causal connection between horizontal displacements and the formation of mountain chains. Yet despite the **considerable overlap** between Wegener's concepts and the later widely embraced plate tectonics theory, and despite the fact that continental drift theory presented a possible solution to the problem of the origin of mountains at a time when existing explanations were seriously in doubt, in its day Wegener's theory was rejected by the vast majority of geologists.

Most geologists and many historians today believe that Wegener's theory was rejected because of its lack of an adequate mechanical basis. Stephen Jay Gould, for example, argues that continental drift theory was rejected because it did not explain how continents could move through an apparently solid oceanic floor. However, as **Anthony Hallam** has pointed out, many scientific phenomena, such as the ice ages, have been accepted before they could be fully explained. The most likely cause for the rejection of continental drift—a cause that has been largely ignored because we consider Wegener's theory to have been validated by the theory of plate tectonics—is the nature of the evidence that was put forward to support it. Most of Wegener's evidence consisted of homologies—similarities of patterns and forms based on direct observations of rocks in the field, supported by the use of hammers, hand lenses, and field notebooks. In contrast, the data supporting plate tectonics were impressively geophysical—instrumental determinations of the physical properties of Earth garnered through the use of seismographs, magnetometers, and computers.

**1:** The author cites Hallam on the ice ages primarily in order to

- (A) provide an example of a geologic phenomenon whose precise causes are not fully understood by geologists today
- (B) criticize the geological community for an apparent lack of consistency in its responses to new theories
- (C) offer evidence held to undermine a common view of why Wegener's theory was not accepted in its day
- (D) give an example of a modern scientist who believes that Wegener's theory was rejected because it failed to adequately explain the mechanical basis of continental drift

(E) support Gould's rationale for why Wegener's theory was rejected by most geologists in the early twentieth century

**2: The** author of the passage refers to the "considerable overlap" between continental drift theory and plate tectonics theory most probably in order to

- (A) suggest that plate tectonics theory is derived from Wegener's work
- (B) introduce a discussion comparing the elements of the two theories
- (C) examine the question of whether continental drift theory was innovative in its time
- (D) provide a reason why it might seem surprising that continental drift theory was not more widely embraced by geologists
- (E) cite an explanation that has been frequently offered for Wegener's high standing among geologists today

**3:** The author of the passage suggests that the most likely explanation for the geological community's response to continental drift theory in its day was that the theory

- (A) was in conflict with certain aspects of plate tectonics theory
- (B) failed to account for how mountains were formed
- (C) did not adequately explain how continents moved through the ocean floor
- (D) was contradicted by the geophysical data of the time
- (E) was based on a kind of evidence that was considered insufficiently convincing

**4: It** can be inferred from the passage that geologists today would be most likely to agree with which of the following statements about Wegener's *The Origin of Continents and Oceans*?

- (A) It was a worthy scientific effort that was ahead of its time.
- (B) It was based on evidence that was later disproved.
- (C) It was directly responsible for the acceptance of the theory of plate tectonics.
- (D) It has been disproved by continental drift theory.
- (E) It misrepresented how horizontal displacements cause the formation of mountain chains.

**5: The** author of the passage discusses the "essential presumptions" (see highlighted text) of *The Origin of Continents and Oceans* most in order to

- (A) indicate features of Wegener's theory that caused it to be doubted in its day
- (B) show why Wegener's theory is now regarded as prescient
- (C) indicate differences between plate tectonics and the theory of continental drift
- (D) cite features of the theory of continental drift for which no evidence was available in Wegener's day
- (E) point out aspects of Wegener's theory that were accepted well before the advent of plate tectonics

### Passage 38

Comparable worth, as a standard applied to eliminate inequities in pay, insists that the values of certain tasks performed in dissimilar jobs can be compared. In the last decade, this approach has become a critical social policy issue, as large numbers of private-sector firms and industries as well as federal, state, and local governmental entities have adopted comparable worth policies or begun to consider doing so.

This widespread institutional awareness of comparable worth indicates increased public awareness that pay inequities—that is, situations in which pay is not "fair" because it does not reflect the true value of a job—exist in the labor market. However, the question still remains: have the gains already made in pay equity under comparable worth principles been of a precedent-setting nature or are they mostly transitory, a function of concessions made by employers to misled female employees into believing that they have made long-term pay equity gains?

Comparable worth pay adjustments are indeed precedent-setting. Because of the principles driving them, **other mandates** that can be applied to reduce or eliminate unjustified pay gaps between male and female workers have not remedied perceived pay inequities satisfactorily for the litigants in cases in which men and women hold different jobs. But whenever comparable worth principles are applied to pay schedules, perceived unjustified pay differences are eliminated. In this sense then, comparable worth is more comprehensive than other mandates, such as the Equal Pay Act of 1963 and Title VII of the Civil Rights Act of 1964. Neither compares tasks in dissimilar jobs (that is, jobs across occupational categories) in an effort to determine whether or not what is necessary to perform these tasks—know-how, problem-solving, and accountability—can be quantified in terms of its dollar value to the employer. Comparable worth, on the other hand, takes as its premise that certain tasks in dissimilar jobs may require a similar amount of training, effort, and skill; may carry similar responsibility; may be carried on in an environment having a similar impact upon the worker; and may have a similar dollar value to the employer.

#### 1. According to the passage, which of the following is true of comparable worth as a policy?

- (A) Comparable worth policy decisions in pay-inequity cases have often failed to satisfy the complaints
- (B) Comparable worth policies have been applied to both public-sector and private-sector employee pay schedules
- (C) Comparable worth as a policy has come to be widely criticized in the past decade
- (D) Many employers have considered comparable worth as a policy but very few have actually adopted it
- (E) Early implementations of comparable worth policies resulted in only transitory gains in pay equity

#### 2. Which of the following most accurately states the central purpose of the passage?

- (A) To criticize the implementation of a new procedure
- (B) To assess the significance of a change in policy
- (C) To illustrate how a new standard alters procedures

- (D) To explain how a new policy is applied in specific cases
- (E) To summarize the changes made to date as a result of social policy

#### 3. According to the passage, comparable worth principles are different in which of the following ways from other mandates intended to reduce or eliminate pay inequities:

- (A) Comparable worth principles address changes in the pay schedules of male as well as female workers
- (B) Comparable worth principles can be applied to employees in both the public and the private sector
- (C) Comparable worth principles emphasize the training and skill of workers
- (D) Comparable worth principles require changes in the employer's resource allocation
- (E) Comparable worth principles can be used to quantify the value of elements of dissimilar jobs

#### 4. Which of the following best describes an application of the principles of comparable worth as they are described in the passage?

- (A) The current pay, rates of increase, and rates of promotion for female mechanics are compared with those of male mechanics.
- (B) The training, skills, and job experience of computer programmers in one division of a corporation are compared to those of programmers making more money in another division.
- (C) The number of women holding top executive positions in a corporation is compared to the number of women available for promotion to those positions, and both tallies are matched to the tallies for men in the same corporation.
- (D) The skills, training, and job responsibilities of the clerks in the township tax assessor's office are compared to those of the much better-paid township engineers.
- (E) The working conditions of female workers in a hazardous-materials environment are reviewed and their pay schedules compared to those of all workers in similar environments across the nation.

#### 5. It can be inferred from the passage that application of "other mandates" (see highlighted text) would be unlikely to result in an outcome satisfactory to the female employees in which of the following situations?

- I. Males employed as long-distance truck drivers for a furniture company make \$3.50 more per hour than do females with comparable job experience employed in the same capacity.
- II. Women working in the office of a cement company contend that their jobs are as demanding and valuable as those of the men working in the cement factory, but the women are paid much less per hour.
- III. A law firm employs both male and female paralegals with the same educational and career backgrounds, but the starting salary for male paralegals is \$5,000 more than for female paralegals.

- (A) I only
- (B) II only
- (C) III only
- (D) I and II only
- (E) I and III only

### Passage 39

The **idea** that equipping homes with electrical appliances and other “modern” household technologies would eliminate drudgery, save labor time, and increase leisure for women who were full-time home workers remained largely unchallenged until the women’s movement of the 1970’s spawned the groundbreaking and influential works of sociologist Joann Vanek and historian Ruth Cowan. Vanek analyzed 40 years of time-use surveys conducted by home economists to argue that electrical appliances and other modern household technologies reduced the effort required to perform specific tasks, but ownership of these appliances did not correlate with less time spent on housework by full-time home workers. **In fact, time spent by these workers remained remarkably constant—at about 52 to 54 hours per week—from the 1920’s to the 1960’s, a period of significant change in household technology.** In surveying two centuries of household technology in the United States, Cowan argued that the “industrialization” of the home often resulted in more work for full-time home workers because the use of such devices as coal stoves, water pumps, and vacuum cleaners tended to reduce the workload of married-women’s helpers (husbands, sons, daughters, and servants) while promoting a more rigorous standard of housework. The full-time home worker’s duties also shifted to include more household management, child care, and the post-Second World War phenomenon of being “Mom’s taxi.”

1. According to the passage, which of the following is true about the **idea** mentioned in the highlighted text?

- (A) It has been undermined by data found in time-use surveys conducted by home economists.
- (B) It was based on a definition of housework that was explicitly rejected by Vanek and Cowan.
- (C) It is more valid for the time period studied by Cowan than for the time period studied by Vanek.
- (D) It is based on an underestimation of the time that married women spent on housework prior to the industrialization of the household.
- (E) It inaccurately suggested that new household technologies would reduce the effort required to perform housework.

2. The passage is primarily concerned with

- (A) analyzing a debate between two scholars
- (B) challenging the evidence on which a new theory is based
- (C) describing how certain scholars’ work countered a prevailing view

- (D) presenting the research used to support a traditional theory
- (E) evaluating the methodology used to study a particular issue

3. The passage suggests that Vanek and Cowan would agree that modernizing household technology did not

- (A) reduce the workload of servants and other household helpers
- (B) raise the standard of housework that women who were full-time home workers set for themselves
- (C) decrease the effort required to perform household tasks
- (D) reduce the time spent on housework by women who were full-time home workers
- (E) result in a savings of money used for household maintenance

4. According to the passage, Cowan asserts which of the following about married women’s helpers over the past two centuries ?

- A) they were encouraged to participate more actively in the work of the household by the advent of modern conveniences.
- B) the industrialization of the home affected the time spent on housework in the same way.
- C) they spent more time on household tasks because of the more rigorous standards of housework promoted by the industrialization of the home.
- D) they had less leisure time after the industrialization of the home than has been assumed by most historians.
- E) they spent less time on housework with the advent of such devices as the coal stove and the water pump.

5. Which of the following best describes the function of the highlighted sentence : **In fact, time spent by these workers .....household technology.** ?

- A. It offers an alternative interpretation of a phenomenon described in the previous sentence.
- B. It provides the specific evidence on which an argument described in the previous sentence is based.
- C. It shifts the focus of the argument developed earlier in the passage.
- D. It introduces evidence that has not been taken into account by Vanek and Cowan.
- E. It introduces a topic for discussion that will be developed in the rest of the passage.

## Passage 40

Many people believe that because wages are lower in developing countries than in developed countries, competition from developing countries in goods traded internationally will soon eliminate large numbers of jobs in developed countries. Currently, developed countries' advanced technology results in higher productivity, which accounts for their higher wages. Advanced technology is being transferred ever more speedily across borders, but even with the latest technology, productivity and wages in developing countries will remain lower than in developed countries for many years because developed countries have better infrastructure and better-educated workers. When productivity in a developing country does catch up, experience suggests that wages there will rise. Some individual firms in developing countries have raised their productivity but kept their wages (which are influenced by average productivity in the country's economy) low. However, in a developing country's economy as a whole, productivity improvements in goods traded internationally are likely to cause an increase in wages. Furthermore, if wages are not allowed to rise, the value of the country's currency will appreciate, which (from the developed countries' point of view) is the equivalent of increased wages in the developing country. And although in the past a few countries have deliberately kept their currencies undervalued, that is now much harder to do in a world where capital moves more freely.

1. The passage suggests that which of the following would best explain why, in a developing country, some firms that have raised their productivity continue to pay low wages?

- (A) Wages are influenced by the extent to which productivity increases are based on the latest technology.
- (B) Wages are influenced by the extent to which labor unions have organized the country's workers.
- (C) Wages are not determined by productivity improvements in goods traded internationally.
- (D) The average productivity of the workers in the country has not risen.
- (E) The education level of the workers in the country determines wages.

2. The primary purpose of the passage is to

- (A) identify the origin of a common misconception
- (B) discuss the implications of a generally accepted principle
- (C) present information relevant in evaluating a commonly held belief
- (D) defend a controversial assertion against a variety of counterarguments
- (E) explain under what circumstances a well-known phenomenon occurs

3. The passage suggests that if the movement of capital in the world were restricted, which of the following would be likely?

- (A) Advanced technology could move more quickly from developed countries to developing countries.
- (B) Developed countries could compete more effectively for jobs with developing countries.
- (C) A country's average wages could increase without significantly increasing the sophistication of its technology or the value of its currency.
- (D) A country's productivity could increase without significantly increasing the value of its currency.
- (E) Workers could obtain higher wages by increasing their productivity.

## Passage 41

A small number of the forest species of lepidoptera (moths and butterflies, which exist as caterpillars during most of their life cycle) exhibit regularly recurring patterns of population growth and decline—such fluctuations in population are known as population cycles. Although many different variables influence population levels, a regular pattern such as a population cycle seems to imply a dominant, driving force. Identification of that driving force, however, has proved surprisingly elusive despite considerable research. The common approach of studying causes of population cycles by measuring the mortality caused by different agents, such as predatory birds or parasites, has been unproductive in the case of lepidoptera. Moreover, population ecologists' attempts to alter cycles by changing the caterpillars' habitat and by reducing caterpillar populations have not succeeded. **In short, the evidence implies that these insect populations, if not self-regulating, may at least be regulated by an agent more intimately connected with the insect than are predatory birds or parasites.**

Recent work suggests that this agent may be a virus. For many years, viral disease had been reported in declining populations of caterpillars, but population ecologists had usually considered viral disease to have contributed to the decline once it was underway rather than to have initiated it. The recent work has been made possible by new techniques of molecular biology that allow viral DNA to be detected at low concentrations in the environment. Nuclear polyhedrosis viruses are hypothesized to be the driving force behind population cycles in lepidoptera in part because the viruses themselves follow an infectious cycle in which, if protected from direct sunlight, they may remain virulent for many years in the environment, embedded in durable crystals of polyhedrin protein. Once ingested by a caterpillar, the crystals dissolve, releasing the virus to infect the insect's cells. Late in the course of the infection, millions of new virus particles are formed and enclosed in polyhedrin crystals. These crystals reenter the environment after the insect dies and decomposes, thus becoming available to infect other caterpillars.

One of the attractions of this hypothesis is its broad applicability. Remarkably, despite significant differences in habitat and behavior, many species of lepidoptera have population cycles of similar length, between eight and eleven years. Nuclear polyhedrosis viral infection is one factor these disparate species share.

**1. It can be inferred from the passage that the mortality caused by agents such as predatory birds or parasites was measured in an attempt to**

**(A) develop an explanation for the existence of lepidoptera population cycles**

(B) identify behavioral factors in lepidoptera that affect survival rates

(C) identify possible methods for controlling Lepidoptera population growth

(D) provide evidence that lepidoptera populations are self-regulating

(E) determine the life stages of lepidoptera at which mortality rates are highest

**2. The primary purpose of the passage is to**

(A) describe the development of new techniques that may help to determine the driving force behind population cycles in lepidoptera

(B) present evidence that refutes a particular theory about the driving force behind population cycles in lepidoptera

(C) present a hypothesis about the driving force behind population cycles in lepidoptera

(D) describe the fluctuating patterns of population cycles in Lepidoptera

(E) question the idea that a single driving force is behind population cycles in Lepidoptera

**3. According to the passage, before the discovery of new techniques for detecting viral DNA, population ecologists believed that viral diseases--**

(A) were not widely prevalent among insect populations generally

(B) affected only the caterpillar life stage of lepidoptera

(C) were the driving force behind Lepidoptera population cycles

(D) attacked already declining caterpillar populations

(E) infected birds and parasites that prey on various species of Lepidoptera

**4. According to the passage, nuclear polyhedrosis viruses can remain virulent in the environment only when**

(A) the polyhedrin protein crystals dissolve

(B) caterpillar population are in decline

(C) they are present in large numbers

(D) their concentration in a particular area remains low

(E) they are sheltered from direct sunlight

**5. It can be inferred from the passage that while inside its polyhedrin protein crystals, the nuclear polyhedrosis virus**

(A) is exposed to direct sunlight

(B) is attractive to predators

(C) cannot infect caterpillars' cells

(D) cannot be ingested by caterpillars

(E) cannot be detected by new techniques of molecular biology

**6. Which of the following, if true, would most weaken the author's conclusion in lines 18-22?**

(A) New research reveals that the number of species of birds and parasites that prey on lepidoptera has dropped significantly in recent years.

(B) New experiments in which the habitats of lepidoptera are altered in previously untried ways result in the shortening of lepidoptera population cycles.

(C) Recent experiments have revealed that the nuclear polyhedrosis virus is present in a number of predators and parasites of lepidoptera.

(D) Differences among the habitats of lepidoptera species make it difficult to assess the effects of weather on lepidoptera population cycles.

(E) Viral disease is typically observed in a large proportion of the lepidoptera population.

## Passage 42

Many managers are influenced by dangerous myths about pay that lead to counterproductive decisions about how their companies compensate employees. One such myth is that labor rates, the rate per hour paid to workers, are identical with labor costs, the money spent on labor in relation to the productivity of the labor force. This myth leads to the assumption that a company can simply lower its labor costs by cutting wages. But labor costs and labor rates are not in fact the same: one company could pay its workers considerably more than another and yet have lower labor costs if that company's productivity were higher due to the talent of its workforce, the efficiency of its work processes, or other factors. The confusion of costs with rates persists partly because labor rates are a convenient target for managers who want to make an impact on their company's budgets. Because labor rates are highly visible, managers can easily compare their company's rates with those of competitors. Furthermore, labor rates often appear to be a company's most malleable financial variable: cutting wages appears an easier way to control costs than such options as reconfiguring work processes or altering product design.

The myth that labor rates and labor costs are equivalent is supported by business journalists, who frequently confound the two. For example, prominent business journals often remark on the "high" cost of German labor, citing as evidence the average amount paid to German workers. The myth is also perpetuated by the compensation-consulting industry, which has its own incentives to keep such myths alive. First, although some of these consulting firms have recently broadened their practices beyond the area of compensation, their mainstay continues to be advising companies on changing their compensation practices. Suggesting that a company's performance can be improved in some other way than by altering its pay system may be empirically correct but contrary to the consultants' interests. Furthermore, changes to the compensation system may appear to be simpler to implement than changes to other aspects of an organization, so managers are more likely to find such advice from consultants palatable. Finally, to the extent that changes in compensation create new problems, the consultants will continue to have work solving the problems that result from their advice.

### 1. The passage suggests that the "myth" mentioned in line 5 persists partly because

- A. managers find it easier to compare their companies' labor rates with those of competitors than to compare labor costs
- B. managers tend to assume that labor rates affect their companies' budgets less than they actually do
- C. managers tend to believe that labor rates can have an impact on the efficiency of their companies' work processes
- D. the average amount paid to workers differs significantly from one country to another
- E. many companies fail to rely on compensation consultants when making decisions about labor rates

### 2. The author of the passage mentions business journals (line 39) primarily in order to

- A. demonstrate how a particular kind of evidence can be used to support two different conclusions
- B. cast doubt on a particular view about the average amount paid to German workers
- C. suggest that business journalists may have a vested interest in

perpetuating a particular view

D. identify one source of support for a view common among business managers

E. indicate a way in which a particular myth could be dispelled

### 3. It can be inferred from the passage that the author would be most likely to agree with which of the following statements about compensation?

- A. A company's labor costs are not affected by the efficiency of its work processes.
- B. High labor rates are not necessarily inconsistent with the goals of companies that want to reduce costs
- C. It is more difficult for managers to compare their companies' labor rates with those of competitors than to compare labor costs.
- D. A company whose labor rates are high is unlikely to have lower labor costs than other companies.
- E. Managers often use information about competitors' labor costs to calculate those companies' labor rates.

### 4. The author of the passage suggests which of the following about the advice that the consulting firms discussed in the passage customarily give to companies attempting to control costs?

- A. It often fails to bring about the intended changes in companies' compensation systems.
- B. It has highly influenced views that predominate in prominent business journals.
- C. It tends to result in decreased labor rates but increased labor costs.
- D. It leads to changes in companies' compensation practices that are less visible than changes to work processes would be.
- E. It might be different if the consulting firms were less narrowly specialized.

### 5. According to the passage, which of the following is true about changes to a company's compensation system?

- A. They are often implemented in conjunction with a company's efforts to reconfigure its work processes.
- B. They have been advocated by prominent business journals as the most direct way for a company to bring about changes in its labor costs.
- C. They are more likely to result in an increase in labor costs than they are to bring about competitive advantages for the company.
- D. They sometimes result in significant cost savings but are likely to create labor-relations problems for the company.
- E. They may seem to managers to be relatively easy to implement compared with other kinds of changes managers might consider.

### 6. The primary purpose of the passage is to

- (A) describe a common practice used by managers to control labor costs
- (B) examine the relation between labor costs and other costs incurred by businesses
- (C) explain why labor rates are a more significant factor than labor costs for most businesses
- (D) identify a common misperception held by managers and point out some of the reasons for its persistence
- (E) distinguish between a factor that companies can easily control and another that is more difficult to change

### Passage 43

Ethnohistoric documents from sixteenth-century Mexico suggesting that weaving and cooking were the most common productive activities for Aztec women may lead modern historians to underestimate the value of women's contributions to Aztec society. Since weaving and cooking occurred mostly (but not entirely) in a domestic setting, modern historians are likely to apply to the Aztec culture the modern Western distinction between "private" and "public" production. Thus, the ethnohistoric record conspires with Western culture to foster the view that women's production was not central to the demographic, economic, and political structures in sixteenth-century Mexico.

A closer examination of Aztec culture indicates that treating Aztec women's production in Mexico in such a manner would be a mistake. Even if the products of women's labor did not circulate beyond the household, such products were essential to population growth. Researchers document a tenfold increase in the population of the valley of Mexico during the previous four centuries, an increase that was crucial to the developing Aztec political economy. Population growth — which could not have occurred in the absence of successful household economy, in which women's work was essential — made possible the large-scale development of labor-intensive chinampa (ridged-field) agriculture in the southern valley of Mexico which, in turn, supported urbanization and political centralization in the Aztec capital.

But the products of women's labor did in fact circulate beyond the household. Aztec women wove cloth, and cloth circulated through the market system, the tribute system, and the redistributive economy of the palaces. Cotton mantles served as a unit of currency in the regional market system. Quantities of woven mantles, loincloths, blouses, and skirts were paid as tribute to local lords and to imperial tax stewards and were distributed to ritual and administrative personnel, craft specialists, warriors, and other faithful servants of the state. In addition, woven articles of clothing served as markers of social status and clothing fulfilled a symbolic function in political negotiation. The cloth that was the product of women's work thus was crucial as a primary means of organizing the flow of goods and services that sustained the Aztec state.

**1. The author of the passage would be most likely to agree with which of the following statements about the documents mentioned in the first sentence of the passage?**

- A. They contain misleading information about the kinds of productive activities Aztec women engaged in.
- B. They overlook certain crucial activities performed by women in Aztec society.
- C. They provide useful information about the way that Aztec society viewed women.
- D. They are of limited value because they were heavily influenced by the bias of those who recorded them.
- E. They contain information that is likely to be misinterpreted by modern-day readers.

**2. According to the passage, Aztec women's cloth production enabled Aztec society to do which of the following?**

- A Expand women's role in agriculture
- B Organize the flow of goods and services
- C Develop self-contained communities
- D Hire agricultural laborers from outside the society
- E Establish a higher standard of living than neighboring cultures

**3. Which of the following best describes the function of the third paragraph of the passage?**

- A. It attempts to reconcile conflicting views presented in the previous paragraphs.
- B. It presents evidence intended to undermine the argument presented in the second paragraph.
- C. It provides examples that support the position taken in the first sentence of the second paragraph.
- D. It describes the contents of the documents mentioned in the first paragraph.
- E. It suggests that a distinction noted in the first paragraph is valid.

**4. The passage is primarily concerned with**

- A. using modern understanding of cultural bias to challenge ethnohistoric documents
- B. evaluating competing descriptions of women's roles in Aztec society
- C. comparing the influence of gender on women's roles in Aztec society and in modern society
- D. remedying a potential misconception about the significance of women's roles in Aztec society
- E. applying new evidence in a reevaluation of ethnohistoric documents

## Passage 44

In a new book about the antipathy feeling of the early political leaders of the United States, Ralph Ketcham argues that the first six Presidents differed decisively from later Presidents because the first six held values inherited from the classical humanist tradition of eighteenth-century England. In this view, government was designed not to satisfy the private desires of the people but to make them better citizens; this tradition stressed the disinterested devotion of political leaders to the public good. Justice, wisdom, and courage were more important qualities in a leader than the ability to organize voters and win elections. Indeed, leaders were supposed to be called to office rather than to run for office. And if they took up the burdens of public office with a sense of duty, leaders also believed that such offices were naturally their due because of their social preeminence or their contributions to the country. Given this classical conception of leadership, it is not surprising that the first six Presidents condemned political parties. Parties were partial by definition, self-interested, and therefore serving something other than the transcendent public good.

Even during the first presidency (Washington's), however, the classical conception of virtuous leadership was being undermined by commercial forces that had been gathering since at least the beginning of the eighteenth century. Commerce—its profit-making, its self-interestedness, its individualism—became the enemy of these classical ideals. Although Ketcham does not picture the struggle in quite this way, he does rightly see Jackson's tenure (the seventh presidency) as the culmination of the acceptance of party, commerce, and individualism. For the Jacksonians, nonpartisanship lost its relevance, and under the direction of Van Buren, party gained a new legitimacy. The classical ideals of the first six Presidents became identified with a privileged aristocracy, an aristocracy that had to be overcome in order to allow competition between opposing political interests. Ketcham is so strongly committed to justifying the classical ideals, however, that he underestimates the advantages of their decline. For example, the classical conception of leadership was incompatible with our modern notion of the freedoms of speech and press, freedoms intimately associated with the legitimacy of opposing political parties.

### 1. The passage is primarily concerned with

- (A) describing and comparing two theories about the early history of the United States
- (B) describing and analyzing an argument about the early history of the United States
- (C) discussing new evidence that qualifies a theory about the early history of the United States
- (D) refuting a theory about political leadership in the United States
- (E) resolving an ambiguity in an argument about political leadership in the United States

### 2. According to the passage, the author and Ketcham agree on which of the following points?

- (A) The first six Presidents held the same ideas about political parties as did later Presidents in the United States.
- (B) Classical ideals supported the growth of commercial forces in the United States.
- (C) The first political parties in the United States were formed during Van Buren's term in office.
- (D) The first six Presidents placed great emphasis on individualism

and civil rights.

(E) Widespread acceptance of political parties occurred during Andrew Jackson's presidency.

### 3. It can be inferred that the author of the passage would be most likely to agree that modern views of the freedoms of speech and press are

- (A) values closely associated with the beliefs of the aristocracy of the early United States
- (B) political rights less compatible with democracy and individualism than with classical ideals
- (C) political rights uninfluenced by the formation of opposing political parties
- (D) values not inherent in the classical humanist tradition of eighteenth-century England
- (E) values whose interpretation would have been agreed on by all United States Presidents

### 4. Which of the following, if true, provides the LEAST support for the author's argument about commerce and political parties during Jackson's presidency?

- (A) Many supporters of Jackson resisted the commercialization that could result from participation in a national economy.
- (B) Protest against the corrupt and partisan nature of political parties in the United States subsided during Jackson's presidency.
- (C) During Jackson's presidency the use of money became more common than bartering of goods and services.
- (D) More northerners than southerners supported Jackson because southerners were opposed to the development of a commercial economy.
- (E) Andrew Jackson did not feel as strongly committed to the classical ideals of leadership as George Washington had felt.

### 5. The author of the passage would most likely to agree with which of following statements about Ketcham?

- (A) He overemphasizes the influence of classical ideals on the first six Presidents of the United States.
- (B) He fails to recognize that classical ideals had little influence on politics in the United States.
- (C) He does not pay adequate attention to the negative aspects of the first six Presidents' commitment to classical ideals.
- (D) He inaccurately suggests that classical ideals gave rise to our modern notion of democracy.
- (E) He underestimates the effect of ideologies other than the humanist tradition on the first six Presidents.

### 6. Which of the following best describes the attitude of the first six Presidents toward political parties as it is discussed in the passage?

- (A) Political parties were essential to the notions of democracy on which the United States government was based.
- (B) Personal character in leadership was as important as affiliation with a political party.
- (C) Political parties were one way to ensure that government could meet the needs of all citizens.
- (D) Political parties, though undesirable, were inevitable in a democratic political system.
- (E) Political parties represented opposing political interests rather than the general public good.

### Passage 45

By the sixteenth century, the Incas of South America ruled an empire that extended along the Pacific coast and Andean highlands from what is now Ecuador to central Chile. While most of the Incas were self-sufficient agriculturists, the inhabitants of the highland basins above 9,000 feet were constrained by the kinds of crops they could cultivate. Whereas 95 percent of the principal Andean food crops can be cultivated below 3,000 feet, only 20 percent reproduce readily above 9,000 feet. Given this unequal resource distribution, highland Incas needed access to the products of lower, warmer climatic zones in order to enlarge the variety and quantity of their foodstuffs. In most of the **preindustrial world**, the problem of different resource distribution was resolved by **long-distance trade networks** over which the end consumer exercised little control. Although the peoples of the Andean highlands participated in such networks, they relied primarily on the maintenance of autonomous production forces in as many ecological zones as possible. The commodities produced in these zones were extracted, processed, and transported entirely by members of a single group.

This strategy of direct access to a maximum number of ecological zones by a single group is called vertical economy. **Even today, one can see Andean communities maintaining use rights simultaneously to pasturelands above 12,000 feet, to potato fields in basins over 9,000 feet, and to plots of warm-land crops in regions below 6,000 feet.** This strategy has two principal variations. The first is "compressed verticality," in which a single village resides in a location that permits easy access to closely located ecological zones. Different crop zones or pasturelands are located within a few days walk of the parent community. Community members may reside temporarily in one of the lower zones to manage the extraction of products unavailable in the homeland. In the second variation, called the "vertical archipelago," the village exploits resources in widely dispersed locations, constituting a series of independent production "islands." In certain pre-Columbian Inca societies, groups were sent from the home territory to establish permanent satellite communities or colonies in distant tropical forests or coastal locations. There the colonists grew crops and extracted products for their own use and for transshipment back to their high-altitude compatriots. In contrast to the compressed verticality system, in this system, commodities rather than people circulated through the archipelago.

#### 1. According to the passage, which of the following is true about the **pre-industrial long distance trade networks** mentioned in line 22 ?

- (A) They were not used extensively in most of the pre-industrial world.
- (B) They were used to some extent by the people of the Andean highlands.
- (C) They were not an effective means of solving the problem of different resource distribution.
- (D) They necessitated the establishment of permanent satellite communities in widely dispersed locations.
- (E) They were useful only for the transportation of products from warm climatic zones.

#### 2. According to the passage, the inhabitants of the Andean highlands resolved the problem of unequal resource distribution primarily in which of the following ways?

- (A) Following self-sufficient agricultural practices
- (B) Increasing commodity production from the ecological zones in the

highland basins

- (C) Increasing their reliance on long-distance trade networks
- (D) Establishing satellite communities throughout the Andean highlands
- (E) Establishing production forces in ecological zones beyond their parent communities

#### 3. The passage suggests that as a way of addressing the problem of different resource distribution in the preindustrial world, the practice of vertical economy differed from the use of long-distance trade networks in that vertical economy allowed

- (A) commodities to reach the end consumer faster
- (B) a wide variety of agricultural goods to reach the end consumer
- (C) a single group to maintain control over the production process
- (D) greater access to commodities from lower, warmer climatic zones
- (E) greater use of self-sufficient agricultural techniques

#### 4. The passage suggests that for an Andean highland village attempting to resolve the problem of unequal resource distribution, the strategy known as compressed verticality would probably be inappropriate for which of the following situations?

- (A) The village's location is such that it is difficult for the village to participate in long-distance trade networks.
- (B) The village does not have the resources to establish permanent satellite communities in production zones beyond the home community.
- (C) The warm-land crop regions nearest to the village are all below 6,000 feet.
- (D) The location of the village does not provide ready access to an adequate variety of ecological zones.
- (E) The nearest crop production zones are located below the village, while the nearest pasturelands are located above the village.

#### 5. According to the passage, Inca inhabitants of the highland basins above 9,000 feet were limited by which of the following?

- (A) The inability to gain access to agricultural production zones in lower, warmer climates
- (B) The lack of nutritional variety offered by the principal Andean food crops
- (C) The lack of opportunity to participate in long-distance agricultural trade networks
- (D) The difficulty of growing an adequate variety of crops in the highland basins
- (E) The difficulty of finding community members willing to reside in agricultural zones far away from the home territory

#### 6. Which of the following best describes the function of the highlighted sentence?

- (A) It provides an example of the approach to vertical economy that is most prevalent in the Andean highlands today.
- (B) It illustrates what vertical economy entails, while indicating that the practice remains in use.
- (C) It indicates that the practice of vertical economy is restricted to certain kinds of Andean communities.
- (D) It points out the way in which the kind of vertical economy most commonly practiced today differs from that most commonly practiced in the past.
- (E) It identifies why the practice of vertical economy has been so successful for certain Andean communities.

### Passage 46

After the Second World War, unionism in the Japanese auto industry was company-based, with separate unions in each auto company. Most company unions played no independent role in bargaining shop-floor issues or pressing autoworkers' grievances. In a 1981 survey, for example, fewer than 1 percent of workers said they sought union assistance for work-related problems, while 43 percent said they turned to management instead. There was little to distinguish the two in any case: most union officers were foremen or middle-level managers, and the union's role was primarily one of passive support for company goals. Conflict occasionally disrupted this cooperative relationship—one company union's opposition to the productivity campaigns of the early 1980s has been cited as such a case. In 1986, however, a caucus led by the Foreman's Association forced the union's leadership out of office and returned the union's policy to one of passive cooperation. In the United States, the potential for such company unionism grew after 1979, but it had difficulty taking hold in the auto industry, where a single union represented workers from all companies, particularly since federal law prohibited foremen from joining or leading industrial unions.

The Japanese model was often invoked as one in which authority decentralized to the shop floor empowered production workers to make key decisions. What these claims failed to recognize was that the actual delegation of authority was to the foreman, not the workers. The foreman exercised discretion over job assignments, training, transfers, and promotions; worker initiative was limited to suggestions that fine-tuned a management-controlled production process. Rather than being proactive, Japanese workers were forced to be reactive, the range of their responsibilities being far wider than their span of control. For example, the founder of one production system, Taiichi Ohno, routinely gave department managers only 90 percent of the resources needed for production. As soon as workers could meet production goals without working overtime, 10 percent of remaining resources would be removed. Because the "OH! NO!" system continually pushed the production process to the verge of breakdown in an effort to find the minimum resource requirement, critics described it as "management by stress."

1. The passage is primarily concerned with  
(A) contrasting the role of unions in the Japanese auto industry with the role of unions in the United

States auto industry after the Second World War  
(B) describing unionism and the situation of workers in the Japanese auto industry after the Second World War  
(C) providing examples of grievances of Japanese auto workers against the auto industry after the Second World War  
(D) correcting a misconception about the role of the foreman in the Japanese auto industry's union system after the Second World War  
(E) reasserting the traditional view of the company's role in Japanese auto workers' unions after the Second World War

2. According to the passage, a foreman in a United States auto company differed from a foreman in a Japanese auto company in that the foreman in the United States would  
(A) not have been a member of an auto workers' union  
(B) have been unlikely to support the goals of company management  
(C) have been able to control production processes to a large extent  
(D) have experienced greater stress  
(E) have experienced less conflict with workers

3. The author of the passage mentions the "OH! NO!" system primarily in order to  
(A) indicate a way in which the United States industry has become more like the Japanese auto industry  
(B) challenge a particular misconception about worker empowerment in the Japanese auto industry  
(C) illustrate the kinds of problem-solving techniques encouraged by company unions in Japan  
(D) suggest an effective way of minimizing production costs in auto manufacturing  
(E) provide an example of the responsibilities assumed by a foreman in the Japanese auto industry

4. It can be inferred that the author of the passage sees which of the following as the primary advantage to companies in implementing the "OH! NO!" system?  
(A) It permitted the foreman to take initiative.  
(B) It minimized the effort required to produce automobiles.  
(C) It ensured that production costs would be as low as possible.  
(D) It allowed the foreman to control the production process.  
(E) It required considerable worker empowerment to achieve managers' goals.

### Passage 47

Companies that must determine well in advance of the selling season how many units of a new product to manufacture often under-produce products that sell well and have overstocks of others. The increased incidence in recent years of mismatches between production and demand seems ironic, since point-of sale scanners have improved data on consumers' buying patterns and since flexible manufacturing has enabled companies to produce, cost-effectively, small quantities of goods. This type of manufacturing has greatly increased the number of new products introduced annually in the United States. However, frequent introductions of new products have two problematic side effects. For one, they reduce the average lifetime of products; more of them are neither at the beginning of their life (when prediction is difficult) or at the end of their life (when keeping inventory is expensive because the products will soon become obsolete). For another, as new products proliferate, demand is divided among a growing number of stock-keeping units (SKU's). Even though manufacturers and retailers can forecast aggregate demand with some certainty, forecasting accurately how that demand will be distributed among the many SKU's they sell is difficult. For example, a company may be able to estimate accurately the aggregate number of shoes it will sell, but it may be uncertain about which specific types of shoes will sell more than other types.

#### 1) Which of the following most accurately describes the function of the last sentence in the passage?

- A. To cite a situation in which the aggregate demand is more important than the distribution of demand among SKU's
- B. To refute an assertion about the side effects of flexible manufacturing
- C. To illustrate an assertion about companies' ability to forecast demand
- D. To provide an example of ways in which companies address the difficulties of forecasting demand
- E. To note an exception to the author's assertion about distributing demand among SKU's

#### 2) The passage suggests which of the following about divided demand among a growing number of SKU's?

- A. It has increased the average lifetime of products.
- B. It has resulted from retailer's attempts to predict demand more accurately and avoid both understocks and overstocks.
- C. It has decreased the use of flexible manufacturing by companies.
- D. It has not increased the expense of keeping inventory of certain products.
- E. It has not prevented companies from predicting aggregate demand with some certainty.

#### 3) According to the passage, which of the following has led to growth in the number of new products introduced in the United States each year?

- A. Reduced average lifetime of products
- B. Increased ability to forecast aggregate demand
- C. More cost-effective ways of keeping inventory for products
- D. Cost-effective production of small quantities of goods
- E. Increased ability to divide demand among a number of SKU's and to forecast how that demand will be distributed among those SKU's

## Passage 48

Anthropologists studying the Hopi people of the southwestern United States often characterize Hopi society between 1680 and 1880 as surprisingly stable, considering that it was a period of diminution in population and pressure from contact with outside groups, factors that might be expected to cause significant changes in Hopi social arrangements. The Hopis' retention of their distinctive socio-cultural system has been attributed to the Hopi religious elite's determined efforts to preserve their religion and way of life, and also to a geographical isolation greater than that of many other Native American groups, an isolation that limited both cultural contact and exposure to European diseases. But equally important to Hopi cultural persistence may have been an inherent flexibility in their social system that may have allowed preservation of traditions even as the Hopis accommodated themselves to change. For example, the system of matrilineal clans was maintained throughout this period, even though some clans merged to form larger groups while others divided into smaller descent groups. Furthermore, although traditionally members of particular Hopi clans appear to have exclusively controlled particular ceremonies, a clan's control of a ceremony might shift to another clan if the first became too small to manage the responsibility. Village leadership positions traditionally restricted to members of one clan might be similarly extended to members of other clans, and women might assume such positions under certain unusual conditions.

- 1) The author of the passage would be most likely to agree with which of the following statements about the explanation outlined in the highlighted text?
  - A. It fails to take into account the effect of geographical circumstances on Hopi culture.
  - B. It correctly emphasizes the role of the religious elite in maintaining the system of matrilineal clans.
  - C. It represents a misreading of Hopi culture because it fails to take into account the actual differences that existed among the various Hopi clans.
  - D. It underestimates the effect on Hopi cultural development of contact with other cultural groups.
  - E. It is correct but may be insufficient in itself to explain Hopi socio-cultural persistence.
  
- 2) Which of the following can be inferred from the passage about the Hopis' geographic situation between 1680 and 1880?
  - A. It prevented the Hopis from experiencing a diminution in population.
  - B. It helped to promote flexibility within their social system.
  - C. It limited but did not eliminate contact with other cultural groups.
  - D. It reinforced the religious elite's determination to resist cultural change.
  - E. It tended to limit contact between certain Hopi clans.
  
- 3) The passage is primarily concerned with
  - A. reassessing a phenomenon in light of new findings
  - B. assessing the relative importance of two factors underlying a phenomenon
  - C. examining the assumptions underlying an interpretation of a phenomenon
  - D. expanding on an explanation of a phenomenon
  - E. contrasting two methods for evaluating a phenomenon
  
4. The author of the passage mentions the control of ceremonies by particular Hopi clans most likely in order to
  - A. provide an example of the way in which the religious elite protected their position within Hopi society
  - B. note an exception to a larger pattern evident in many Native American cultures
  - C. explain the connection in Hopi culture between religious and political leadership
  - D. illustrate how the Hopis combined flexibility with tradition
  - E. cite evidence that counters a common misconception about the structure of Hopi society

### Passage 49

Extensive research has shown that the effects of short-term price promotions on sales are themselves Line short-term. Companies' hopes that promotions might have a positive aftereffect have not been borne out for reasons that researchers have been able to identify.

A price promotion entices only a brand's long-term or "loyal" customers; people seldom buy an unfamiliar brand merely because the price is reduced. They simply avoid paying more than they have to when one of their customary brands is temporarily available at a reduced price. A price promotion does not increase the number of long-term customers of a brand, as it attracts virtually no new customers in the first place. Nor do price promotions have lingering aftereffects for a brand, even negative ones such as damage to a brand's reputation or erosion of customer loyalty, as is often feared.

So why do companies spend so much on price promotions? Clearly price promotions are generally run at a loss, otherwise there would be more of them. And the bigger the increase in sales at promotion prices, the bigger the loss. While short-term price promotions can have legitimate uses, such as reducing excess inventory, it is the recognizable increase in sales that is their main attraction to management, which is therefore reluctant to abandon this strategy despite its effect on the bottom line.

- Q1: The primary purpose of the passage is to
- A. compare the arguments in favor of a certain strategy with those against it
  - B. attack a certain strategy by enumerating its negative consequences
  - C. justify the use of a certain strategy in light of certain criticisms that have been made against it
  - D. advocate a particular strategy by arguing against an alternative
  - E. explain the effects of a certain strategy and the primary motivations for adopting it

Q2: According to the passage, which of the following is the reason why short-term price promotions do not attract new long-term customers to a brand?

- A. Short-term price promotions do not produce an increase in sales.
- B. Customers come to regard the promotional price as the fair price and the regular price as excessive.
- C. Most customers select among competing products largely on the basis of price and very few are loyal to any particular brand.
- D. Customers who have not previously bought the promoted brand are almost never persuaded to do so by the short-term price promotions.
- E. Any customers that a brand gains by means of a short-term price promotion are liable to be lost when a competing brand has a similar promotion.

Q3: The passage suggests that evidence for price promotions' "effect on the bottom line" (Last line) is provided by

- A. the lack of lingering aftereffects from price promotions
- B. the frequency with which price promotions occur
- C. price promotions' inability to attract new customers
- D. price promotions' recognizable effect on sales
- E. the legitimate uses to which management can put price promotions

Q4: It can be inferred from the passage that if a company ceased to run short-term price promotions for a particular product, an effect of this change would be

- A. reduce excess inventory of the product
- B. lose some of the product's long term customers
- C. reduce the product's overall sales
- D. inhibit growth in the number of product's customer.
- E. threaten the products profitability.

## Passage 50

In mid-February 1917 a women's movement independent of political affiliation erupted in New York City, the stronghold of the Socialist Party in the United States. Protesting against the high cost of living, thousands of women refused to buy chickens, fish, and vegetables. The boycott shut down much of the City's foodstuffs marketing for two weeks, riveting public attention on the issue of food prices, which had increased partly as a result of increased exports of food to Europe that had been occurring since the outbreak of the First World War.

By early 1917 the Socialist party had established itself as a major political presence in New York City. New York Socialists, whose customary spheres of struggle were electoral work and trade union organizing, seized the opportunity and quickly organized an extensive series of cost-of-living protests designed to direct the women's movement toward Socialist goals. Underneath the Socialists' brief commitment to cost-of-living organizing lay a basic indifference to the issue itself. While some Socialists did view price protests as a direct step toward socialism, most Socialists ultimately sought to divert the cost-of-living movement into alternative channels of protest. Union organizing, they argued, was the best method through which to combat the high cost of living. For others, cost-of-living or organizing was valuable insofar as it led women into the struggle for suffrage, and similarly, the suffrage struggle was valuable insofar as it moved United States society one step closer to socialism.

Although New York's Socialists saw the cost-of-living issue as, at best, secondary or tertiary to the real task at hand, the boycotters, by sharp contrast, joined the price protest movement out of an urgent and deeply felt commitment to the cost-of-living issue. A shared experience of swiftly declining living standards caused by rising food prices drove these women to protest. Consumer organizing spoke directly to their daily lives and concerns; they saw cheaper food as a valuable end in itself. Food price protests were these women's way of organizing at their own workplace, as workers whose occupation was shopping and preparing food for their families.

1. The author suggests which of the following about New York Socialists' commitment to the cost-of-living movement?
  - (A) It lasted for a relatively short period of time
  - (B) It was stronger than their commitment to the suffrage struggle.
  - (C) It predated the cost-of-living protest that erupted in 1917.
  - (D) It coincided with their attempts to bring more women into union organizing.
  - (E) It explained the popularity of the Socialist party in NYC.
2. It can be inferred from the passage that the goal of the boycotting women was the
  - (A) achievement of an immediate economic outcome
  - (B) development of a more socialistic society
  - (C) concentration of a widespread consumer protest on the more narrow issue of food prices.
  - (D) development of one among a number of different approaches that the women wished to employ in combating the high cost of price.
  - (E) attraction of more public interest to issues that the women and the socialist considered important.
3. Which of the following best states the function of the passage as a whole?
  - (A) To contrast the views held by the Socialist party and the boycotting women in the cost-of-living issue.
  - (B) To analyze the assumption underlying opposing viewpoints with the NY socialist party of 1917
  - (C) To provide a historical perspective on different approaches to the resolution of cost-of-living issue.
  - (D) To chronicle the sequence of events that lead to the NY socialist party's emergency as a political power.
  - (E) To analyze the motivations behind the socialist party's involvement in the women's suffrage movement.
4. According to the passage, most New York Socialists believed which of the following about the cost-of-living movement?
  - (A) It was primarily a way to interest women in joining the Socialist Party.
  - (B) It was an expedient that was useful only insofar as it furthered other goals.
  - (C) It would indirectly result in an increase in the number of women who belonged to labor unions.
  - (D) It required a long-term commitment but inevitably represented a direct step toward socialism.
  - (E) It served as an effective complement to union organizing.

### Passage 51

In her account of unmarried women's experiences in colonial Philadelphia, Wulf argues that educated young women, particularly (5) Quakers, engaged in resistance to patriarchal marriage by exchanging poetry critical of marriage, copying verse into their commonplace books. Wulf suggests that this (10) critique circulated beyond the daughters of the Quaker elite and middle class, whose commonplace books she mines, proposing that Quaker schools (15) brought it to many poor female students of diverse backgrounds.

Here Wulf probably overstates Quaker schools' impact. At least three years' study would be (20) necessary to achieve the literacy competence necessary to grapple with the material she analyzes. In 1765, the year Wulf uses to demonstrate the diversity of (25) Philadelphia's Quaker schools, 128 students enrolled in these schools. Refining Wulf's numbers by the information she provides on religious affiliation, gender, and (30) length of study, it appears that only about 17 poor non-Quaker girls were educated in Philadelphia's Quaker schools for three years or longer. While Wulf is correct that (35) a critique of patriarchal marriage circulated broadly, Quaker schools probably cannot be credited with instilling these ideas in the lower classes. Popular literary satires (40) on marriage had already landed on fertile ground in a multiethnic population that embodied a wide range of marital beliefs and practices. These ethnic- and (45) class-based traditions themselves challenged the legitimacy of patriarchal marriage.

#### 1. The primary purpose of the passage is to

- A. argue against one aspect of Wulf's account of how ideas critical of marriage were disseminated among young women in colonial Philadelphia
- B. discuss Wulf's interpretation of the significance for educated young women in colonial Philadelphia of the poetry they copied into their commonplace books
- C. counter Wulf's assertions about the impact of the multiethnic character of colonial Philadelphia's population on the prevalent views about marriage
- D. present data to undermine Wulf's assessment of the diversity of the student body in Quaker schools in colonial Philadelphia
- E. challenge Wulf's conclusion that a critique of marriage was prevalent among young women of all social classes in colonial Philadelphia

#### 2. According to the passage, which of the following was true of attitudes toward marriage in colonial Philadelphia?

- A. Exemplars of a critique of marriage could be found in various literary forms, but they did not impact public attitudes except among educated young women.
- B. The diversity of the student body in the Quaker schools meant that attitudes toward marriage were more disparate there than elsewhere in Philadelphia society.
- C. Although critical attitudes toward marriage were widespread, Quaker schools' influence in disseminating these attitudes was limited.
- D. Criticisms of marriage in colonial Philadelphia were directed at only certain limited aspects of patriarchal marriage.
- E. The influence of the wide range of marital beliefs and practices present in Philadelphia's multiethnic population can be detected in the poetry that educated young women copied in their commonplace books.

#### 3. The author of the passage implies which of the following about the poetry mentioned in the first paragraph?

- A. Wulf exaggerates the degree to which young women from an elite background regarded the poetry as providing a critique of marriage.
- B. The circulation of the poetry was confined to young Quaker women.
- C. Young women copied the poetry into their commonplace books because they interpreted it as providing a desirable model of unmarried life.
- D. The poetry's capacity to influence popular attitudes was restricted by the degree of literacy necessary to comprehend it.
- E. The poetry celebrated marital beliefs and practices that were in opposition to patriarchal marriage.

#### 4. Which of the following, if true, would most seriously undermine the author's basis for saying that Wulf overstates Quaker schools' impact (line 17-18) ?

- A. The information that Wulf herself provided on religious affiliation and gender of students is in fact accurate.
- B. Most poor, non-Quaker students enrolled in Quaker schools had completed one or two years' formal or informal schooling before enrolling.
- C. Not all of the young women whose commonplace books contained copies of poetry critical of marriage were Quakers.
- D. The poetry featured in young women's commonplace books frequently included allusions that were unlikely to be accessible to someone with only three years' study in school.
- E. In 1765 an unusually large proportion of the Quaker schools' student body consisted of poor girls from non-Quaker backgrounds.

## Passage 52

Prior to 1965 geologists assumed that the two giant rock plates meeting at the San Andreas Fault generate heat through friction as they grind past each other, but in 1965 Henyey found that temperatures in drill holes near the fault were not as elevated as had been expected. Some geologists wondered whether the absence of friction-generated heat could be explained by the kinds of rock composing the fault. Geologists' pre-1965 assumptions concerning heat generated in the fault were based on calculations about common varieties of rocks, such as limestone and granite; but "weaker" materials, such as clays, had already been identified in samples retrieved from the fault zone. Under normal conditions, rocks composed of clay produce far less friction than do other rock types.

In 1992 Byerlee tested whether these materials would produce friction 10 to 15 kilometers below the Earth's surface. Byerlee found that when clay samples were subjected to the thousands of atmospheres of pressure they would encounter deep inside the Earth, they produced as much friction as was produced by other rock types. The harder rocks push against each other, the hotter they become; in other words, pressure itself, not only the rocks' properties, affects frictional heating. Geologists therefore wondered whether the friction between the plates was being reduced by pockets of pressurized water within the fault that push the plates away from each other

1. The passage suggests which of the following regarding Henyey's findings about temperature in the San Andreas Fault?

- (A) Scientists have yet to formulate a definitive explanation for Henyey's findings.
- (B) Recent research suggests that Henyey's explanation for the findings should be modified.
- (C) Henyey's findings had to be recalculated in light of Byerlee's 1992 experiment.
- (D) Henyey's findings provided support for an assumption long held by geologists.
- (E) Scientists have been unable to duplicate Henyey's findings using more recent experimental methods.

2. The passage is primarily concerned with

- (A) evaluating a method used to test a particular scientific hypothesis
- (B) discussing explanations for an unexpected scientific finding
- (C) examining the assumptions underlying a particular experiment
- (D) questioning the validity of a scientific finding
- (E) presenting evidence to support a recent scientific hypothesis

3. The passage mostly agree that Henyey's findings about temperature in the San Andreas Fault made the greatest contribution in that they

- (A) revealed an error in previous measurements of temperature in the San Andreas Fault zone
- (B) indicated the types of clay present in the rocks that form the San Andreas Fault
- (C) established the superiority of a particular technique for evaluating data concerning friction in the San Andreas Fault
- (D) suggested that geologists had inaccurately assumed that giant rock plates that meet at the San Andreas Fault generate heat through friction
- (E) confirmed geologists' assumptions about the amount of friction generated by common varieties of rocks, such as limestone and granite

4. According to the passage, Henyey's findings in 1965 were significant because they

- (A) revealed an error in previous measurements of temperature in the San Andreas Fault zone
- (B) indicated the types of clay present in the rocks that form the San Andreas Fault
- (C) established the superiority of a particular technique for evaluating data concerning friction in the San Andreas Fault
- (D) suggested that geologists had inaccurately assumed that giant rock plates that meet at the San Andreas Fault generate heat through friction
- (E) confirmed geologists' assumptions about the amount of friction generated by common varieties of rocks, such as limestone and granite

### Passage 53

Solar ponds are bodies of water in which circulation is incomplete and there is a very high salt concentration that increases with depth. This vertical change in salinity serves to trap heat because concentrated brine in the lowest water level acts as a collector and storage area for solar heat, while the less saline, lighter water at the upper levels provides insulation. Heat is thus retained in the depths.

An artificial pond of this type has been constructed on the western shore of the Dead Sea in Israel in order to test its suitability as a source of low-grade heat for conversion into electricity. An immediate threat to the success of the venture was the growth of algae. Water in solar ponds must be kept maximally transparent to allow penetration of light to the deep storage area. Therefore, any particles of matter in the water, such as algae cells, that scatter or absorb light will interfere with the collection of heat.

One proposed method of controlling the algae was the application of an algicide. However, the Dead Sea is a closed body of water without any outlet and as such is very easily contaminated. Extensive use of chemicals in numerous future full-scale solar ponds would lead to such contamination of the Dead Sea, which now enjoys a lucrative tourist trade.

A recent experiment has supplied a more promising method for controlling the algae. To repress the algae cells' capacity for accommodating themselves to environmental changes, the water in the solar pond was first made more saline through evaporation and then diluted by a rapid inflow of fresh water. This shock reduced the cells' ability to regulate the movement of water through their membranes. They rapidly absorbed water, resulting in distortions of shape, increase in volume, and impairment to motility. Their buoyancy adversely affected, the cells sank to the bottom of the pond, where they encountered the hot waters of the storage layer and were destroyed. This method allows for effective control of nuisance algae while leaving solar ponds as one of the cleanest technologies providing energy for human use.

1. The primary purpose of the passage is to
- (A) discuss ways of solving a problem that threatens to limit the usefulness of an energy source
  - (B) explain the mechanisms by which solar heat may be converted into energy
  - (C) detail the processes by which algae cells colonize highly

saline bodies of water

- (D) report the results of an experiment designed to clean contaminated bodies of water
- (E) describe the unique properties of a solar pond on the edge of the Dead Sea

2. It can be inferred from the passage that which of the following is true about the salinity and temperatures of the highest and lowest water layers in a typical solar pond?
- (A) The bottom layer is both highly saline and quite hot, while the top layer is less saline and cooler.
  - (B) The two layers have similar salinity levels, but the bottom layer is hotter than the top.
  - (C) There is no way to predict the salinity and temperature of the different water layers in different solar ponds.
  - (D) The bottom layer is less saline and quite hot, while the top layer is more saline and cooler.
  - (E) The top layer has both higher salinity and higher temperatures than the bottom layer.

3. According to the passage, the growth of algae was considered a threat to the success of the artificial pond near the Dead Sea because the algae
- (A) produce excess oxygen that lowers the water temperature in the pond
  - (B) restrict the circulation of water within the pond
  - (C) enable heat to escape through the upper level of the pond
  - (D) prevent light from penetrating to the lowest levels of the pond
  - (E) prevent accurate measurement of the heat collected in the pond

4. Which of the following, if true, would seriously undermine the validity of the conclusions drawn from the experiment described in the last paragraph of the passage?
- (A) The algae cells that sank to the bottom of the pond were destroyed only after a time lag of twenty-four hours.
  - (B) The lateral motility of the algae cells that sank to the bottom of the pond was not impaired.
  - (C) The water with which the artificial solar pond was diluted contained microorganisms that kill algae.
  - (D) The algae cells that sank to the bottom of the pond were actually killed by the rapid change in pressure.
  - (E) The higher salinity brought about through evaporation increased the transparency of the upper levels of water in the pond.

## Passage 54

Linda Kerber argued in the mid-1980's that after the American Revolution (1775-1783), an ideology of "republican motherhood" resulted in a surge of educational opportunities for women in the United States. Kerber maintained that the leaders of the new nation wanted women to be educated in order to raise politically virtuous sons. A virtuous citizenry was considered essential to the success of the country's republican form of government; virtue was to be instilled not only by churches and schools, but by families, where the mother's role was crucial. Thus, according to Kerber, motherhood became pivotal to the fate of the republic, providing justification for an unprecedented attention to female education.

Introduction of the republican motherhood thesis dramatically changed historiography. Prior to Kerber's work, educational historians barely mentioned women and girls; Thomas Woody's 1929 work is the notable exception. Examining newspaper advertisements for academies, Woody found that educational opportunities increased for both girls and boys around 1750. Pointing to "An Essay on Woman" (1753) as reflecting a shift in view, Woody also claimed that practical education for females had many advocates before the Revolution. Woody's evidence challenges the notion that the Revolution changed attitudes regarding female education, although it may have accelerated earlier trends. Historians' reliance on Kerber's "republican motherhood" thesis may have obscured the presence of these trends, making it difficult to determine to what extent the Revolution really changed women's lives.

### 1) According to the passage, within the field of educational history, Thomas Woody's 1929 work was

- (A) innovative because it relied on newspaper advertisements as evidence
- (B) exceptional in that it concentrated on the period before the American Revolution
- (C) unusual in that it focused on educational attitudes rather than on educational practices
- (D) controversial in its claims regarding educational opportunities for boys
- (E) atypical in that it examined the education of girls

### 2) According to the passage, Kerber argued that political leaders thought that the form of government adopted by the United States after the American Revolution depended on which of the following for its success?

- (A) Women assuming the sole responsibility for instilling political virtue in children
- (B) Girls becoming the primary focus of a reformed educational system that emphasized political virtue
- (C) The family serving as one of the primary means by which children were imbued with political virtue

- (D) The family assuming many of the functions previously performed by schools and churches
- (E) Men and women assuming equal responsibility for the management of schools, churches, and the family

### 3) The passage suggests that, with regard to the history of women's education in the United States, Kerber's work differs from Woody's primarily concerning which of the following?

- (A) The extent to which women were interested in pursuing educational opportunities in the eighteenth century
- (B) The extent of the support for educational opportunities for girls prior to the American Revolution
- (C) The extent of public resistance to educational opportunities for women after the American Revolution
- (D) Whether attitudes toward women's educational opportunities changed during the eighteenth century
- (E) Whether women needed to be educated in order to contribute to the success of a republican form of government

### 4) According to the passage, Kerber maintained that which of the following led to an increase in educational opportunities for women in the United States after the American Revolution?

- (A) An unprecedented demand by women for greater educational opportunities in the decades following the Revolution
- (B) A new political ideology calling for equality of opportunity between women and men in all aspects of life
- (C) A belief that the American educational system could be reformed only if women participated more fully in that system
- (D) A belief that women needed to be educated if they were to contribute to the success of the nation's new form of government
- (E) A recognition that women needed to be educated if they were to take an active role in the nation's schools and churches

### 5) The passage suggests that Woody would have agreed with which of the following claims regarding "An Essay on Woman"?

- (A) It expressed attitudes concerning women's education that were reflected in new educational opportunities for women after 1750.
- (B) It persuaded educators to offer greater educational opportunities to women in the 1750s.
- (C) It articulated ideas about women's education that would not be realized until after the American Revolution.
- (D) It offered one of the most original arguments in favor of women's education in the United States in the eighteenth century.
- (E) It presented views about women's education that were still controversial in Woody's own time.

## Passage 55

Two opposing scenarios, the “arboreal” hypothesis and the “cursorial” hypothesis, have traditionally been put forward concerning the origins of bird flight. The “arboreal” hypothesis holds that bird ancestors began to fly by climbing trees and gliding down from branches with the help of incipient feathers: the height of trees provides a good starting place for launching flight, especially through gliding. As feathers became larger over time, flapping flight evolved and birds finally became fully air-borne. This hypothesis makes intuitive sense, but certain aspects are troubling. *Archaeopteryx* (the earliest known bird) and its maniraptoran dinosaur cousins have no obviously arboreal adaptations, such as feet fully adapted for perching. Perhaps some of them could climb trees, but no convincing analysis has demonstrated how *Archaeopteryx* would have both climbed and flown with its forelimbs, and there were no plants taller than a few meters in the environments where *Archaeopteryx* fossils have been found. Even if the animals could climb trees, this ability is not synonymous with gliding ability. (Many small animals, and even some goats and kangaroos, are capable of climbing trees but are not gliders.) Besides, *Archaeopteryx* shows no obvious features of gliders, such as a broad membrane connecting forelimbs and hind limbs.

The “cursorial”(running) hypothesis holds that small dinosaurs ran along the ground and stretched out their arms for balance as they leaped into the air after insect prey or, perhaps, to avoid predators. Even rudimentary feathers on forelimbs could have expanded the arm’s surface area to enhance lift slightly. Larger feathers could have increased lift incrementally, until sustained flight was gradually achieved. Of course, a leap into the air does not provide the acceleration produced by dropping out of a tree; an animal would have to run quite fast to take off. Still, some small terrestrial animals can achieve high speeds. The cursorial hypothesis is strengthened by the fact that the immediate theropod dinosaur ancestors of birds were terrestrial, and they had the traits needed for high lift off speeds: they were small, agile, lightly built, long-legged, and good runners. And because they were bipedal, their arms were free to evolve flapping flight, which cannot be said for other reptiles of their time.

1. The primary purpose of the passage is to
  - (A) present counter evidence to two hypotheses concerning the origins of bird flight
  - (B) propose an alternative to two hypotheses concerning the origins of bird flight correct certain misconceptions about hypotheses concerning the origins of bird flight
  - (C) dismiss counter evidence to two hypotheses concerning the origins of bird flight
  - (D) refute a challenge to a hypothesis concerning the origins of bird flight
  - (E) evaluate competing hypotheses concerning the origins of bird flight
2. Which of the following is included in the discussion of the cursorial hypothesis but not in the discussion of the arboreal hypothesis?
  - (A) discussion of some of the features of *Archaeopteryx*
  - (B) description of the environment known to have been inhabited by bird ancestors
  - (C) possible reason why bird ancestors might have been engaging in activities that eventually evolved into flight
  - (D) description of the obvious features of animals with gliding ability
  - (E) An estimate of the amount of time it took for bird ancestors to evolve the kind of flapping flight that allowed them to become completely airborne
3. The passage presents which of the following facts as evidence that tends to undermine the arboreal hypothesis?
  - (A) Feathers tend to become larger over time
  - (B) Flapping flight is thought to have evolved gradually over time
  - (C) Many small animals are capable of climbing trees.
  - (D) Plants in *Archaeopteryx*'s known habitats were relatively small
  - (E) Leaping into the air does not provide as much acceleration as gliding out of a tree
4. The passage suggests which of the following regarding the climbing ability of *Archaeopteryx*?
  - (A) Its ability to climb trees was likely hindered by the presence of incipient feathers on its forelimbs.
  - (B) It was probably better at climbing trees than were its maniraptoran dinosaur cousins.
  - (C) It had certain physical adaptations that suggest it was skilled at climbing trees.
  - (D) Scientists have recently discovered fossil evidence suggesting it could not climb trees.
  - (E) Scientists are uncertain whether it was capable of climbing trees

## Passage 56

The system of patent-granting, which confers temporary monopolies for the exploitation of new technologies, was originally established as an incentive to the pursuit of risky new ideas. Yet studies of the most patent-conscious business of all—the semi-conductor industry—suggest that firms do not necessarily become more innovative as they increase their patenting activity. Ziedonis and Hall, for example, found that investment in research and development (a reasonable proxy for innovation) did not substantially increase between 1982 and 1992, the industry's most feverish period of patenting. Instead, semiconductor firms simply squeezed more patents out of existing research and development expenditures. Moreover, Ziedonis and Hall found that as patenting activity at semiconductor firms increased in the 1980's, the consensus among industry employees was that the average quality of their firms' patents declined. Though patent quality is a difficult notion to measure, the number of times a patent is cited in the technical literature is a reasonable yardstick, and citations per semiconductor patent did decline during the 1980's. This decline in quality may be related to changes in the way semi-conductor firms managed their patenting process: rather than patenting to win exclusive rights to a valuable new technology, patents were filed more for strategic purposes, to be used as bargaining chips to ward off infringement suites or as a means to block competitors' products.

### 1. The passage is primarily concerned with discussing

- (A) a study suggesting that the semiconductor industry's approach to patenting during the period from 1982 to 1992 yielded unanticipated results
- (B) a study of the semiconductor industry during the period from 1982 to 1992 that advocates certain changes in the industry's management of the patenting process
- (C) the connection between patenting and innovation in the semiconductor industry during the period from 1982 to 1992
- (D) reasons that investment in research and development in the semiconductor industry did not increase significantly during the period from 1982 to 1992
- (E) certain factors that made the period from 1982 to 1992 a time of intense patenting activity in the semiconductor industry

### 2. The passage suggests which of the following about patenting in the semiconductor industry during the period from 1982 to 1992 ?

- (A) The declining number of citations per semiconductor patent in the technical literature undermines the notion that patenting activity increased during this period.
- (B) A decline in patent quality forced firms to change the way

they managed the patenting process.

- (C) Increased efficiencies allowed firms to derive more patents from existing research and development expenditures.
- (D) Firms' emphasis on filing patents for strategic purposes may have contributed to a decline in patent quality.
- (E) Firms' attempts to derive more patents from existing research and development expenditures may have contributed to a decline in infringement suites.

### 3. The passage makes which of the following claims about patent quality in the semiconductor industry?

- (A) It was higher in the early 1980's than it was a decade later.
- (B) It is largely independent of the number of patents granted.
- (C) It changed between 1982 and 1992 in ways that were linked to changes in research and development expenditures.
- (D) It is not adequately discussed in the industry's technical literature.
- (E) It was measured by inappropriate means during the period from 1982 to 1992.

### 4. Which of the following, if true, would most clearly serve to weaken the author's claim about what constitutes a reasonable yardstick for measuring patent quality?

- (A) It is more difficult to have an article accepted for publication in the technical literature of the semiconductor industry than it is in the technical literature of most other industries.
- (B) Many of the highest-quality semiconductor patents are cited numerous times in the technical literature.
- (C) It is difficult for someone not familiar with the technical literature to recognize what constitutes an innovative semiconductor patent.
- (D) There were more citations made per semiconductor patent in the technical literature in the 1970's than in the 1980's.
- (E) Low-quality patents tend to be discussed in the technical literature as frequently as high-quality patents.

### 5. The passage suggests that the use of patents as bargaining chips to ward off infringement suits

- (A) was rarely successful during the 1980s
- (B) became increasingly infrequent in the 1980s
- (C) does not fulfill the intended purpose of the patent-granting system
- (D) is a consequence of the decline in patent quality
- (E) is discussed increasingly in the semiconductor industry's technical literature

## Passage 57

First identified in 1969, komatiites are Earth's oldest known volcanic rocks and contain three times as much magnesium as do most volcanic rocks. This chemical composition suggests that komatiites formed from the hottest lava known ever to have erupted: a high concentration of magnesium changes the physical properties of lava so that unusually high temperatures would be required for the lava to exist as a liquid.

Komatiites' discovery was surprising in light of then-current geological theories about magmas, molten rock that forms in the Earth's mantle (the layer beneath the crust) and composes volcanic lava eruptions. Prior to 1960, geologists Bowen and Hess disagreed over whether or not the very high temperatures needed to produce magmas rich in magnesium could have existed on Earth. Hess suggested that the presence of water, probably released from minerals decomposing in the Earth's mantle, might have meant that a high-magnesium magma could have existed at a lower temperature. But Bowen showed experimentally that the high temperatures were indeed necessary. By 1960, it was generally accepted that volcanic rocks with such high levels of magnesium could not exist, and thus the discovery of komatiites changed geologists' assumptions about the characteristics of the Earth's mantle around the time of the formation of komatiites, between 2.5 and 4 billion years ago.

### 1. Which of the following most accurately describes the organization of the passage?

- (A) Two divergent views of a scientific phenomenon are reconciled.
- (B) A phenomenon is described and its scientific significance is discussed.
- (C) The discovery of a scientific phenomenon is traced and its implications for further research are suggested.
- (D) A long-standing scientific theory is examined and recently discovered evidence is shown to support it.
- (E) The ways in which a particular geological phenomenon is exceptional are detailed and classified.

### 2. Information in the passage suggests which of the following concerning the Earth's mantle 2.5 to 4 billion years ago?

- (A) It contained magmas that were more significantly affected by the decomposition of minerals than are current-day magmas.
- (B) It contained a lower proportion of water that it contains today.
- (C) Its characteristics were accurately described by both Bowen and Hess.
- (D) Its temperature was sufficiently high to produce magmas with high magnesium content.
- (E) Its total magnesium content then was roughly equivalent to its magnesium content today.

### 3. Which of the following most accurately states the main point of the passage?

- (A) Komatiites provide information about rates of volcanic eruption between 2.5 and 4 billion years ago.
- (B) Komatiites provide information about how the physical properties of lava in the Earth's past compare with those of current-day lava.
- (C) Komatiites provide evidence that undermines Bowen's experimental conclusions regarding the temperatures at which lava exists as a liquid.
- (D) Komatiites provide evidence that has changed geologists' ideas about the characteristics of the Earth's mantle between 2.5 and 4 billion years ago.
- (E) Komatiites provide evidence that water in the Earth's mantle may have reduced the temperature required for lava to exist as a liquid.

## Passage 58

The United States hospital industry is an unusual market in that nonprofit and for-profit producers exist simultaneously. Theoretical literature offers conflicting views on whether nonprofit hospitals are less financially efficient. Theory suggests that nonprofit hospitals are so much more interested in offering high-quality service than in making money that they frequently input more resources to provide the same output of service as for-profit hospitals. This priority might also often lead them to be less vigilant in streamlining their services—eliminating **duplication between departments**, for instance. Conversely, while profit motive is thought to encourage for-profit hospitals to attain efficient production, most theorists admit that obstacles to that efficiency remain. For-profit hospital **managers**, for example, generally work independently of hospital owners and thus may not always make maximum financial efficiency their highest priority. The literature also suggests that widespread adoption of third-party payment systems may eventually eliminate any such potential differences between the two kinds of hospitals.

The same literature offers similarly conflicting views of the efficiency of nonprofit hospitals from a social welfare perspective. Newhouse (1970) contends that nonprofit hospital managers unnecessarily expand the quality and quantity of hospital care beyond the actual needs of the community, while Weisbrod (1975) argues that nonprofit firms — hospitals included — contribute efficiently to community welfare by providing public services that might be inadequately provided by government alone.

### 1. Which of the following best describes the overall content of the second paragraph of the passage?

- (A) It describes views concerning a particular aspect of one of the types of hospitals discussed earlier.
- (B) It describes an additional benefit of one of the types of hospitals discussed earlier.
- (C) It offers a potential solution to a problem inherent in the structure of the United States hospital industry.
- (D) It provides an additional contrast between the two types of hospitals discussed earlier.
- (E) It describes one of the consequences of the character of the United States hospital market.

### 2. According to the passage, Newhouse's view of the social welfare efficiency of nonprofit hospitals differs from Weisbrod's view in that Newhouse

- (A) contends that government already provides most of the services that communities need
- (B) argues that for-profit hospitals are better at meeting actual community needs than are nonprofit hospitals
- (C) argues that nonprofit hospitals are likely to spend more to provide services that the community requires than for-profit hospitals are likely to spend
- (D) argues that nonprofit hospitals ought to expand the services they provide to meet the community's demands
- (E) believes that the level of care provided by nonprofit hospitals is inappropriate, given the community's requirements

### 3. The passage suggests which of the following about the managers mentioned in the highlighted text?

- (A) They have generally been motivated to streamline hospital services as a result of direct intervention by hospital owners.
- (B) They are more likely than managers of nonprofit hospitals to use unnecessary amounts of resources to provide services.
- (C) Their most important self-acknowledged goal is to achieve maximum financial efficiency so that hospitals show a profit.
- (D) Their decisions regarding services provided by their hospitals may not reflect hospital owners' priorities.
- (E) They do not place a high priority on maximizing profits, despite their desire to achieve efficiency.

### 4. The passage is primarily concerned with

- (A) discussing the advantages of increased efficiency in a particular type of hospital
- (B) assessing obstacles to efficiency in a particular type of hospital
- (C) describing conflicting assessments in the theoretical literature concerning particular types of hospitals
- (D) challenging evidence used to support an argument advanced in recent theoretical literature concerning a particular type of hospital
- (E) emphasizing the advantages of one particular type of hospital over another type

### 5. The author mentions duplication between departments primarily in order to

- (A) illustrate an area in which nonprofit hospitals fail to provide adequate services
- (B) describe the outcome of nonprofit hospitals' emphasis on maintaining managerial freedom
- (C) recommend a particular change that would allow nonprofit hospitals to streamline their services
- (D) suggest a way in which nonprofit hospitals may fail to achieve maximum financial efficiency
- (E) explain why nonprofit hospitals may be able to provide more services than for-profit hospitals

## Passage 59

Earth's surface consists of rigid plates that are constantly shifting and jostling one another. Plate movements are the surface expressions of motions in the mantle—the thick shell of rock that lies between Earth's crust and its metallic core. Although the hot rock of the mantle is a solid, under the tremendous pressure of the crust and overlying rock of the mantle, it flows like a viscous liquid. The mantle's motions, analogous to those in a pot of boiling water, cool the mantle by carrying hot material to the surface and returning cooler material to the depths. When the edge of one plate bends under another and its cooler material is consumed in the mantle, volcanic activity occurs as molten lava rises from the downgoing plate and erupts through the overlying one.

Most volcanoes occur at plate boundaries. However, certain "misplaced" volcanoes far from plate edges result from a second, independent mechanism that cools the deep interior of Earth. Because of its proximity to Earth's core, the rock at the base of the mantle is much hotter than rock in the upper mantle. The hotter the mantle rock is, the less it resists flowing. Reservoirs of this hot rock collect in the base of the mantle. When a reservoir is sufficiently large, a sphere of this hot rock forces its way up through the upper mantle to Earth's surface, creating a broad bulge in the topography. The "mantle plume" thus formed, once established, continues to channel hot material from the mantle base until the reservoir is emptied. The surface mark of an established plume is a hot spot—an isolated region of volcanoes and uplifted terrain located far from the edge of a surface plate. Because the source of a hot spot remains fixed while a surface plate moves over it, over a long period of time an active plume creates a chain of volcanoes or volcanic islands, a track marking the position of the plume relative to the moving plate. The natural history of the Hawaiian island chain clearly shows the movement of the Pacific plate over a fixed plume.

1. The passage is primarily concerned with discussing
  - (A) the composition of Earth's mantle
  - (B) how the Hawaiian Islands were created
  - (C) what causes Earth's surface plates to move
  - (D) two different mechanisms by which volcanoes are formed
  - (E) why most volcanoes occur at plate boundaries
2. It can be inferred from the passage that a chain of volcanoes created by a mantle plume would most likely be characterized by
  - (A) a curved outline
  - (B) constituent volcanoes that differ from each other in age
  - (C) occurrence near a plate boundary where one plate bends under another
  - (D) appearance near many other volcanic chains
  - (E) rocks with a wide range of chemical composition
3. The author's reference to the Hawaiian Islands serves primarily to
  - (A) provide an example of a type of volcanic activity that does not occur elsewhere
  - (B) identify the evidence initially used to establish that the Pacific plate moves
  - (C) call into question a theory about the source of the volcanoes that created the Hawaiian Islands
  - (D) illustrate the distance from plate edges at which volcanoes typically appear
  - (E) provide an example of how mantle plumes manifest themselves on Earth's surface
4. According to the passage, a hot spot on Earth's surface is an indication of which of the following?
  - (A) An untapped reservoir of hot rock in the base of the mantle
  - (B) Volcanic activity at the edge of a plate
  - (C) Solid mantle rock under tremendous pressure
  - (D) The occurrence of a phenomenon unique to the Pacific plate
  - (E) A plume of hot mantle rock originating near Earth's core

## Passage 60

Colonial historian David Allen's intensive study of five communities in seventeenth-century Massachusetts is a model of meticulous scholarship on the detailed microcosmic level, and is convincing up to a point. Allen suggests that much more coherence and direct continuity existed between English and colonial agricultural practices and administrative organization than other historians have suggested. However, he overstates his case with the declaration that he has proved "the remarkable extent to which diversity in New England local institutions was directly imitative of regional differences in the mother country.

Such an assertion ignores critical differences between seventeenth-century England and New England. First, England was overcrowded and land-hungry; New England was sparsely populated and labor-hungry. Second, England suffered the normal European rate of mortality; New England, especially in the first generation of English colonists, was virtually free from infectious diseases. Third, England had an all-embracing state church; in New England membership in a church was restricted to the elect. Fourth, a high proportion of English villagers lived under paternalistic resident squires; no such class existed in New England. By narrowing his focus to village institutions and ignoring these critical differences, which studies by Greven, Demos, and Lockridge have shown to be so important, Allen has created a somewhat distorted picture of reality.

Allen's work is a rather extreme example of the "country community" school of seventeenth-century English history whose intemperate excesses in removing all national issues from the history of that period have been exposed by Professor Clive Holmes. What conclusion can be drawn, for example, from Allen's discovery that Puritan clergy who had come to the colonies from East Anglia were one-third to one-half as likely to return to England by 1660 as were Puritan ministers from western and northern England? We are not told in what way, if at all, **this discovery** illuminates historical understanding. Studies of local history have enormously expanded our horizons, but it is a mistake for their authors to conclude that village institutions are all that mattered, simply because their functions are all that the records of village institutions reveal.

### 1. The passage suggests that Professor Clive Holmes would most likely agree with which of the following statements?

(A) An understanding of seventeenth-century English local institutions requires a consideration of national issues.

- (B) The "country community" school of seventeenth-century English history distorts historical evidence in order to establish continuity between old and new institutions.  
(C) Most historians distort reality by focusing on national concerns to the exclusion of local concerns.  
(D) National issues are best understood from the perspective of those at the local level.  
(E) Local histories of seventeenth-century English villages have contributed little to the understanding of village life.

### 2. It can be inferred from the passage that the author of the passage considers Allen's "discovery" (see highlighted text) to be

- (A) already known to earlier historians  
(B) based on a logical fallacy  
(C) improbable but nevertheless convincing  
(D) an unexplained, isolated fact  
(E) a new, insightful observation

### 3. It can be inferred that the author of the passage considers Allen's research on seventeenth-century Massachusetts colonies to be

- (A) inconsequential but interesting  
(B) largely derivative  
(C) detailed but problematic  
(D) highly commendable  
(E) overly theoretical

### 4. According to the passage, which of the following was true of most villages in seventeenth-century England?

- (A) The resident squire had significant authority.  
(B) Church members were selected on the basis of their social status within the community.  
(C) Low population density restricted agricultural and economic growth.  
(D) There was little diversity in local institutions from one region to another.  
(E) National events had little impact on local customs and administrative organization.

### 5. The author of the passage is primarily concerned with

- (A) substantiating a claim about a historical event  
(B) reconciling two opposing ideas about a historical era  
(C) disputing evidence a scholar uses to substantiate a claim about a historical event  
(D) analyzing two approaches to scholarly research and evaluating their methodologies  
(E) criticizing a particular study and the approach to historical scholarship it represents

## Passage 61

Anthropologists studying the Hopi people of the southwestern United States often characterize Hopi society between 1680 and 1880 as surprisingly stable, considering that it was a period of diminution in population and pressure from contact with outside groups, factors that might be expected to cause significant changes in Hopi social arrangements.

The Hopis' retention of their distinctive socio-cultural system has been attributed to the Hopi religious elite's determined efforts to preserve their religion and way of life, and also to a geographical isolation greater than that of many other Native American groups, an isolation that limited both cultural contact and exposure to European diseases. But equally important to Hopi cultural persistence may have been an inherent flexibility in their social system that may have allowed preservation of traditions even as the Hopis accommodated themselves to change. For example, the system of matrilineal clans was maintained throughout this period, even though some clans merged to form larger groups while others divided into smaller descent groups. Furthermore, although traditionally members of particular Hopi clans appear to have exclusively controlled particular ceremonies, a clan's control of a ceremony might shift to another clan if the first became too small to manage the responsibility. Village leadership positions traditionally restricted to members of one clan might be similarly extended to members of other clans, and women might assume such positions under certain unusual conditions.

### 1. The author of the passage would be most likely to agree with which of the following statements about the explanation outlined in highlighted text?

- (A) It fails to take into account the effect of geographical circumstances on Hopi culture.
- (B) It correctly emphasizes the role of the religious elite in maintaining the system of matrilineal clans.
- (C) It represents a misreading of Hopi culture because it fails to take into account the actual differences that existed among the various Hopi clans.
- (D) It underestimates the effect on Hopi cultural development of contact with other cultural groups.
- (E) It is correct but may be insufficient in itself to explain Hopi sociocultural persistence.

### 2. Which of the following can be inferred from the passage about the Hopis' geographic situation between 1680 and 1880?

- (A) It prevented the Hopis from experiencing a diminution in population.
- (B) It helped to promote flexibility within their social system.
- (C) It limited but did not eliminate contact with other cultural groups.
- (D) It reinforced the religious elite's determination to resist cultural change.
- (E) It tended to limit contact between certain Hopi clans.

### 3. The passage is primarily concerned with

- (A) reassessing a phenomenon in light of new findings
- (B) assessing the relative importance of two factors underlying a phenomenon
- (C) examining the assumptions underlying an interpretation of a phenomenon
- (D) expanding on an explanation of a phenomenon
- (E) contrasting two methods for evaluating a phenomenon

### 4. The author of the passage mentions the control of ceremonies by particular Hopi clans most likely in order to

- (A) provide an example of the way in which the religious elite protected their position within Hopi society
- (B) note an exception to a larger pattern evident in many Native American cultures
- (C) explain the connection in Hopi culture between religious and political leadership
- (D) illustrate how the Hopis combined flexibility with tradition
- (E) cite evidence that counters a common misconception about the structure of Hopi society

### 5. The passage suggests that sociocultural change in Hopi society between 1680 and 1880 was

- A. initiated primarily by contact with other cultural groups
- B. greater than that experienced by many other Native American peoples during that period
- C. less pronounced than might be expected, given the demographic conditions and external pressures during that period
- D. less pronounced than it had been previously because of diminution in the Hopi population occurring after 1680
- E. accelerated by the particular geographic circumstances of the Hopis

## Passage 62

Like many other industries, the travel industry is under increasing pressure to expand globally in order to keep pace with its corporate customers, who have globalized their operations in response to market pressure, competitor actions, and changing supplier relations. But it is difficult for service organizations to globalize. Global expansion through acquisition is usually expensive, and expansion through internal growth is time-consuming and sometimes impossible in markets that are not actively growing. Some service industry companies, in fact, regard these traditional routes to global expansion as inappropriate for service industries because of their special need to preserve local responsiveness through local presence and expertise. One travel agency has eschewed the traditional route altogether. A survivor of the changes that swept the travel industry as a result of the deregulation of the airlines in 1978—changes that included dramatic growth in the corporate demand for travel services, as well as extensive restructuring and consolidation within the travel industry—this agency adopted a unique structure for globalization. Rather than expand by attempting to develop its own offices abroad, which would require the development of local travel management expertise sufficient to capture foreign markets, the company solved its globalization dilemma effectively by forging alliances with the best foreign partners it could find. The resulting cooperative alliance of independent agencies now comprises 32 partners spanning 37 countries

1. The passage suggests that one of the effects of the deregulation of the airlines was
  - A. a decline in the services available to noncommercial travelers
  - B. a decrease in the size of the corporate travel market
  - C. a sharp increase in the number of cooperative alliances among travel agencies
  - D. increased competition in a number of different service industries
  - E. the merging of some companies within the travel industry
2. The author discusses a particular travel agency in the passage most likely in order to
  - (A) provide evidence of the pressures on the travel industry to globalize
  - (B) demonstrate the limitations of the traditional routes to global expansion
  - (C) illustrate an unusual approach to globalizing a service organization
  - (D) highlight the difficulties confronting travel agencies that attempt to globalize
  - (E) underscore the differences between the service industry and other industries
3. According to the passage, which of the following is true of the traditional routes to global expansion?
  - (A) They have been supplanted in most service industries by alternative routes.
  - (B) They are less attractive to travel agencies since deregulation of the airlines.
  - (C) They may represent the most cost-effective means for a travel agency to globalize.
  - (D) They may be unsuitable for service agencies that are attempting to globalize.
  - (E) They are most likely to succeed in markets that are not actively growing.

### Passage 63

*This passage was excerpted from material published in 1996.*

When a large body strikes a planet or moon, material is ejected, thereby creating a hole in the planet and a local deficit of mass. This deficit shows up as a gravity anomaly: the removal of material that has been ejected to make the hole results in an area in slightly lower gravity than surrounding areas. One would therefore expect that all of the large multi-ring impact basins on the surface of earth's moon would show such negative gravity anomalies, since they are, essentially, large holes in lunar surface. Yet data collected in 1994 by the Clementine spacecraft show that many of these Clementine basins have no anomalously low gravity and some even have anomalously high gravity. **Scientists** speculate that early in lunar history, when large impactors struck the moon's surface, causing millions of cubic kilometers of crustal debris to be ejected, denser material from the moon's mantle rose up beneath the impactors almost immediately, compensating for the ejected material and thus leaving no gravity anomaly in the resulting basin. Later, however, as moon grew cooler and less elastic, rebound from large impactors would have been only partial and incomplete. Thus today such **gravitational compensation** probably would not occur: the outer layer of moon is too cold and stiff.

1. According to the passage, the **gravitational compensation** referred to in the highlighted text is caused by which of the following?
  - (A) A deficit of mass resulting from the creation of hole in lunar surface
  - (B) The presence of material from the impactor in the debris created by its impact
  - (C) The gradual cooling and stiffening of the Moon's outer surface
  - (D) The ejection of massive amounts of debris from the moon's crust
  - (E) The rapid upwelling of material from the lunar mantle
2. The passage suggests that if the **scientists** mentioned in the highlighted text are correct in their speculations, the large multi-ring impact basins on the Moon with the most significant negative gravity anomalies probably
  - (A) were not formed early in the Moon's history
  - (B) were not formed by the massive ejection of crustal debris
  - (C) are closely surrounded by other impact basins with anomalously low gravity
  - (D) were created by the impact of multiple large impactors
  - (E) were formed when the moon was relatively elastic
3. The passage is primarily concerned with
  - (A) analyzing data from a 1994 exploration of lunar surface
  - (B) reconciling two opposing theories about the origin of lunar impact basins
  - (C) presenting a possible explanation of a puzzling finding about lunar impact basins
  - (D) discussing how impact basins on the Moon's surface are formed
  - (E) examining the claim that the moon's impact basins show negative gravity anomalies

## Passage 64

The general density dependence model can be applied to explain the founding of specialist firms (those attempting to serve a narrow target market). According to this model, specialist foundings hinge on the interplay between legitimation and competitive forces, both of which are functions of the density (total number) of firms in a particular specialist population. Legitimation occurs as a new type of firm moves from being viewed as unfamiliar to being viewed as a natural way to organize. At low density levels, each founding increases legitimation, reducing barriers to entry and easing subsequent foundings. Competition occurs because the resources that firms seek--customers, suppliers, and employees--are limited, but as long as density is low relative to plentiful resources, the addition of another firm has a negligible impact on the intensity of competition. At high density levels, however, competitive effects outweigh legitimation effects, discouraging foundings. The more numerous the competitors, the fiercer the competition will be and the smaller will be the incentive for new firms to enter the field.

While several studies have found a significant correspondence between the density dependence model and actual patterns of foundings, other studies have found patterns not consistent with the model. A possible explanation for this inconsistency is that legitimation and competitive forces transcend national boundaries, while studies typically restrict their analysis to the national level. Thus a national-level analysis can understate the true legitimation and competitive forces as well as the number of foundings in an industry that is internationally integrated. Many industries are or are becoming international, and since media and information easily cross national borders, so should legitimation and its effects on overseas foundings. For example, if a type of firm becomes established in the United States, that information transcends borders, reduces uncertainties, and helps foundings of that type of firm in other countries. Even within national contexts, studies have found more support for the density dependence model when they employ broader geographic units of analysis--for example, finding that the model's operation is seen more clearly at the state and national levels than at city levels.

**1. According to the passage, which of the following may account for the inconsistency between the general density dependence model and the evidence provided by certain studies of foundings?**

- (A) Such studies have overemphasized the impact of preexisting firms on the establishment of new firms.
- (B) Such studies have not focused strongly enough on the role of competition among newly established firms operating at the city and state levels.
- (C) Such studies fail to differentiate among specialist firms with regard to the degree to which they deviate from familiar forms of organization.
- (D) Such studies have not taken into account the fact that many industries are internationally integrated.
- (E) Such studies have neglected to investigate firms that attempt to serve only a narrow target market.

**2. In the second paragraph, the author is primarily concerned with**

- (A) noting various exceptions to a certain general finding
- (B) examining the impact of one type of industry on another
- (C) proposing a possible explanation for an inconsistency
- (D) providing specific examples of a particular phenomenon
- (E) defending the validity of a particular study's conclusions

**3. The passage suggests that when a population of specialist firms reaches a high density level, which of the following is likely to occur?**

- (A) Foundings will decline despite legitimation that has occurred in these industries.
- (B) Increasing competition will encourage many firms to broaden their target market.
- (C) Competition for resources will become stabilized and thus foundings will be encouraged.
- (D) Many customers will abandon their loyalty to older firms as more innovative firms enter the market.
- (E) Firms will begin to cross national borders in an attempt to gain a competitive advantage.

**4. The primary purpose of the passage is to**

- (A) question the validity of an economic model
- (B) point out some inconsistencies within an economic model
- (C) outline an economic model and suggest revisions to it
- (D) describe an economic model and provide specific examples to illustrate its use
- (E) explain why an economic model remains valid despite inconsistent research results

## Passage 65

In its 1903 decision in the case of *Lone Wolf v. Hitchcock*, the United States Supreme Court rejected the efforts of three Native American tribes to prevent the opening of tribal lands to non-Indian settlement without tribal consent. In his study of the *Lone Wolf* case, Blue Clark properly emphasizes the Court's assertion of a virtually unlimited unilateral power of Congress (the House of Representatives and the Senate) over Native American affairs. But he fails to note the decision's more far-reaching impact: shortly after *Lone Wolf*, the federal government totally abandoned negotiation and execution of formal written agreements with Indian tribes as a prerequisite for the implementation of federal Indian policy. Many commentators believe that this change had already occurred in 1871 when—following a dispute between the House and the Senate over which chamber should enjoy primacy in Indian affairs—Congress abolished the making of treaties with Native American tribes. But in reality the federal government continued to negotiate formal tribal agreements past the turn of the century, treating these documents not as treaties with sovereign nations requiring ratification by the Senate but simply as legislation to be passed by both houses of Congress. The *Lone Wolf* decision ended this era of formal negotiation and finally did away with what had increasingly become the empty formality of obtaining tribal consent.

### 1. The author of the passage is primarily concerned with

- A. identifying similarities in two different theories
- B. evaluating a work of scholarship
- C. analyzing the significance of a historical event
- D. debunking a revisionist interpretation
- E. exploring the relationship between law and social reality

### 2. According to the passage, which of the following was true of relations between the federal government and Native American tribes?

- A. Some Native American tribes approved of the congressional action of 1871 because it simplified their dealings with the federal government.
- B. Some Native American tribes were more eager to negotiate treaties with the United States after the *Lone Wolf* decision.
- C. Prior to the *Lone Wolf* decision, the Supreme Court was reluctant to hear cases involving agreements negotiated between Congress and Native American tribes.
- D. Prior to 1871, the federal government sometimes negotiated treaties with Native American tribes.
- E. Following 1871, the House exercised more power than did the Senate in the government's dealings with Native American tribes.

### 3. As an element in the argument presented by the author of the passage, the reference to Blue Clark's study of the *Lone Wolf* case serves primarily to

- A. point out that this episode in Native American history has received inadequate attention from scholars
- B. support the contention of the author of the passage that

the *Lone Wolf* decision had a greater long-term impact than did the congressional action of 1871

- C. challenge the validity of the Supreme Court's decision confirming the unlimited unilateral power of Congress in Native American affairs
- D. refute the argument of commentators who regard the congressional action of 1871 as the end of the era of formal negotiation between the federal government and Native American tribes
- E. introduce a view about the *Lone Wolf* decision that the author will expand upon

### 4. According to the passage, which of the following resulted from the *Lone Wolf* decision?

- A. The Supreme Court took on a greater role in Native American affairs.
- B. Native American tribes lost their legal standing as sovereign nations in their dealings with the federal government, but their ownership of tribal lands was confirmed.
- C. The federal government no longer needed to conclude a formal agreement with a Native American tribe in order to carry out policy decisions that affected the tribe.
- D. The federal government began to appropriate tribal lands for distribution to non-Indian settlers.
- E. Native American tribes were no longer able to challenge congressional actions by appealing to the Supreme Court.

### 5. According to the passage, the congressional action of 1871 had which of the following effects?

- (A) Native American tribal agreements were treated as legislation that had to be passed by both houses of Congress.
- (B) The number of formal agreements negotiated between the federal government and Native American tribes decreased.
- (C) The procedures for congressional approval and implementation of federal Indian policy were made more precise.
- (D) It became more difficult for Congress to exercise unilateral authority over Native American affairs.
- (E) The role of Congress in the ratification of treaties with sovereign nations was eventually undermined.

### 6. According to the passage, in the case of *Lone Wolf v. Hitchcock* the Supreme Court decided that

- (A) disputes among native American tribes over the ownership of tribal lands were beyond the jurisdiction of the Court
- (B) Congress had the power to allow outsiders to settle on lands occupied by a Native American tribe without obtaining permission from that tribe
- (C) Congress had exceeded its authority in attempting to exercise sole power over native American affairs
- (D) the United States was not legally bound by the provisions of treaties previously concluded with Native American tribes
- (E) formal agreements between the federal government and Native American tribes should be treated as ordinary legislation rather than as treaties

## Passage 66

Some historians contend that conditions in the United States during the Second World War gave rise to a dynamic wartime alliance between trade unions and the African American community, an alliance that advanced the cause of civil rights. They conclude that the postwar demise of this vital alliance constituted a lost opportunity for the civil rights movement that followed the war. Other scholars, however, have portrayed organized labor as defending all along the relatively privileged position of White workers relative to African American workers. Clearly, these two perspectives are not easily reconcilable, but the historical reality is not reducible to one or the other.

Unions faced a choice between either maintaining the prewar status quo or promoting a more inclusive approach that sought for all members the right to participate in the internal affairs of unions, access to skilled and high-paying positions within the occupational hierarchy, and protection against management's arbitrary authority in the workplace. While union representatives often voiced this inclusive ideal, in practice unions far more often favored entrenched interests. The accelerating development of the civil rights movement following the Second World War exacerbated the unions' dilemma, forcing trade unionists to confront contradictions in their own practices.

### 1. The passage is primarily concerned with

- A. providing a context within which to evaluate opposing viewpoints about a historical phenomenon
- B. identifying a flawed assumption underlying one interpretation of a historical phenomenon
- C. assessing the merits and weaknesses of a controversial theory about a historical phenomenon
- D. discussing the historical importance of the development of a wartime alliance
- E. evaluating evidence used to support a particular interpretation of a historical phenomenon

### 2. According to the passage, the historians (at the beginning) and the scholars (highlight) disagree about the

- A. contribution made by organized labor to the war effort during the Second World War
- B. issues that union members considered most important during the Second World War
- C. relationship between unions and African Americans during the Second World War
- D. effect of the Second World War on the influence of unions in the workplace
- E. extent to which African Americans benefited from social and political changes following the Second World War

### 3. Which of the following best describes the purpose of the first sentence (highlight) in the second paragraph in the passage?

- A. To summarize a situation confronted by unions during the Second World War
- B. To summarize the role of unions in the workplace during the Second World War
- C. To explain the philosophy supported by most unions during the Second World War
- D. To assess the effect of the growth of the civil rights movement on unions during the Second World War
- E. To present a criticism of the unions' approach to representing workers during the Second World War

### 4. Which of the following best summarizes the opinion of the author of the passage regarding the two points of view presented in the first paragraph (highlight) ?

- A. Neither point of view reflects the views of certain African American historians on trade unions during the Second World War.
- B. Neither point of view reflects the full complexity of the historical reality.
- C. One point of view is based on more reliable research than is the other.
- D. Both points of view have misinterpreted recent research on trade unions during the Second World War.
- E. The two points of view can be readily harmonized into a coherent interpretation.

### 5. The "unions' dilemma" (highlight) mentioned in the highlighted text can best be described as the question of whether or not to

- A. pressure management to create more skilled and high-paying positions
- B. fight for greater union participation in management decisions
- C. include minority workers in their membership
- D. extend full rights and benefits to all their members
- E. emphasize the recruitment of new members over serving the needs of current members

### 6. Which of the following best summarizes a point of view attributed to the historians mentioned in the highlighted text? ('Some historians, line 1')

- A. Trade unions were weakened during the Second World War by their failure to establish a productive relationship with the African American community.
- B. Trade unions and the African American community forged a lasting relationship after the Second World War based on their wartime alliance.
- C. The cause of civil rights was not significantly affected by the wartime alliance between trade unions and the African American community.
- D. The civil rights movement that followed the Second World War forced trade unions to confront contradictions in their practices.
- E. The civil rights movement would have benefited from a postwar continuation of the wartime alliance between trade unions and the African American community

## Passage 67

Scientists studying the physiology of dinosaurs have long debated whether dinosaurs were warm- or cold-blooded. Those who suspect they were warm-blooded point out that dinosaur bone is generally fibro-lamellar in nature; because fibro-lamellar bone is formed quickly, the bone fibrils, or filaments, are laid down haphazardly. Consistent with their rapid growth rate, warm-blooded animals, such as birds and mammals, tend to produce fibro-lamellar bone, whereas reptiles, which are slow-growing and cold-blooded, generally produce bone in which fibrils are laid down parallel to each other. Moreover, like the bone of birds and mammals, dinosaur bone tends to be highly vascularized, or filled with blood vessels. These characteristics, first recognized in the 1930's, were documented in the 1960's by de Ricqlès, who found highly vascularized, fibro-lamellar bone in several groups of dinosaurs. In the 1970's, Bakker cited these characteristics as evidence for the warm-bloodedness of dinosaurs. Although de Ricqlès urged caution, arguing for an intermediate type of dinosaur physiology, a generation of paleontologists has come to believe that dinosaur bone is mammalianlike.

In the 1980's, however, Bakker's contention began to be questioned, as a number of scientists found growth rings in the bones of various dinosaurs that are much like those in modern reptiles. Bone growth in reptiles is periodic in nature, producing a series of concentric rings in the bone, not unlike the growth rings of a tree. Recently, Chinsamy investigated the bones of two dinosaurs from the early Jurassic period (208-187 million years ago), and found that these bones also had growth rings; however, they were also partially fibro-lamellar in nature. Chinsamy's work raises a question central to the debate over dinosaur physiology: did dinosaurs form fibro-lamellar bone because of an innately high metabolic rate associated with warm-bloodedness or because of periods of unusually fast growth that occurred under favorable environmental conditions? (Although modern reptiles generally do not form fibro-lamellar bone, juvenile crocodiles raised under optimal environmental conditions do.) This question remains unanswered; indeed, taking all the evidence into account, one cannot make a definitive statement about dinosaur physiology on the basis of dinosaur bone. It may be that dinosaurs had an intermediate pattern of bone structure because their physiology was neither typically reptilian, mammalian, nor avian.

**1. The author of the passage would be most likely to agree that the "caution" (line 29) urged by de Ricqlès regarding claims about dinosaur physiology was**

- (A) unjustified by the evidence available to de Ricqlès
- (B) unnecessary, given the work done by Bakker and his followers

- (C) indicative of the prevailing scientific opinion at the time
- (D) warranted, given certain subsequent findings of other scientists
- (E) influential in the recent work of Chinsamy

**2. The primary purpose of the passage is to**

- (A) discuss the influence on other scientists of Bakker's argument concerning the warm-bloodedness of dinosaurs
- (B) provide evidence that supports the claim that dinosaurs were cold-blooded
- (C) challenge the contention that dinosaur bone tissue is innately fibro-lamellar
- (D) evaluate the claim that dinosaur bone tissue provides evidence for the warmbloodedness of dinosaurs
- (E) resolve the disagreement between de Ricqlès and Bakker over the nature of dinosaur physiology

**3. According to the passage, the discovery of growth rings in the bones of certain dinosaurs served to undermine which of the following claims?**

- (A) That modern reptiles are related to dinosaurs
- (B) That bone growth in dinosaurs was periodic in nature
- (C) That dinosaurs were warm-blooded
- (D) That dinosaurs had an intermediate type of physiology
- (E) That fibro-lamellar bone is the product of a rapid growth rate

**4. The author of the passage mentions bone growth patterns in juvenile crocodiles most likely in order to**

- (A) provide support for the argument that reptiles are not related to dinosaurs
- (B) undermine the claim that most reptiles are slow-growing
- (C) offer an explanation as to why juvenile crocodiles differ from most modern reptiles
- (D) suggest the juvenile crocodiles have a type of physiology intermediate between-f mammals and that of reptiles
- (E) suggest that the presence of fibro-lamellar bone does not resolve the debate over dinosaur physiology

**5. The passage suggests that, unlike Bakker, de Ricqlès believed which of the following about the highly vascularized, fibro-lamellar bone mentioned in the highlighted text?**

- A)It was a type of bone found only in a small group of dinosaurs.
- B)It had characteristics that were inconsistent with a growth rate as rapid as that of mammals.
- C)It did not provide sufficiently compelling evidence for warm-bloodedness in dinosaurs.
- D)It was highly vascularized but not truly fibro-lamellar in nature.
- E)It supported the claim that bone growth in dinosaurs was periodic in nature.

## Passage 68

For many years, historians thought that the development of capitalism had not faced serious challenges in the United States. Writing in the early twentieth century, **Progressive historians** sympathized with the battles waged by farmers and small producers against large capitalists in the late nineteenth century, but they did not question the widespread acceptance of laissez-faire (unregulated) capitalism throughout American history. Similarly, Louis Hartz, who sometimes disagreed with the Progressives, argued that Americans accepted laissez-faire capitalism without challenge because they lacked a feudal, precapitalist past. Recently, however, some **scholars** have argued that even though laissez-faire became the prevailing ethos in nineteenth-century America, it was not accepted without struggle. Laissez-faire capitalism, they suggest, clashed with existing religious and communitarian **norms** that imposed moral constraints on acquisitiveness to protect the weak from the predatory, the strong from corruption, and the entire culture from materialist excess. Buttressed by mercantilist notions that government should be both regulator and promoter of economic activity, these norms persisted long after the American Revolution helped unleash the economic forces that produced capitalism. These scholars argue that even in the late nineteenth century, with the government's role in the economy considerably diminished, laissez-faire had not triumphed completely. Hard times continued to revive popular demands for regulating business and softening the harsh edges of laissez-faire capitalism.

1. The primary purpose of the passage is to
  - (A) reveal the underlying similarities of certain arguments regarding the development of capitalism in the United States
  - (B) synthesize two competing arguments regarding the development of capitalism in the United States
  - (C) defend an established argument regarding the development of capitalism in the United States
  - (D) summarize a scholarly refutation of an argument regarding the development of capitalism in the United States
  - (E) discuss a new methodology for the study of the development of capitalism in the United States
2. According to the passage, the **Progressive historians** mentioned in line 5 and the scholars mentioned in line 17 disagree with regard to which of the following?
  - (A) Whether laissez-faire became the predominant ethos in the nineteenth-century United States
  - (B) Whether moral restraints on acquisitiveness were necessary in the nineteenth-century United States
  - (C) The economic utility of mercantilist notions of government
  - (D) The nature of the historical conditions necessary for the development of laissez-faire capitalism in the nineteenth-century United States
  - (E) The existence of significant opposition to the development of laissez-faire capitalism in the nineteenth-century United States
3. The passage suggests that the **scholars** mentioned in line 17 would agree with which of the following statements regarding the "**norms**" mentioned in line 23?
  - (A) They provided a primary source of opposition to the development of laissez-faire capitalism in the United States in the nineteenth century.
  - (B) Their appeal was undermined by difficult economic times in the United States at the end of the nineteenth century.
  - (C) They disappeared in the United States in the late nineteenth century because of the triumph of laissez-faire capitalism.
  - (D) They facilitated the successful implementation of mercantilist notions of government in the United States in the nineteenth-century.
  - (E) They are now recognized by historians as having been an important part of the ideology of the American Revolution.

## Passage 69

Even more than mountainside slides of mud or snow, naturally occurring forest fires promote the survival of aspen trees. Aspens' need for fire may seem illogical since aspens are particularly vulnerable to fires; whereas **the bark of most trees** consists of dead cells, the aspen's bark is a living, functioning tissue that—along with the rest of the tree—succumbs quickly to fire.

The explanation is that each aspen, while appearing to exist separately as a single tree, is in fact only the stem or shoot of a far larger organism. A group of thousands of aspens can actually constitute a single organism, called a clone, that shares an interconnected root system and a unique set of genes. Thus, when one aspen—a single stem—dies, the entire clone is affected. While alive, a stem sends hormones into the root system to suppress formation of further stems. But when the stem dies, its hormone signal also ceases. If a clone loses many stems simultaneously, the resulting hormonal imbalance triggers a huge increase in new, rapidly growing shoots that can outnumber the ones destroyed. An aspen grove needs to experience fire or some other **disturbance** regularly, or it will fail to regenerate and spread. Instead, coniferous trees will invade the aspen grove's borders and increasingly block out sunlight needed by the aspens.

1. The primary purpose of the passage is to explain the
  - (A) qualities that make a particular organism unique
  - (B) evolutionary change undergone by a particular organism
  - (C) reasons that a phenomenon benefits a particular organism
  - (D) way in which two particular organisms compete for a resource
  - (E) means by which a particular organism has been able to survive in a barren region
2. It can be inferred from the passage that when aspen groves experience a **"disturbance"**, such a disturbance
  - (A) leads to a hormonal imbalance within an aspen clone
  - (B) provides soil conditions that are favorable for new shoots
  - (C) thins out aspen groves that have become overly dense
  - (D) suppresses the formation of too many new aspen stems
  - (E) protects aspen groves by primarily destroying coniferous trees rather than aspens
3. The author of the passage refers to **"the bark of most trees"** most likely in order to emphasize the
  - (A) vulnerability of aspens to damage from fire when compared to other trees
  - (B) rapidity with which trees other than aspens succumb to destruction by fire
  - (C) relatively great degree of difficulty with which aspens catch on fire when compared to other trees
  - (D) difference in appearance between the bark of aspens and that of other trees
  - (E) benefits of fire to the survival of various types of trees
4. According to the passage, which of the following would occur if an aspen failed to regenerate periodically?
  - (A) Individual aspens would cease to produce hormones.
  - (B) Individual aspens would grow outward instead of upward.
  - (C) The root system of the grove's clone would die.
  - (D) The grove would lose its access to sunlight.
  - (E) Soil conditions in the grove would become unfavorable for the growth of aspens.

### Passage 70

Solar ponds are bodies of water in which circulation is incomplete and there is a very high salt concentration that increases with depth. This vertical change in salinity serves to trap heat because concentrated brine in the lowest water level acts as a collector and storage area for solar heat, while the less saline, lighter water at the upper levels provides insulation. Heat is thus retained in the depths.

An artificial pond of this type has been constructed on the western shore of the Dead Sea in Israel in order to test its suitability as a source of low-grade heat for conversion into electricity. An immediate threat to the success of the venture was the growth of algae. Water in solar ponds must be kept maximally transparent to allow penetration of light to the deep storage area. Therefore, any particles of matter in the water, such as algae cells, that scatter or absorb light will interfere with the collection of heat.

One proposed method of controlling the algae was the application of an algicide. However, the Dead Sea is a closed body of water without any outlet and as such is very easily contaminated. Extensive use of chemicals in numerous future full-scale solar ponds would lead to such contamination of the Dead Sea, which now enjoys a lucrative tourist trade.

A recent experiment has supplied a more promising method for controlling the algae. To repress the algae cells' capacity for accommodating themselves to environmental changes, the water in the solar pond was first made more saline through evaporation and then diluted by a rapid inflow of fresh water. This shock reduced the cells' ability to regulate the movement of water through their membranes. They rapidly absorbed water, resulting in distortions of shape, increase in volume, and impairment to motility. Their buoyancy adversely affected, the cells sank to the bottom of the pond, where they encountered the hot waters of the storage layer and were destroyed. This method allows for effective control of nuisance algae while leaving solar ponds as one of the cleanest technologies providing energy for human use.

1) Which of the following, if true, would seriously undermine the validity of the conclusions drawn from the experiment described in the last paragraph of the passage?

- (A) The algae cells that sank to the bottom of the pond were destroyed only after a time lag of twenty-four hours.
- (B) The lateral motility of the algae cells that sank to the bottom of the pond was not impaired.
- (C) The water with which the artificial solar pond was diluted contained microorganisms that kill algae.
- (D) The algae cells that sank to the bottom of the pond were actually killed by the rapid change in pressure.
- (E) The higher salinity brought about through evaporation increased the transparency of the upper levels of water in the pond.

### Passage 71

The storms most studied by climatologists have been those that are most easily understood by taking atmospheric measurements. Hurricanes and tornadoes, for example, are spatially confined, the forces that drive them are highly concentrated, and they have distinctive forms and readily quantifiable characteristics. Consequently, data about them are abundant, and their behavior is relatively well understood, although still difficult to predict.

Hurricanes and tornadoes are also studied because they are highly destructive storms, and knowledge about their behavior can help minimize injury to people and property. But other equally destructive storms have not been so thoroughly researched, perhaps because they are more difficult to study. A primary example is the northeaster, a type of coastal storm that causes significant damage along the eastern coast of North America. Northeasters, whose diffuse nature makes them difficult to categorize, are relatively weak low-pressure systems with winds that rarely acquire the strength of even the smallest hurricane. Although northeasters are perceived to be less destructive than other storms, the high waves associated with strong northeasters can cause damage comparable to that of a hurricane, because they can affect stretches of coast more than 1,500 kilometers long, whereas hurricanes typically threaten a relatively small ribbon of coastline—roughly 100 to 150 kilometers.

1. The primary purpose of the passage is to
  - (A) evaluate the relative amounts of damage caused by different storm types
  - (B) describe the difficulties of classifying destructive storms by type
  - (C) examine the relationship between wave height and the destructive potential of storms
  - (D) discuss a theory that explains the origins of violent storms
  - (E) discuss reasons why certain types of storms receive more study than others
2. According to the passage, which of the following is true of northeasters?
  - (A) They have only recently been identified as a distinct storm type.
  - (B) They are more destructive than tornadoes.
  - (C) They are low-pressure systems.
  - (D) They affect a relatively small segment of the eastern coast of North America.
  - (E) Their winds are typically as strong as those of small hurricanes.
3. Which of the following can be inferred from the passage about storms that lend themselves to atmospheric measurements?
  - (A) They are more likely than other storms to be studied by climatologists.
  - (B) They are likely to be less highly concentrated than are other storms.
  - (C) They are likely to be more difficult to predict than are other storms.
  - (D) They occur less frequently along the eastern coast of North America than in other areas.
  - (E) They tend to affect larger areas than do other storms.
4. With which of the following statements about northeasters would the author of the passage most likely agree?
  - (A) Even increased knowledge about the behavior of northeasters is unlikely to reduce the injury to people and property that they cause.
  - (B) Northeasters are deserving of closer study by climatologists than they have received in the past.
  - (C) Damage caused by northeasters is less easily assessed than damage caused by hurricanes.
  - (D) Northeasters are more difficult to study than are hurricanes and tornadoes because northeasters occur less often.
  - (E) Northeasters are too diffuse to warrant close study by climatologists.

## Passage 72

Earth's surface consists of rigid plates that are constantly shifting and jostling one another. Plate movements are the surface expressions of motions in the mantle—the thick shell of rock that lies between Earth's crust and its metallic core. Although the hot rock of the mantle is a solid, under the tremendous pressure of the crust and overlying rock of the mantle, it flows like a viscous liquid. The mantle's motions, analogous to those in a pot of boiling water, cool the mantle by carrying hot material to the surface and returning cooler material to the depths. When the edge of one plate bends under another and its cooler material is consumed in the mantle, volcanic activity occurs as molten lava rises from the downgoing plate and erupts through the overlying one.

Most volcanoes occur at plate boundaries. However, certain "misplaced" volcanoes far from plate edges result from a second, independent mechanism that cools the deep interior of Earth. Because of its proximity to Earth's core, the rock at the base of the mantle is much hotter than rock in the upper mantle. The hotter the mantle rock is, the less it resists flowing. Reservoirs of this hot rock collect in the base of the mantle. When a reservoir is sufficiently large, a sphere of this hot rock forces its way up through the upper mantle to Earth's surface, creating a broad bulge in the topography. The "mantle plume" thus formed, once established, continues to channel hot material from the mantle base until the reservoir is emptied. The surface mark of an established plume is a hot spot—an isolated region of volcanoes and uplifted terrain located far from the edge of a surface plate. Because the source of a hot spot remains fixed while a surface plate moves over it, over a long period of time an active plume creates a chain of volcanoes or volcanic islands, a track marking the position of the plume relative to the moving plate. The natural history of the Hawaiian island chain clearly shows the movement of the Pacific plate over a fixed plume.

1. The passage is primarily concerned with discussing
  - (A) the composition of Earth's mantle
  - (B) how the Hawaiian Islands were created
  - (C) what causes Earth's surface plates to move
  - (D) two different mechanisms by which volcanoes are formed
  - (E) why most volcanoes occur at plate boundaries
2. It can be inferred from the passage that a chain of volcanoes created by a mantle plume would most likely be characterized by
  - (A) a curved outline
  - (B) constituent volcanoes that differ from each other in age
  - (C) occurrence near a plate boundary where one plate bends under another
  - (D) appearance near many other volcanic chains
  - (E) rocks with a wide range of chemical composition
3. The author's reference to the Hawaiian Islands serves primarily to
  - (A) provide an example of a type of volcanic activity that does not occur elsewhere
  - (B) identify the evidence initially used to establish that the Pacific plate moves
  - (C) call into question a theory about the source of the volcanoes that created the Hawaiian Islands
  - (D) illustrate the distance from plate edges at which volcanoes typically appear
  - (E) provide an example of how mantle plumes manifest themselves on Earth's surface
4. According to the passage, a hot spot on Earth's surface is an indication of which of the following?
  - (A) An untapped reservoir of hot rock in the base of the mantle
  - (B) Volcanic activity at the edge of a plate
  - (C) Solid mantle rock under tremendous pressure
  - (D) The occurrence of a phenomenon unique to the Pacific plate
  - (E) A plume of hot mantle rock originating near Earth's core

### Passage 73

The Black Death, a severe epidemic that ravaged fourteenth century Europe, has intrigued scholars ever since Francis Gasquet's 1893 study contending that this epidemic greatly intensified the political and religious upheaval that ended the Middle Ages. Thirty-six years later, historian George Coulton agreed but, paradoxically, attributed a silver lining to the Black Death: prosperity engendered by diminished competition for food, shelter, and work led survivors of the epidemic into the Renaissance and subsequent rise of modern Europe.

In the 1930s, however, Evgeny Kosminsky and other Marxist historians claimed the epidemic was merely an ancillary factor contributing to a general agrarian crisis stemming primarily from the inevitable decay of European feudalism. In arguing that this decline of feudalism was economically determined, the Marxist asserted that the Black Death was a relatively insignificant factor. This became the prevailing view until after the Second World War, when studies of specific regions and towns revealed astonishing mortality rates ascribed to the epidemic, thus restoring the central role of the Black Death in history.

This central role of the Black Death (traditionally attributed to bubonic plague brought from Asia) has been recently challenged from another direction. Building on bacteriologist John Shrewsbury's speculations about mislabeled epidemics, zoologist Graham Twigg employs urban case studies suggesting that the rat population in Europe was both too sparse and insufficiently migratory to have spread plague. Moreover, Twigg disputes the traditional trade-ship explanation for plague transmissions by extrapolating from data on the number of dead rats aboard Nile sailing vessels in 1912. The Black Death, which he conjectures was anthrax instead of bubonic plague, therefore caused far less havoc and fewer deaths than historians typically claim.

Although correctly citing the exacting conditions needed to start or spread bubonic plague, Twigg ignores virtually a century of scholarship contradictory to his findings and employs faulty logic in his single-minded approach to the Black Death. His speculative generalizations about the numbers of rats in medieval Europe are based on isolated studies unrepresentative of medieval conditions, while his unconvincing trade-ship argument overlooks land-based caravans, the overland migration of infected rodents, and the many other animals that carry plague.

#### 1) The passage is primarily concerned with

- (A) demonstrating the relationship between bubonic plague and the Black Death
- (B) interpreting historical and scientific works on the origins of the Black Death
- (C) employing the Black Death as a case study of disease transmission in medieval Europe
- (D) presenting aspects of past and current debate on the historical importance of the Black Death
- (E) analyzing the differences between capitalist and Marxist interpretations of the historical significance of the Black Death

#### 2) Which of the following statements is most compatible with Kosminsky's approach to history, as it is presented in the passage?

- (A) The Middle Ages were ended primarily by the religious and political upheaval in fourteenth century Europe.
- (B) The economic consequences of the Black Death included increased competition for food, shelter, and work.
- (C) European history cannot be studied in isolation from that of the rest of the world.
- (D) The number of deaths in fourteenth-century Europe has been greatly exaggerated by other historians.
- (E) The significance of the Black Death is best explained within the context of evolving economic systems.

#### 3) The passage suggests that Twigg believes that rats could not have spread the Black Death unless which of the following were true?

- (A) The rats escaped from ships that had been in Asia.
- (B) The rats were immune to the diseases that they carried.
- (C) The rat population was larger in medieval Europe than Twigg believes it actually was.
- (D) The rat population primarily infested densely populated areas.
- (E) The rats interacted with other animals that Twigg believes could have carried plague.

## Passage 74

Dendrochronology, the study of tree-ring records to glean information about the past, is possible because each year a tree adds a new layer of wood between the existing wood and the bark. In temperate and subpolar climates, cells added at the growing season's start are large and thin-walled, but later the new cells that develop are smaller and thick-walled; the growing season is followed by a period of dormancy. When a tree trunk is viewed in cross section, a boundary line is normally visible between the small-celled wood added at the end of the growing season in the previous year and the large-celled spring wood of the following year's growing season. The annual growth pattern appears as a series of larger and larger rings. In wet years rings are broad; during drought years they are narrow, since the trees grow less. Often, ring patterns of dead trees of different, but overlapping, ages can be correlated to provide an extended index of past climate conditions.

However, trees that grew in areas with a steady supply of groundwater show little variation in ring width from year to year; these "complacent" rings tell nothing about changes in climate. And trees in extremely dry regions may go a year or two without adding any rings, thereby introducing **uncertainties** into the count. Certain species sometimes add more than one ring in a single year, when growth halts temporarily and then starts again.

1. In the highlighted text, "**uncertainties**" refers to
  - (A) dendrochronologists' failure to consider the prevalence of erratic weather patterns
  - (B) inconsistencies introduced because of changes in methodology
  - (C) some tree species' tendency to deviate from the norm
  - (D) the lack of detectable variation in trees with complacent rings
  - (E) the lack of perfect correlation between the number of a tree's rings and its age
2. The passage suggests which of the following about the ring patterns of two trees that grew in the same area and that were of different, but overlapping, ages?
  - (A) The rings corresponding to the overlapping years would often exhibit similar patterns.
  - (B) The rings corresponding to the years in which only one of the trees was alive would not reliably indicate the climate conditions of those years.
  - (C) The rings corresponding to the overlapping years would exhibit similar patterns only if the trees were of the same species.
  - (D) The rings corresponding to the overlapping years could not be complacent rings.
  - (E) The rings corresponding to the overlapping years would provide a more reliable index of dry climate conditions than of wet conditions.
3. The passage is primarily concerned with
  - (A) evaluating the effect of climate on the growth of trees of different species
  - (B) questioning the validity of a method used to study tree-ring records
  - (C) explaining how climatic conditions can be deduced from tree-ring patterns
  - (D) outlining the relation between tree size and cell structure within the tree
  - (E) tracing the development of a scientific method of analyzing tree-ring patterns

### Passage 75

Companies that must determine well in advance of the selling season how many units of a new product to manufacture often underproduce products that sell well and have overstocks of others. The increased incidence in recent years of mismatches between production and demand seems ironic, since point-of-sale scanners have improved data on consumers' buying patterns and since flexible manufacturing has enabled companies to produce, cost-effectively, small quantities of goods. This type of manufacturing has greatly increased the number of new products introduced annually in the United States. However, frequent introductions of new products have two problematic side effects. For one, they reduce the average lifetime of products; more of them are neither at the beginning of their life (when prediction is difficult) or at the end of their life (when keeping inventory is expensive because the products will soon become obsolete). For another, as new products proliferate, demand is divided among a growing number of stock-keeping units (SKU's). Even though manufacturers and retailers can forecast aggregate demand with some certainty, forecasting accurately how that demand will be distributed among the many SKU's they sell is difficult. For example, a company may be able to estimate accurately the aggregate number of shoes it will sell, but it may be uncertain about which specific types of shoes will sell more than other types.

1. Which of the following most accurately describes the function of the last sentence in the passage (Last 2 lines)?
  - (A) To cite a situation in which the aggregate demand is more important than the distribution of demand among SKU's
  - (B) To refute an assertion about the side effects of flexible manufacturing
  - (C) To illustrate an assertion about companies' ability to forecast demand
  - (D) To provide an example of ways in which companies address the difficulties of forecasting demand
  - (E) To note an exception to the author's assertion about distributing demand among SKU's
2. The passage suggests which of the following about divided demand among a growing number of SKU's?
  - (A) It has increased the average lifetime of products.
  - (B) It has resulted from retailer's attempts to predict demand more accurately and avoid both understocks and overstocks.
  - (C) It has decreased the use of flexible manufacturing by companies.
  - (D) It has not increased the expense of keeping inventory of certain products.
  - (E) It has not prevented companies from predicting aggregate demand with some certainty.
3. According to the passage, which of the following has led to growth in the number of new products introduced in the United States each year?
  - (A) Reduced average lifetime of products
  - (B) Increased ability to forecast aggregate demand
  - (C) More cost-effective ways of keeping inventory for products
  - (D) Cost-effective production of small quantities of goods
  - (E) Increased ability to divide demand among a number of SKU's and to forecast how that demand will be distributed among those SKU'

## Passage 76

Research data indicate that there is a great deal of poverty in the United States among single parent families headed by women. This problem could result from the fact that women's wages are only 60 percent of men's. Some economists believe that rigorous enforcement of existing equal pay laws would substantially decrease this wage inequity. But equal pay laws are ineffectual when women and men are concentrated in different occupations because such laws require only that women and men doing the same jobs be paid the same. Since gender concentration exists (for example, 80 percent of clerical workers are women), other economists argue that a comparable worth standard, which would mandate that women and men in any jobs that require comparable training and responsibility be paid the same, should be applied instead. But some **policy analysts** assert that, although comparable worth would virtually equalize male and female wages, many single parent families headed by women would remain in poverty because many men earn wages that are below the poverty line. These policy analysts believe that the problem is not caused primarily by wage inequity but rather by low wages coupled with single parent hood, regardless of sex. As a solution, they challenge the government's assumption that a family's income should depend primarily on wages and urge the government to provide generous wage supplements (child and housing allowances) to single parents whose wages are low.

1. The passage suggests that the United States government's policy towards providing wage supplements to parents whose wages are low is  
(A) considered ill advised by most economists who have studied the issue  
(B) based on assumptions about the appropriate sources of family income  
(C) under revision in response to criticism from some policy analysts  
(D) capable of eliminating wage inequality but not of raising incomes for both women and men  
(E) applicable to single-parent families headed by women but not to single-parent families headed by men

2. Which of the following is most clearly an example of the policy advocated by the policy analysts mentioned in line 8 ?

- (A) A government provides training to women who wish to move out of occupations in which women are concentrated.
- (B) A government supports research that analyzes the connection between wage inequality and poverty among single-parent families headed by women.
- (C) A government surveys wages annually to make certain that women and men in the same jobs receive the same pay.
- (D) A government analyzes jobs in terms of the education and responsibility they require and publishes a list of jobs that should be considered equivalent for wage purposes.
- (E) A government provides large rent subsidies to single parents whose wages are less than half the average worker's wage.

3. According to the passage, some economists believe that, in the United States, there would be smaller differences between the wages of women and men who do the same jobs if

- (A) equal pay laws were enforced more fully
- (B) more stringent equal pay laws were passed
- (C) a more rigorous comparable worth standard were developed and applied
- (D) more men entered the occupations in which women are concentrated
- (E) women received the same kind and amount of job training that men receive

## Passage 77

Is it possible to decrease inflation without causing a recession and its concomitant increase in unemployment? The orthodox answer is “no.” whether they support the “inertia” theory of inflation (that today’s inflation rate is caused by yesterday’s inflation, the state of the economic cycle, and external influences such as import prices) or the “rational expectations” theory (that inflation is caused by workers’ and employers’ expectations, coupled with a lack of credible monetary and fiscal policies), most economists agree that tight monetary and fiscal policies, which cause recessions, are necessary to decelerate inflation. They point out that in the 1980’s, many European countries and the United States conquered high (by these countries’ standards) inflation, but only by applying tight monetary and fiscal policies that sharply increased unemployment. Nevertheless, some governments’ policymakers insist that direct controls on wages and prices, without tight monetary and fiscal policies, can succeed in decreasing inflation. Unfortunately, because this approach fails to deal with the underlying causes of inflation, wage and price controls eventually collapse, the hitherto-repressed inflation resurfaces, and in the meantime, though the policymakers succeed in avoiding a recession, a frozen structure of relative prices imposes distortions that do damage to the economy’s prospects for long-term growth.

1. The passage suggests that the high inflation in the United States and many European countries in the 1980’s differed from inflation elsewhere in which of the following ways?
  - (A) It fit the rational expectations theory of inflation but not the inertia theory of inflation.
  - (B) It was possible to control without causing a recession.
  - (C) It was easier to control in those countries by applying tight monetary and fiscal policies than it would have been elsewhere.
  - (D) It was not caused by workers’ and employers’ expectations.
  - (E) It would not necessarily be considered high elsewhere.
2. Which of the following, if true, would most strengthen the author’s conclusion about the use of wage and price controls?
  - (A) Countries that repeatedly use wage and price controls tend to have lower long-term economic growth rates than do other countries.
  - (B) Countries that have extremely high inflation frequently place very stringent controls on wages and prices in an attempt to decrease the inflation.
  - (C) Some countries have found that the use of wage and price controls succeeds in decreasing inflation but also causes a recession.
  - (D) Policymakers who advocate the use of wage and price controls believe that these controls will deal with the underlying causes of inflation.
  - (E) Policymakers who advocate the use of wage and price controls are usually more concerned about long-term economic goals than about short-term economic goals.
3. The primary purpose of the passage is to
  - (A) apply two conventional theories.
  - (B) examine a generally accepted position
  - (C) support a controversial policy
  - (D) explain the underlying causes of a phenomenon
  - (E) propose an innovative solution

### Passage 78

More selective than most chemical pesticides in that they ordinarily destroy only unwanted species, biocontrol agents (such as insects, fungi, and viruses) eat, infect, or parasitize targeted plant or animal pests. However, biocontrol agents can negatively affect nontarget species by, for example, competing with them for resources: a biocontrol agent might reduce the benefits conferred by a desirable animal species by consuming a plant on which the animal prefers to lay its eggs. Another example of indirect negative consequences occurred in England when a virus introduced to control rabbits reduced the amount of open ground (because large rabbit populations reduce the ground cover), in turn reducing underground ant nests and triggering the extinction of a blue butterfly that had depended on the nests to shelter its offspring. The paucity of known extinctions or disruptions resulting from indirect interactions may reflect not the infrequency of such mishaps but rather the failure to look for or to detect them: most organisms likely to be adversely affected by indirect interactions are of little or no known commercial value and the events linking a biocontrol agent with an adverse effect are often unclear. Moreover, determining the potential risks of biocontrol agents before they are used is difficult, especially when a nonnative agent is introduced, because, unlike a chemical pesticide, a biocontrol agent may adapt in unpredictable ways so that it can feed on or otherwise harm new hosts.

#### 1. The passage is primarily concerned with

- (A) explaining why until recently scientists failed to recognize the risks presented by biocontrol agents.
- (B) emphasizing that biocontrol agents and chemical pesticides have more similarities than differences.
- (C) suggesting that only certain biocontrol agents should be used to control plant or animal pests.
- (D) arguing that biocontrol agents involve risks, some of which may not be readily discerned.
- (E) suggesting that mishaps involving biocontrol agents are relatively commonplace.

#### 2. The passage suggests that the author would be most likely to agree with which of the following statements about the use of biocontrol agents?

- (A) Biocontrol agent should be used only in cases where chemical pesticides have proven ineffective or overly dangerous.
- (B) Extinctions and disruptions resulting from the use of biocontrol agents are likely to have increasingly severe commercial consequences.
- (C) The use of biocontrol agents does not require regulation as stringent as that required by the use of chemical pesticides.
- (D) The use of biocontrol agents may even finally supersede the use of chemical pesticides in controlling unwanted species.

(E) The risks of using native biocontrol agents may be easier to predict than the risks of using nonnative biocontrol agents.

#### 3. Which of the following is mentioned in the passage as an indirect effect of using a biocontrol agent?

- (A) Reduction of the commercial value of a desirable animal species
- (B) An unintended proliferation of a nontarget animal species
- (C) An unforeseen mutation in a target species
- (D) Diminution of the positive effects conferred by a nontarget animal species
- (E) Competition for resources with a larger species

#### 4. The example presented by the author in highlighted text most clearly serves to illustrate

- (A) a situation in which a species is less vulnerable to biocontrol agents than it would have been to chemical pesticides.
- (B) a way in which the introduction of a biocontrol agent can affect a nontarget species.
- (C) a nonnative agent's adapting in an unpredictable way that results in damage to a new host.
- (D) The contention that biocontrol agents can harm nontarget species by competing with them for resources.
- (E) the way in which indirect consequences from the use of biocontrol agents are most likely to occur.

#### 5. According to the passage, which of the following is a concern that arises with biocontrol agents but not with chemical pesticides?

- (A) Biocontrol agents are likely to destroy desirable species as well as undesirable ones.
- (B) Biocontrol agents are likely to have indirect as well as direct adverse effects on nontarget species.
- (C) Biocontrol agents may change in unforeseen ways and thus be able to damage new hosts.
- (D) Biocontrol agents may be ineffective in destroying targeted species.
- (E) Biocontrol agents may be effective for only a short period of time.

#### 6. The passage suggests which of the following about the blue butterfly mentioned in the highlighted text?

- (A) The blue butterfly's survival was indirectly dependent on sustaining a rabbit population of a particular size.
- (B) The blue butterfly's survival was indirectly dependent on sustaining large amounts of vegetation in its habitat.
- (C) The blue butterfly's survival was threatened when the ants began preying on its offspring.
- (D) The blue butterfly was infected by the virus that had been intended to control rabbit populations.
- (E) The blue butterfly was adversely affected by a biocontrol agent that competed with it for resources.

## Passage 79

In recent years, a class of drugs known as COX-2 inhibitors has gotten much publicity for the drugs' power to relieve inflammation and pain. These drugs are relatively new to the pharmaceutical industry, their mechanisms of action having been discovered only in 1971. That year, John Vane discovered the relationship between nonsteroidal anti-inflammatory drugs, such as aspirin, and a group of molecules, called prostaglandins, responsible for producing the sensation of pain in the human body, among other functions.

Prostaglandins were first discovered in the 1930s and are now known to be generated by most mammalian tissues in response to external stimuli. Unlike classical hormones that are synthesized in one tissue but act on a distant one, prostaglandins act on the cells that produce them or on cells located close to the prostaglandins' cells of origin. Aspirin alleviates pain by inhibiting the function of an enzyme called cyclooxygenase or COX; this inhibition prevents the production of prostaglandins. The three forms of this enzyme, COX-1, COX-2, and COX-3, all stimulate the production of prostaglandins, but each serves a different purpose. COX-1 functions to protect the stomach from irritating gastric acids. COX-2 functions to induce inflammation in injured tissue and COX-3 functions to control the sensation of pain. Aspirin and other similar drugs, such as naproxen, inhibit both COX-1 and COX-2, sometimes producing or aggravating stomach ulcers in patients who take them.

In order to eliminate the side effects of aspirin and related drugs, several pharmaceutical companies in the 1990s developed drugs that inhibited only COX-2. However, side effects almost always cropped up, even after clinical trials that seemed to indicate none. This often occurs because trials are conducted within very limited parameters; once the drug has been approved for mass distribution, however, the number of people taking it and the length of time that it is taken increase dramatically. Several COX-2 drugs that have been popular in recent years fit this pattern: initially successful in clinical trials, subsequent studies showed them to have serious, potentially lethal side effects.

Though prostaglandin chemistry and enzymology have been studied for half a century, pinpointing the exact role of the molecules in physiological processes still remains a challenge for researchers. Hence it is not surprising that recent therapeutic attempts to interfere with the formation of certain prostaglandins have produced unexpected side effects. It now seems that the hype surrounding COX-2 drugs may have been premature.

### 1 . The passage suggest which the following about COX- 2 inhibitors?

- A. They fail to protect the stomach from gastric acids that can cause irritation, but protect the body from tissue inflammation.
- B. They produce similar side effects as those caused by Naproxen.
- C. They were introduced approximately 20 years after the relationship between aspirin and prostaglandins was discovered.
- D. They stimulate production of prostaglandins that cause tissue inflammation.
- E. They are generated by external stimuli and act on the cells that produce them.

### 2. According to the passage, all of the following are true of prostaglandins EXCEPT:

- A. They were discovered in the 1930s.
- B. They are generated by most mammalian tissues.
- C. They produce the sensation of pain in the body, but are also responsible for other bodily functions.
- D. They cause side effects that clinical trials failed to detect.
- E. Their production is affected by enzymes COX-1, COX- 2, and COX-3.

### 3. The author mentions that prostaglandins are generated in response to external stimuli primarily in order to support the contention that

- A. Prostaglandins can produce or aggravate stomach ulcers.
- B. Prostaglandins act in the same tissue that produces them.
- C. Prostaglandins prevent the enzyme cyclooxygenase from functioning.
- D. Prostaglandins are significantly different from most mammalian hormones.
- E. Prostaglandins are responsible for the human sensation of pain.

### 4. The primary purpose of this passage is to

- A. explain the therapeutic benefits of a new type of pain reliever
- B. initiate a debate concerning the benefits of COX-2 inhibitors
- C. warn the public that clinical trials cannot ensure drug safety
- D. describe the impetus for and result of COX-2 inhibitors' introduction
- E. introduce research findings to support COX-2 inhibitors over COX-1 inhibitors

## Passage 80

The sloth bear, an insect-eating animal native to Nepal, exhibits only one behavior that is truly distinct from that of other bear species: the females carry their cubs (at least part-time) until the cubs are about nine months old, even though the cubs can walk on their own at six months. Cub-carrying also occurs among some other myrmecophagous (ant-eating) mammals; therefore, one explanation is that cub-carrying is necessitated by myrmecophagy, since myrmecophagy entails a low metabolic rate and high energy expenditure in walking between food patches. However, although polar bears' locomotion is similarly inefficient, polar bear cubs walk along with their mother. Furthermore, the daily movements of sloth bears and American black bears—which are similar in size to sloth bears and have similar-sized home ranges—reveal similar travel rates and distances, suggesting that if black bear cubs are able to keep up with their mother, so too should sloth bear cubs.

An alternative explanation is defense from predation. Black bear cubs use trees for defense, whereas brown bears and polar bears, which regularly inhabit treeless environments, rely on aggression to protect their cubs. Like brown bears and polar bears (and unlike other myrmecophagous mammals, which are noted for their passivity), sloth bears are easily provoked to aggression. Sloth bears also have relatively large canine teeth, which appear to be more functional for fighting than for foraging. Like brown bears and polar bears, sloth bears may have evolved in an environment with few trees. They are especially attracted to food-rich grasslands; although few grasslands persist today on the Indian subcontinent, this type of habitat was once wide-spread there. Grasslands support high densities of tigers, which fight and sometimes kill sloth bears; sloth bears also coexist with and have been killed by tree-climbing leopards, and are often confronted and chased by rhinoceroses and elephants, which can topple trees. Collectively these factors probably selected against tree-climbing as a defensive strategy for sloth bear cubs. Because sloth bears are smaller than brown and polar bears and are under greater threat from dangerous animals, they may have adopted the extra precaution of carrying their cubs. Although cub-carrying may also be adoptive for myrmecophagous foraging, the behavior of sloth bear cubs, which climb on their mother's back at the first sign of danger, suggests that predation was a key stimulus.

### 1. The author mentions rhinoceroses and elephants (lines 52-53) primarily in order to

- (A) explain why sloth bears are not successful foragers in grassland habitats
- (B) identify the predators that have had the most influence on the behavior of sloth bears
- (C) suggest a possible reason that sloth bear cubs do not use tree-climbing as a defense
- (D) provide examples of predators that were once widespread

across the Indian subcontinent

- (E) defend the assertion that sloth bears are under greater threat from dangerous animals than are other bear species

### 2. Which of the following, if true, would most weaken the author's argument in highlighted text?

- (A) Cub-carrying behavior has been observed in many non-myrmecophagous mammals.
- (B) Many of the largest myrmecophagous mammals do not typically exhibit cub-carrying behavior.
- (C) Some sloth bears have home ranges that are smaller in size than the average home ranges of black bears.
- (D) The locomotion of black bears is significantly more efficient than the locomotion of sloth bears.
- (E) The habitat of black bears consists of terrain that is significantly more varied than that of the habitat of sloth bears.

### 3. Which of the following is mentioned in the passage as a way in which brown bears and sloth bears are similar?

- (A) They tend to become aggressive when provoked.
- (B) They live almost exclusively in treeless environments.
- (C) They are preyed upon by animals that can climb or topple trees.
- (D) They are inefficient in their locomotion.
- (E) They have relatively large canine teeth.

### 4. The primary purpose of the passage is to

- A. trace the development of a particular behavioral characteristic of the sloth bear
- B. explore possible explanations for a particular behavioral characteristic of the sloth bear
- C. compare the defensive strategies of sloth bear cubs to the defensive strategies of cubs of other bear species
- D. describe how certain behavioral characteristics of the sloth bear differ from those of other myrmecophagous mammals
- E. provide an alternative to a generally accepted explanation of a particular behavioral characteristic of myrmecophagous mammals

### 5. The author mentions which of the following as evidence for the view that cub-carrying behavior among sloth bears functions primarily as a defense from predation?

- A. The relative passivity of sloth bears in comparison with other species of bears
- B. The age at which sloth bear cubs can defend themselves from predators
- C. The unsuitability of cub-carrying for myrmecophagous foraging
- D. The behavior of sloth bear cubs when they first perceive danger
- E. The inefficient locomotion of sloth bears and other myrmecophagous animals

## Passage 81

For many years, theoretical economists characterized humans as rational beings relentlessly bent on maximizing purely selfish reward. Results of an experimental economics study appear to contradict this view, however. In the "Ultimatum Game," two subjects, who cannot exchange information, are placed in separate rooms. One is randomly chosen to propose how a sum of money, known to both, should be shared between them; only one offer, which must be accepted or rejected without negotiation, is allowed.

If, in fact, people are selfish and rational, then the proposer should offer the smallest possible share, while the responder should accept any offer, (20) no matter how small: after all, even **one dollar** is better than nothing. In numerous trials, however, two-thirds of the offers made were between 40 and 50 percent; only 4 percent were less than 20 percent. Among responders, more than half who were offered less than 20 percent rejected the offer. Behavior in the game did not appreciably depend on the players' sex, age, or education. Nor did the amount of money involved play a significant role: for instance, in trials of the game that were conducted in Indonesia, the sum to be shared was as much as three times the subjects' average monthly income, and still responders refused offers that they deemed too small.

- 1) The primary purpose of the passage is to
- A. provide evidence in support of the view that human beings are essentially rational and selfish
  - B. use a particular study to challenge the argument that the economic behavior of human beings may be motivated by factors other than selfishness
  - C. compare certain views about human nature held by theoretical economists with those held by experimental economists
  - D. describe a study that apparently challenges theoretical economists' understanding of human economic behavior
  - E. suggest that researchers may have failed to take into account the impact of certain noneconomic factors in designing a study of human economic behaviour

2) The passage implies that the results of the Ultimatum Game undermine theoretical economists' characterization of human beings by

- A. demonstrating that most people are inclined to try to maximize their own advantage whenever possible
- B. indicating that people who do not have the option of negotiating might behave more generously than do those who have the option of negotiating
- C. illustrating how people's economic behavior depends to some extent on how large a sum of money is involved
- D. showing that most people instinctively place their own economic self-interest ahead of the interest of strangers
- E. suggesting that people's economic behavior might in part be motivated by factors other than selfishness

3) The author refers to the sum of one dollar (line 21) in order to

- A. question the notion that the amount of money involved significantly affected players' behavior
- B. provide an example of one of the rare offers made by proposers that was less than 20 percent
- C. illustrate the rationality of accepting even a very small offer
- D. suggest a reason that responders rejected offers that were less than 20 percent
- E. challenge the conclusion that a selfish and rational proposer should offer a responder the smallest possible share

4) All of the following are expressly mentioned in the passage as factors that did not significantly affect players' behavior EXCEPT the

- A. players' level of schooling
- B. amount of money to be shared
- C. ages of the players
- D. players' professions
- E. genders of the players

## Passage 82

In a 1984 book, Claire C. Robertson argued that, before colonialism, age was a more important indicator of status and authority than gender in Ghana and in Africa generally. British colonialism imposed European-style male dominant notions upon more egalitarian local situations to the detriment of women generally, and gender became a defining characteristic that weakened women's power and authority.

Subsequent research in Kenya convinced Robertson that she had overgeneralized about Africa. Before colonialism, gender was more salient in central Kenya than it was in Ghana, although age was still crucial in determining authority. In contrast with Ghana, where women had traded for hundreds of years and achieved legal majority (not unrelated phenomena), the evidence regarding central Kenya indicated that women were legal minors and were sometimes treated as male property, as were European women at that time. Factors like strong patrilinearity and patrilocality, as well as women's inferior land rights and lesser involvement in trade, made women more dependent on men than was generally the case in Ghana. However, since age apparently remained the overriding principle of social organization in central Kenya, some senior women had much authority. Thus, Robertson revised her hypothesis somewhat, arguing that in determining authority in precolonial Africa age was a primary principle that superseded gender to varying degrees depending on the situation.

1. The primary purpose of the passage is to
  - (A) present evidence undermining a certain hypothesis
  - (B) describe a particular position and its subsequent modification
  - (C) discuss two contrasting viewpoints regarding a particular issue
  - (D) describe how a social phenomenon varied by region
  - (E) evaluate an assumption widely held by scholars

2. The passage indicates that Robertson's research in Kenya caused her to change her mind regarding which of the following?

- (A) Whether age was the prevailing principle of social organization in Kenya before colonialism
- (B) Whether gender was the primary determinant of social authority in Africa generally before colonialism
- (C) Whether it was only after colonialism that gender became a significant determinant of authority in Kenyan society
- (D) Whether age was a crucial factor determining authority in Africa after colonialism
- (E) Whether British colonialism imposed European-style male-dominant notions upon local situations in Ghana

3. The passage suggests that after conducting the research mentioned in highlighted text, but not before, Robertson would have agreed with which of the following about women's status and authority in Ghana?

- (A) Greater land rights and greater involvement in trade made women in precolonial Ghana less dependent on men than were European women at that time.
- (B) Colonialism had a greater impact on the status and authority of Ghanaian women than on Kenyan women.
- (C) Colonialism had less of an impact on the status and authority of Ghanaian women than it had on the status and authority of other African women.
- (D) The relative independence of Ghanaian women prior to colonialism was unique in Africa.
- (E) Before colonialism, the status and authority of Ghanaian women was similar to that of Kenyan women.

4. The author of the passage mentions the status of age as a principle of social organization in precolonial central Kenya in highlighted text most likely in order to

- (A) indicate that women's dependence on men in precolonial Kenya was not absolute
- (B) contrast the situation of senior women to that of less senior women in precolonial Kenyan society
- (C) differentiate between the status and authority of precolonial Kenyan women and that of precolonial Ghanaian women
- (D) explain why age superseded gender to a greater extent in precolonial Kenya than it did elsewhere in Africa
- (E) identify a factor that led Robertson to revise her hypothesis about precolonial Africa

### Passage 83

Behavior science courses should be gaining prominence in business school curricula. Recent theoretical work convincingly shows why behavioral factors such as organizational culture and employee relations are among the few remaining sources of sustainable competitive advantage in modern organizations. Furthermore, empirical evidence demonstrates clear linkages between human resource (HR) practices based in the behavioral sciences and various aspects of a firm's financial success. Additionally, some of the world's most successful organizations have made unique HR practices a core element of their overall business strategies.

Yet the behavior sciences are struggling for credibility in many business schools. Surveys show that business students often regard behavioral studies as peripheral to the mainstream business curriculum. This perception can be explained by the fact that business students, hoping to increase their attractiveness to prospective employers, are highly sensitive to business norms and practices, and current business practices have generally been moving away from an emphasis on understanding human behavior and toward more mechanistic organizational models. Furthermore, the status of HR professionals within organizations tends to be lower than that of other executives.

Students' perceptions would matter less if business schools were not increasingly dependent on external funding—form legislatures, businesses, and private foundations—for survival. Concerned with their institutions' ability to attract funding, administrators are increasingly targeting low-enrollment courses and degree programs for elimination.

1. The primary purpose of the passage is to
- (A) propose a particular change to business school curricula
  - (B) characterize students' perceptions of business school curricula
  - (C) predict the consequences of a particular change in business school curricula
  - (D) challenge one explanation for the failure to adopt a particular change in business school curricula
  - (E) identify factors that have affected the prestige of a particular field in business school curricula

2. The author of the passage mentions "empirical evidence" (line 2) primarily in order to

- (A) question the value of certain commonly used HR practices
- (B) illustrate a point about the methodology behind recent theoretical work in the behavioral sciences
- (C) support a claim about the importance that business schools should place on courses in the behavioral sciences
- (D) draw a distinction between two different factors that affect the financial success of a business
- (E) explain how the behavioral sciences have shaped HR practices in some business organizations

3. The author of the passage suggests which of the following about HR professionals in business organizations?

- (A) They are generally skeptical about the value of mechanistic organizational models.
- (B) Their work increasingly relies on an understanding of human behavior.
- (C) Their work generally has little effect on the financial performance of those organizations.
- (D) Their status relative to other business executives affects the attitude of business school students toward the behavioral sciences.
- (E) Their practices are unaffected by the relative prominence of the behavioral sciences within business schools.

4. The author of the passage considers each of the following to be a factor that has contributed to the prevailing attitude in business schools toward the behavioral sciences EXCEPT

- (A) business students' sensitivity to current business norms and practices
- (B) the relative status of HR professionals among business executives
- (C) business schools' reliance on legislatures, businesses, and private foundations for funding
- (D) businesses' tendency to value mechanistic organizational models over an understanding of human behavior
- (E) theoretical work on the relationship between behavioral factors and a firm's financial performance

## Passage 84

(This passage is excerpted from material published in 1997)

Whereas United States economic productivity grew at an annual rate of 3 percent from 1945 to 1965, it has grown at an annual rate of only about 1 percent since the early 1970's. What might be preventing higher productivity growth? Clearly, the manufacturing sector of the economy cannot be blamed. Since 1980, productivity improvements in manufacturing have moved the United States from a position of acute decline in manufacturing to one of world prominence. Manufacturing, however, constitutes a relatively small proportion of the economy. In 1992, goods-producing businesses employed only 19.1 percent of American workers, whereas service-producing businesses employed 70 percent. Although the service sector has grown since the late 1970's, its productivity growth has declined. Several explanations have been offered for this decline and **for the discrepancy** in productivity growth between the manufacturing and service sectors. One is that traditional measures fail to reflect service-sector productivity growth because it has been concentrated in improved quality of services. Yet traditional measures of manufacturing productivity have shown significant increases despite the under measurement of quality, whereas service productivity has continued to stagnate. Others argue that since the 1970's, manufacturing workers, faced with strong foreign competition, have learned to work more efficiently in order to keep their jobs in the United States, but service workers, who are typically under less global competitive pressure, have not. However, the pressure on manufacturing workers in the United States to work more efficiently has generally been overstated, often for political reasons. In fact, while some manufacturing jobs have been lost due to foreign competition, many more have been lost simply because of slow growth in demand for manufactured goods.

Yet another explanation blames the federal budget deficit: if it were lower, interest rates would be lower too, thereby increasing investment in the development of new technologies, which would spur productivity growth in the service sector. There is, however, no dearth of technological resources, rather, managers in the service sector fail to take advantage of widely available skills and machines. High productivity growth levels attained by leading edge service companies indicate that service sector managers who wisely implement available technology and choose skillful workers can significantly improve their companies' productivity. The culprits for service-sector productivity stagnation are the forces such as corporate takeovers and unnecessary governmental regulation that distract managers from the task of making optimal use of available resources.

### 1) Which of the following, if true, would most weaken the budget-deficit explanation for the discrepancy mentioned in line 57?

- (A) Research shows that the federal budget deficit has traditionally caused service companies to invest less money in research and development of new technologies
- (B) New technologies have been shown to play a significant role in companies that have been able to increase their service productivity
- (C) In both the service sector and manufacturing, productivity improvements are concentrated in gains in quality
- (D) The service sector typically requires larger investments in new technology in order to maintain productivity growth than those of manufacturing
- (E) High interest rates tend to slow the growth of manufacturing productivity as much as they slow the growth of service-sector productivity in the United States

### 2) The passage states which of the following about the effect of foreign competition on the American manufacturing sector since the 1970's?

- A. It has often been exaggerated.
- B. It has not been a direct cause of job loss.
- C. It has in large part been responsible for the subsequent slowing of productivity growth.
- D. It has slowed growth in the demand for manufactured goods in the United States.
- E. It has been responsible for the majority of American jobs lost in manufacturing.

### 3) It can be inferred from the passage that which of the following was true of the United States manufacturing sector in the years immediately prior to 1980?

- A. It was performing relatively poorly.
- B. It was in a position of world prominence.
- C. It was increasing its productivity at an annual rate of 3 percent.
- D. It was increasing its productivity at an annual rate of 1 percent.
- E. Its level of productivity was higher than afterward.

### 4) The author of the passage would be most likely to agree with which of the following statements about productivity improvements in United States service companies?

- (A) Such improvements would be largely attributable to efficiencies resulting from corporate takeovers.
- (B) Such improvements would depend more on wise implementation of technology than on managers' choice of skilled workers.
- (C) Such improvements would be more easily accomplished if there were fewer governmental regulations of the service sector.
- (D) Such improvements would require companies to invest heavily in the development of new technologies.
- (E) Such improvements would be attributable primarily to companies' facing global competitive pressure.

### Passage 85

After the Second World War, unionism in the Japanese auto industry was company-based, with separate unions in each auto company. Most company unions played no independent role in bargaining shop-floor issues or pressing autoworkers' grievances. In a 1981 survey, for example, fewer than 1 percent of workers said they sought union assistance for work-related problems, while 43 percent said they turned to management instead. There was little to distinguish the two in any case: most union officers were foremen or middle-level managers, and the union's role was primarily one of passive support for company goals. Conflict occasionally disrupted this cooperative relationship — one company union's opposition to the productivity campaigns of the early 1980s has been cited as such a case. In 1986, however, a caucus led by the Foreman's Association forced the union's leadership out of office and returned the union's policy to one of passive cooperation. In the United States, the potential for such company unionism grew after 1979, but it had difficulty taking hold in the auto industry, where a single union represented workers from all companies, particularly since federal law prohibited foremen from joining or leading industrial unions.

The Japanese model was often invoked as one in which authority decentralized to the shop floor empowered production workers to make key decisions. What these claims failed to recognize was that the actual delegation of authority was to the foreman, not the workers. The foreman exercised discretion over job assignments, training, transfers, and promotions; worker initiative was limited to suggestions that fine-tuned a management-controlled production process. Rather than being proactive, Japanese workers were forced to be reactive, the range of their responsibilities being far wider than their span of control. For example, the founder of one production system, Taiichi Ohno, routinely gave department managers only 90 percent of the resources needed for production. As soon as workers could meet production goals without working overtime, 10 percent of remaining resources would be removed. Because the "OH! NO!" system continually pushed the production process to the verge of breakdown in an effort to find the minimum resource requirement, critics described it as "management by stress."

1. The passage is primarily concerned with
  - A. contrasting the role of unions in the Japanese auto industry with the role of unions in the United States auto industry after the Second World War
  - B. describing unionism and the situation of workers in the Japanese auto industry after the Second World War
  - C. providing examples of grievances of Japanese auto workers against the auto industry after the Second World War
  - D. correcting a misconception about the role of the foreman in the Japanese auto industry's union system after the Second World War
  - E. reasserting the traditional view of the company's role in Japanese auto workers' unions after the Second World War
2. According to the passage, a foreman in a United States auto company differed from a foreman in a Japanese auto company in that the foreman in the United States would
  - A. not have been a member of an auto workers' union
  - B. have been unlikely to support the goals of company management
  - C. have been able to control production processes to a large extent
  - D. have experienced greater stress
  - E. have experienced less conflict with workers
3. The author of the passage mentions the "OH! NO!" system primarily in order to
  - A. indicate a way in which the United States industry has become more like the Japanese auto industry
  - B. challenge a particular misconception about worker empowerment in the Japanese auto industry
  - C. illustrate the kinds of problem-solving techniques encouraged by company unions in Japan
  - D. suggest an effective way of minimizing production costs in auto manufacturing
  - E. provide an example of the responsibilities assumed by a foreman in the Japanese auto industry
4. It can be inferred that the author of the passage sees which of the following as the primary advantage to companies in implementing the "OH! NO!" system?
  - A. It permitted the foreman to take initiative.
  - B. It minimized the effort required to produce automobiles.
  - C. It ensured that production costs would be as low as possible.
  - D. It allowed the foreman to control the production process.
  - E. It required considerable worker empowerment to achieve managers' goals.

## Passage 86

Anthropologists once thought that the ancestors of modern humans began to walk upright because it freed their hands to use stone tools, which they had begun to make as the species evolved a brain of increased size and mental capacity. But discoveries of the three-million-year-old fossilized remains of our hominid ancestor *Australopithecus* have yielded substantial anatomical evidence that upright walking appeared prior to the dramatic enlargement of the brain and the development of stone tools.

Walking on two legs in an upright posture (bipedal locomotion) is a less efficient proposition than walking on all fours (quadrupedal locomotion) because several muscle groups that the quadruped uses for propulsion must instead to provide the biped with stability and control. The shape and configuration of various bones must likewise be modified to allow the muscles to perform these functions in upright walking.

Reconstruction of the pelvis (hipbones) and femur (thighbone) of “Lucy”, a three-million-year-old skeleton that is the most complete fossilized skeleton from the australopithecine era, has shown that they are much more like the corresponding bones of the modern human than like those of the most closely related living primate, the quadrupedal chimpanzee.

Lucy’s wide, shallow pelvis is actually better suited to bipedal walking than is the rounder, bowl-like pelvis of the modern human, which evolved to form the larger birth canal needed to accommodate the head of a large-brained human infant. By contrast, the head of Lucy’s baby could have been no larger than that of a baby chimpanzee.

If the small-brained australopithecines were not toolmakers, what evolutionary advantage did they gain by walking upright? One theory is that bipedality evolved in conjunction with the nuclear family: monogamous parents cooperating to care for their offspring. Walking upright permitted the father to use his hands to gather food and carry it to his mate from a distance, allowing the mother to devote more time and energy to nurturing and protecting their children. According to this view, the transition to bipedal walking may have occurred as long as ten million years ago, at the time of the earliest hominids, making it a crucial initiating event in human evolution.

### 1. The primary purpose of the passage is to

- A. present an interpretation of the chronological relationship between bipedal locomotion and certain other key aspects of human evolution
- B. compare the evolutionary advantages and disadvantages of bipedal locomotion to those of quadrupedal locomotion
- C. argue that the transition to a nuclear family structure was a more crucial step in human evolution than was the

development of stone tools

- D. analyze anatomical evidence of bipedal locomotion to show that the large brain of modern humans developed at a later stage of evolution than was previously believed
- E. use examples of muscle and bone structure to illustrate the evolutionary differences between modern humans, australopithecines, and chimpanzees

### 2. The passage suggests that proponents of the theory mentioned in lines 35–38 assume that which of the following steps in human evolution occurred most recently?

- A. Development of a nuclear family structure
- B. Transition from walking on all fours to walking upright
- C. Dramatic enlargement of the brain
- D. Use of the hands to gather and carry food
- E. Modification of propulsive muscles to provide stability and control in locomotion

### 3. According to the passage, the hominid australopithecine most closely resembled a modern human with respect to which of the following characteristics?

- A. Brain size
- B. Tool-making ability
- C. Shape of the pelvis
- D. Method of locomotion
- E. Preference for certain foods

### 4. The passage suggests that, in comparison with the hominid australopithecines, modern humans are

- A. less well adapted to large group cooperation
- B. less well adapted to walking upright
- C. more agile in running and climbing
- D. more well suited to a nuclear family structure
- E. more well suited to cooperative caring for their offspring

### 5. The theory mentioned in lines 35–38 suggests that which of the following was true for the hominid ancestors of modern humans before they made the transition to walking upright?

- A. Their brains were smaller than the brains of present-day chimpanzees.
- B. They competed rather than cooperated in searching for food.
- C. Their mating patterns and family structure were closer to those of present-day chimpanzees than to those of modern humans.
- D. Males played a more significant role in child rearing than they played after the transition to walking upright.
- E. Females’ ability to nurture and protect their offspring was limited by the need to find food for themselves.

**Passage 87**

What kinds of property rights apply to Algonquian family hunting territories, and how did they come to be? The dominant **view** in recent decades has been that family hunting territories, like other forms of private landownership, were not found among Algonquians (a group of North American Indian tribes) before contact with Europeans but are the result of changes in Algonquian society brought about by the European-Algonquian fur trade, in combination with other factors such as ecological changes and consequent shifts in wildlife harvesting patterns. Another **view** claims that Algonquian family hunting territories predate contact with Europeans and are forms of private landownership by individuals and families. More recent fieldwork, however, has shown that individual and family rights to hunting territories form part of a larger land-use system of multifamilial hunting groups, that rights to hunting territories at this larger community level take precedence over those at the individual or family level, and that this system reflects a concept of spiritual and social reciprocity that conflicts with European concepts of private property. In short, there are now strong reasons to think that it was erroneous to claim that Algonquian family hunting territories ever were, or were becoming, a kind of private property system.

1. It can be inferred from the passage that proponents of the view mentioned in the first highlighted text believe which of the following about the origin of Algonquian family hunting territories?

- (A) They evolved from multifamilial hunting territories.
- (B) They are an outgrowth of reciprocal land-use practices.
- (C) They are based on certain spiritual beliefs.
- (D) They developed as a result of contact with Europeans.
- (E) They developed as a result of trade with non-Algonquian Indian tribes.

2. The primary purpose of the passage is to

- (A) provide an explanation for an unexpected phenomenon
- (B) suggest that a particular question has yet to be answered
- (C) present a new perspective on an issue
- (D) defend a traditional view from attack
- (E) reconcile opposing sides of an argument

3. According to the passage, recent fieldwork has revealed which of the following about rights to hunting territories in Algonquian societies?

- (A) Rights at the individual level take precedence over those at the family level.
- (B) Rights at the multifamilial level take precedence over those at the family level.
- (C) These rights developed as a result of changes in Algonquian society brought about by contact with Europeans.
- (D) These rights developed in response to European challenges to Algonquian private land ownership.
- (E) These rights developed in response to recent ecological changes that have negatively affected the availability of game.

### Passage 88

According to P. F. Drucker, the management philosophy known as Total Quality Management (TQM), which is designed to be adopted consistently throughout an organization and to improve customer service by using sampling theory to reduce the variability of a product's quality, can work successfully in conjunction with two older management systems. As Drucker notes, TQM's scientific approach is consistent with the statistical sampling techniques of the "rationalist" school of scientific management, and the organizational structure associated with TQM is consistent with the social and psychological emphases of the "human relations" school of management.

However, TQM cannot simply be grafted onto these systems or onto certain other non-TQM management systems. Although, as Drucker contends, TQM shares with such systems the ultimate objective of increasing profitability, TQM requires fundamentally different strategies. While the other management systems referred to use upper management decision-making and employee specialization to maximize shareholder profits over the short term, TQM envisions the interests of employees, shareholders, and customers as convergent. For example, lower prices not only benefit consumers but also enhance an organization's competitive edge and ensure its continuance, thus benefiting employees and owners. TQM's emphasis on shared interests is reflected in the decentralized decision-making, integrated production activity, and lateral structure of organizations that achieve the benefits of TQM.

1. The primary purpose of the passage is to
  - (A) point out contradictions in a new management system
  - (B) compare and contrast the objectives of various management systems
  - (C) identify the organizational features shared by various management systems
  - (D) explain the relationship of a particular management system to certain other management systems
  - (E) explain the advantages of a particular management system over certain other management systems

2. Which of the following best describes the relationship of the second paragraph to the first paragraph?
  - (A) It presents contrasting explanations for a phenomenon presented in the first paragraph.
  - (B) It discusses an exception to a general principle outlined in the first paragraph.
  - (C) It provides information that qualifies a claim presented in the first paragraph.
  - (D) It presents an example that strengthens a claim presented in the first paragraph.
  - (E) It presents an alternative approach to solving a problem discussed in the first paragraph.

3. According to the passage, the rationalist and human relations schools of management are alike in that they
  - A. are primarily interested in increasing profits
  - B. place little emphasis on issues of organizational structure
  - C. use statistical sampling techniques to increase profitability
  - D. are unlikely to lower prices in order to increase profitability
  - E. focus chiefly on setting and attaining long-term objectives

## Passage 89

Modern manufacturers, who need reliable sources of materials and technologically advanced components to operate profitably, face an increasingly difficult choice between owning the producers of these items (a practice known as backward integration) and buying from independent producers. Manufacturers who integrate may reap short-term rewards, but they often restrict their future capacity for innovative product development.

Backward integration removes the need for some purchasing and marketing functions, centralizes overhead, and permits manufacturers to eliminate duplicated efforts in research and development. Where components are commodities (ferrous metals or petroleum, for example), backward integration almost certainly boosts profits. Nevertheless, because product innovation means adopting the most technologically advanced and cost-effective ways of making components, backward integration may entail a serious risk for a technologically active company—for example, a producer of sophisticated consumer electronics.

A company that decides to make rather than buy important parts can lock itself into an outdated technology. Independent suppliers may be unwilling to share innovations with assemblers with whom they are competing. Moreover, when an assembler sets out to master the technology of producing advanced components, the resulting demands on its resources may compromise its ability to assemble these components successfully into end products. Long-term contracts with suppliers can achieve many of the same cost benefits as backward integration without compromising a company's ability to innovate.

However, moving away from backward integration is not a complete solution either. Developing innovative technologies requires independent suppliers of components to invest huge sums in research and development. The resulting low profit margins on the sale of components threaten the long-term financial stability of these firms. Because the ability of end-product assemblers to respond to market opportunities depends heavily on suppliers of components, assemblers are often forced to integrate by purchasing the suppliers of components just to keep their suppliers in business.

### 1. According to the passage, which of the following relationships between profits and investments in research and development holds true for producers of technologically advanced components?

- A) Modest investments are required and the profit margins on component sales are low.
- B) Modest investments are required but the profit margins on component sales are quite high.
- C) Despite the huge investments that are required, the profit margins on component sales are high.
- D) Because huge investments are required, the profit margins on component sales are low.
- E) Long-term contractual relationships with purchasers of components ensure a high ratio of profits to investment costs.

### 2. According to passage, when an assembler buys a firm that makes some important component of the end product that the assembler produces, independent suppliers of the same component may

- A. withhold technological innovations from the assembler
- B. experience improved profit margins of on sales of their products
- C. lower their prices to protect themselves from competition
- D. suffer financial difficulties and go out of business
- E. stop developing new versions of the component

### 3. According to the passage, all of the following are benefits associated with backward integration EXCEPT:

- A. improvement in the management of overhead expenses
- B. enhancement of profit margins on sales of components
- C. simplification of purchasing and marketing operations
- D. reliability of a source of necessary components
- E. elimination of unnecessary research efforts

### 4. Which of the following best describes the way the last paragraph functions in the context of the passage?

- A. The last in a series of arguments supporting the central argument of the passage is presented.
- B. A viewpoint is presented which qualifies one presented earlier in the passage.
- C. Evidence is presented in support of the argument developed in the preceding paragraph.
- D. Questions arising from the earlier discussion are identified as points of departure for further study of the topic.
- E. A specific example is presented to illustrate the main elements of argument presented in the earlier paragraphs.

### Passage 90

The professionalization of the study of history in the second half of the nineteenth century, including history's transformation from a literary genre to a scientific discipline, had important consequences not only for historians' perceptions of women but also for women as historians. The disappearance of women as objects of historical studies during this period has **elements of irony** to it. On the one hand, in writing about women, earlier historians had relied not on firsthand sources but rather on secondary sources; the shift to more rigorous research methods required that secondary sources be disregarded. On the other hand, the development of archival research and the critical editing of collections of documents began to reveal significant new historical evidence concerning women, yet this evidence was perceived as substantially irrelevant: historians saw political history as the general framework for historical writing. Because women were seen as belonging to the private rather than to the public sphere, the discovery of documents about them, or by them, did not, by itself, produce history acknowledging the contributions of women. In addition, genres such as biography and memoir, those forms of "particular history" that women had traditionally authored, fell into disrepute. The dividing line between "particular history" and general history was redefined in stronger terms, widening the gulf between amateur and professional practices of historical research.

1. The passage is primarily concerned with
  - (A) describing some effects of the professionalization of the study of history on the writing of women's history
  - (B) explaining some reasons for the professionalization of the writing of history
  - (C) discussing the kinds of historical writing traditionally practiced by women
  - (D) contrasting the approach to the writing of history taken by women with the approach taken by men
  - (E) criticizing certain changes that occurred in the writing of history during the second half of the nineteenth century
2. Which of the following best describes one of the **"elements of irony"** referred to in the highlighted text?
  - (A) Although the more scientific-minded historians of the second half of the nineteenth century considered women appropriate subjects for historical writing, earlier historians did not.
  - (B) Although archival research uncovered documentary evidence of women's role in history, historians continued to rely on secondary sources for information about women.
  - (C) Although historians were primarily concerned with writing about the public sphere, they generally relegated women to the private sphere.
  - (D) The scientific approach to history revealed more information about women, but that information was ignored.
  - (E) The professionalization of history, while marginalizing much of women's writing about history, enhanced the importance of women as historical subjects.
3. According to the passage, the development of archival research and the critical editing of collections of documents had which of the following effects?
  - (A) Historians increasingly acknowledged women's contributions to history.
  - (B) Historians began to debate whether secondary sources could provide reliable information.
  - (C) Historians began to apply less rigorous scientific research criteria to the study of women's history.
  - (D) More evidence concerning women became available to historical researchers.
  - (E) Women began to study history as professional historians.

### Passage 91

According to a theory advanced by researcher Paul Martin, the wave of species extinctions that occurred in North America about 11,000 years ago, at the end of the Pleistocene era, can be directly attributed to the arrival of humans, i.e., the Paleoindians, who were ancestors of modern Native Americans. However, anthropologist Shepard Krech points out that large animal species vanished even in areas where there is no evidence to demonstrate that Paleoindians hunted them. **Nor were extinctions confined to large animals: small animals, plants, and insects disappeared**, presumably not all through human consumption. Krech also contradicts Martin's exclusion of climatic change as an explanation by asserting that widespread climatic change did indeed occur at the end of the Pleistocene. Still, Krech attributes secondary if not primary responsibility for the extinctions to the Paleoindians, arguing that humans have produced local extinctions elsewhere. But, according to historian Richard White, even the attribution of secondary responsibility may not be supported by the evidence. White observes that Martin's thesis depends on coinciding dates for the arrival of humans and the decline of large animal species, and Krech, though aware that the dates are controversial, does not challenge them; yet **recent archaeological discoveries** are providing evidence that the date of human arrival was much earlier than 11,000 years ago.

Q1: Which of the following is true about Martin's theory, as that theory is described in the passage?

- (A) It assumes that the Paleoindians were primarily dependent on hunting for survival.
- (B) It denies that the Pleistocene species extinctions were caused by climate change.
- (C) It uses as evidence the fact that humans have produced local extinctions in other situations.
- (D) It attempts to address the controversy over the date of human arrival in North America.
- (E) It admits the possibility that factors other than the arrival of humans played a role in the Pleistocene extinctions.

Q2: In the last sentence of the passage, the author refers to "**recent archaeological discoveries**" (lines 36-37) most probably in order to

- (A) refute White's suggestion that neither Martin nor Krech adequately account for Paleoindians' contributions to the Pleistocene extinctions
- (B) cast doubt on the possibility that a more definitive theory regarding the causes of the Pleistocene extinctions may be forthcoming
- (C) suggest that Martin's, Krech's, and White's theories regarding the Pleistocene extinctions are all open to question
- (D) call attention to the most controversial aspect of all the current theories regarding the Pleistocene extinctions
- (E) provide support for White's questioning of both Martin's and Krech's positions regarding the role of Paleoindians in the Pleistocene extinctions

Q3: Which of the following, if true, would most weaken Krech's objections to Martin's theory?

- (A) Further studies showing that the climatic change that occurred at the end of the Pleistocene era was even more severe and widespread than was previously believed
- (B) New discoveries indicating that Paleoindians made use of the small animals, plants, and insects that became extinct
- (C) Additional evidence indicating that widespread climatic change occurred not only at the end of the Pleistocene era but also in previous and subsequent eras
- (D) Researchers' discoveries that many more species became extinct in North America at the end of the Pleistocene era than was previously believed
- (E) New discoveries establishing that both the arrival of humans in North America and the wave of Pleistocene extinctions took place much earlier than 11,000 years ago

Q4: The passage suggests that Krech would be most likely to agree with a theory of the Pleistocene species extinctions that

- (A) included climate change as one of the causes of the extinctions
- (B) incorporated a revised date for human arrival in North America
- (C) eliminated the Paleoindians as a factor in the extinctions
- (D) identified a single cause for the extinctions
- (E) emphasized the role of hunting in causing most species extinctions

5. The passage mentions the extinction of species other than large animals (see highlighted text) [**Nor were extinctions confined to large animals: small animals, plants, and insects disappeared**] most probably in order to

- (A) suggest that the Paleoindians were responsible for more extinctions than Martin's theory assumes
- (B) provide support for the speculation that humans arrived in North America significantly earlier than the end of the Pleistocene era
- (C) point out the only area in which Martin, Krech, and White agree concerning the circumstances of the Pleistocene extinctions
- (D) cite additional evidence tending to support Krech's conclusions about the role of humans in the Pleistocene extinctions
- (E) raise a question about the logical consistency of Krech's view of Martin's theory

## Passage 92

While acknowledging that there are greater employment opportunities for Latin American women in cities than in the countryside, social science theorists have continued to argue that urban migration has unequivocally hurt women's status. However, the effects of migration are more complex than these theorists presume. For example, effects can vary depending on women's financial condition and social class. Brazilian women in the lowest socioeconomic class have relatively greater job opportunities and job security in cities than do men of the same class, although there is no compelling evidence that for these women the move to the city is a move out of poverty. Thus, these women may improve their status in relation to men but at the same time may experience no improvement in their economic standing.

In addition, working outside the home, which is more common in urban than in rural areas, helps women in the lowest socioeconomic class make contacts to extend exchange networks—the flow of gifts, loans, or child care from those who currently have access to resources to those who do not. Moreover, poor women working in urban areas actively seek to cultivate long-term employer-employee relations. When an emergency arises that requires greater resources than an exchange network can provide, these women often appeal for and receive aid from their wealthy employers. However, the structure of many poor women's work—often a labor force of one in an employer's home—makes it difficult for them to organize to improve their economic conditions in general.

Not surprisingly, then, Latin American women in the lowest socioeconomic class differ in their opinions about the effects of urban migration on their lives. Some find urban living, with access to electricity and running water, an improvement and would never return to the countryside. Others, disliking the overcrowding and crime, would return to the countryside if there were work opportunities for them there. Thus, urban life has had both negative and positive impacts on women's lives. In general, urban migration has not provided economic prosperity or upward mobility for women in the lowest socioeconomic class, despite their intelligent and energetic utilization of the resources available to them.

### 1. In the first paragraph, the author refers to the experiences of Brazilian women most probably in order to

- A. support an earlier assertion made by social science theorists about the effects of urban migration
- B. provide an example of one area in which urban migration has failed to improve Latin American women's lives
- C. substantiate the claim that the effects of urban migration cannot be easily characterized
- D. illustrate the effect that urban migration has had on the economic status of Latin American women
- E. compare the effect that urban migration has had on the economic status of Latin American women with its effect on the economic status of Latin American men

### 2. Which of the following best summarizes the main point of the passage?

- A. Although Latin American women disagree about the effects urban migration has had on their lives, they agree that migration has provided them with greater opportunities for stable employment outside the home.
- B. Although urban migration has improved the quality of life for Latin American women, it has weakened the social support systems that these women enjoyed in rural communities.

- C. The effects that urban migration has had on Latin American women's lives are complex and are best evaluated in light of a range of issues concerning Latin American women's overall quality of life.
- D. The effects of urban migration in Latin America are different for men than they are for women because of the relatively greater job opportunities and job security enjoyed by women in urban areas.
- E. Urban migration has led to an increasing disparity between the economic prosperity of Latin American women in the lowest socioeconomic classes and that of women in the higher socioeconomic classes.

### 3. The author mentions which of the following as a disadvantage of urban employment for Latin American women in the lowest socioeconomic group?

- A. It is difficult for these women to obtain reliable, long-term employment.
- B. It is difficult for these women to organize effectively in order to obtain better wages.
- C. It is difficult for these women to find employers who are supportive when emergencies arise.
- D. The structure of their jobs makes it difficult for these women to participate in exchange networks.
- E. Working in urban areas makes these women more vulnerable to health problems than they would be in rural areas.

### 4. The author of the passage would most likely agree that the opinions of the Latin American women discussed in the third paragraph (Highlighted) are influenced by the

- A. fact that urban life has provided them with greater opportunities for upward mobility than did rural life
- B. relative importance they place on the benefits of urban exchange networks in comparison to those of rural networks.
- C. relative importance they place on the conveniences and drawbacks of urban life in comparison to those of rural life
- D. difference in the effects of urban migration on women of higher and lower socioeconomic classes
- E. difference in the effects of urban migration on men and women of the same social and economic class

### 5. The author of the passage would most likely react to a claim that Latin American women have not made good use of the resources available to them by

- A. expressing strong disagreement
- B. offering cautious dissent because of specific case studies
- C. withholding judgment because of insufficient evidence
- D. offering tentative support because of some circumstantial evidence
- E. concurring fully with the claim

### 6. It can be inferred that the theorists mentioned in the first paragraph of the passage believe which of the following about the status of Latin American women who migrate from rural to urban areas?

- A. Women enjoyed a higher status in the countryside than they do in the city.
- B. Urban migration will most likely increase women's status because there are greater employment opportunities in urban than in rural areas.
- C. Although urban migration weakens extended-family exchange networks, women's overall status is not greatly affected by migration.
- D. Urban migration increases women's status in comparison to that of men of the same class.
- E. Women's status in urban areas depends primarily on how marketable their job skills are.

### Passage 93

Recent feminist scholarship concerning the United States in the 1920's challenges earlier interpretations that assessed the twenties in terms of the unkept "promises" of the women's suffrage movement. This new scholarship disputes the long-held view that because a women's voting bloc did not materialize after women gained the right to vote in 1920, suffrage failed to produce long-term political gains for women. These feminist scholars also challenge the old view that pronounced suffrage a failure for not delivering on the promise that the women's vote would bring about moral, corruption-free governance. Asked whether women's suffrage was a failure, these scholars cite the words of turn-of-the-century social reformer Jane Addams, "Why don't you ask if suffrage in general is failing?"

In some ways, however, these scholars still present the 1920's as a period of decline. After suffrage, they argue, the feminist movement lost its cohesiveness, and gender consciousness waned. After the mid- 1920's, few successes could be claimed by feminist reformers: little could be seen in the way of legislative victories.

During this decade, however, there was intense activism aimed at achieving increased autonomy for women, broadening the spheres within which they lived their daily lives. Women's organizations worked to establish opportunities for women: they strove to secure for women the full entitlements of citizenship, including the right to hold office and the right to serve on juries.

#### 1. The passage is primarily concerned with

- (A) providing evidence indicating that feminist reformers of the 1920's failed to reach some of their goals
- (B) presenting scholarship that contrasts suffragist "promises" with the historical realities of the 1920's
- (C) discussing recent scholarship concerning the achievements of women's suffrage during the 1920's and presenting an alternative view of those achievements
- (D) outlining recent findings concerning events leading to suffrage for women in the 1920's and presenting a challenge to those findings
- (E) providing support for a traditional view of the success of feminist attempts to increase gender consciousness among women during the 1920's

#### 2. It can be inferred that the author of the passage disagrees with the "new scholarship" mentioned in lines 6-7 regarding the

- (A) degree to which the "promises" of the suffrage movement remained unkept
- (B) degree to which suffrage for women improved the morality of governance
- (C) degree to which the 1920's represented a period of decline

for the feminist movement

- (D) degree of legislative success achieved by feminist reformers during the 1920's
- (E) accuracy of the view that a women's voting bloc did not materialize once suffrage was achieved

#### 3. The purpose of the second paragraph of the passage is to

- (A) suggest a reason why suffragist "promises" were not kept
- (B) contrast suffragist "promises" with the reality of the 1920's
- (C) deplore the lack of successful feminist reform in 1920's
- (D) explain a view held by feminist scholars
- (E) answer the question asked by Jane Addams

#### 4. It can be inferred from the passage that recent scholars cite the words of Jane Addams primarily in order to

- (A) suggest that women's achievement of suffrage brought about changes in government that were not taken into account by early interpretations
- (B) point out contradictions inherent in the goals of the women's suffrage movement
- (C) show why a women's voting bloc was not formed when women won the right to vote
- (D) emphasize the place of social reform movements in the struggle for suffrage for women
- (E) suggest that the old view of women's suffrage was inappropriate

#### 5. It can be inferred that the analyses of the author of the passage and the scholars mentioned in lines 20-23 differ with regard to which of the following?

- (A) The criteria they use to evaluate the success of the feminist movement during the 1920s
- (B) Their interpretations of the "promises" of the suffragist movement
- (C) The suggestions they make for achieving feminist goals
- (D) Their definitions of what constitutes a legislative victory
- (E) Their estimations of the obstacles preventing women's having achieved a voting bloc in the 1920s

#### 6. The "new scholarship" mentioned in the first paragraph suggests which of the following concerning the "promises" mentioned in lines 4-5?

- (A) Failure to keep these promises is not a measure of the success of the suffrage movement.
- (B) Failure to keep these promises caused the feminist movement to lose cohesiveness during the 1920s.
- (C) Failure to keep these promises led recent feminist scholars to reevaluate the success of the suffrage movement.
- (D) These promises included securing for women the right to hold office and the right to serve on juries.
- (E) These promises were of little importance in winning suffrage for women.

#### Passage 94

In colonial Connecticut between 1670 and 1719, women participated in one of every six civil cases, the vast majority of which were debt related. Women's participation dropped to one in ten cases after 1719, and to one in twenty by the 1770's. However, as Cornelia Hughes Dayton notes in *Women Before the Bar: Gender, Law, and Society in Connecticut, 1639-1789*, these statistics are somewhat deceptive: in fact, both the absolute numbers and the percentage of adult women participating in civil cases grew steadily throughout the eighteenth century, but the legal activity of men also increased dramatically, and at a much faster rate. Single, married, and widowed women continued to pursue their own and their husbands' debtors through legal action much as they had done in the previous century, but despite this continuity, their place in the legal system shifted dramatically. Men's commercial interests and credit networks became increasingly far-flung, owing in part to the ability of creditors to buy and sell promissory notes (legal promises to pay debts). At the same time, women's networks of credit and debt remained primarily local and personal. Dayton contends that, although still performing crucial economic services in their communities—services that contributed to the commercialization of the colonial economy—women remained for the most part outside the new economic and legal culture of the eighteenth century.

1. The passage is primarily concerned with
  - (A) reporting an author's view of a phenomenon
  - (B) disputing the reasons usually given for an unexpected change
  - (C) evaluating the conclusions reached by an author
  - (D) assessing the impact of certain legal decisions
  - (E) defending a controversial point of view
2. According to the passage, compared with women in eighteenth-century Connecticut, men were
  - (A) more likely to rely on credit and go into debt
  - (B) more likely to pursue their families' debtors
  - (C) more likely to participate in economic transactions outside their own communities
  - (D) less likely to perform economic services in their own communities.
  - (E) less likely to participate in civil cases that were not debt-related.
3. The passage suggests that which of the following best compares the economic concerns of women with those of men toward the close of the eighteenth Century in colonial Connecticut?
  - (A) Both men and women had more economic responsibilities at the end of the century than they had had at the beginning of the century.
  - (B) Women's economic activities had become less varied by the end of the century; men's economic activities had become more varied.
  - (C) Women's economic activities at the end of the century were similar to their activities at the beginning; men's economic activities changed considerably.
  - (D) Women's economic concerns at the end of the century were primarily familial; men's economic concerns were primarily political.
  - (E) Women's economic concerns at the end of the century were primarily personal; men's economic needs were primarily familial.

**Passage 95**

Many economists believe that a high rate of business savings in the United States is a necessary precursor to investment, because business savings, as opposed to personal savings, comprise almost three-quarters of the national savings rate, and the national savings rate heavily influences the overall rate of business investment.

These economists further postulate that real interest rates—the difference between the rates charged by lenders and the inflation rates—will be low when national savings exceed business investment (creating a savings surplus), and high when national savings fall below the level of business investment (creating a savings deficit).

However, during the 1960's real interest rates were often higher when the national savings surplus was large. Counterintuitive behavior also occurred when real interest rates skyrocketed from 2 percent in 1980 to 7 percent in 1982, even though national savings and investments were roughly equal throughout the period. Clearly, real interest rates respond to influences other than the savings/investment nexus. Indeed, real interest rates may themselves influence swings in the savings and investment rates. As real interest rates shot up after 1979, foreign investors poured capital into the United States, the price of domestic goods increased prohibitively abroad, and the price of foreign-made goods became lower in the United States. As a result, domestic economic activity and the ability of businesses to save and invest were restrained.

1. The passage is primarily concerned with
  - (A) contrasting trends in two historical periods
  - (B) presenting evidence that calls into question certain beliefs
  - (C) explaining the reasons for a common phenomenon
  - (D) criticizing evidence offered in support of a well-respected belief
  - (E) comparing conflicting interpretations of a theory

2. According to the passage, which of the following resulted from foreign investment in the United States after 1979?
  - (A) An increase in real interest rates
  - (B) A decrease in the savings rate of certain other nations
  - (C) An increase in American investment abroad
  - (D) An increase in the price of American goods abroad
  - (E) A decrease in the price of domestic goods sold at home

3. The author of the passage would be most likely to agree with which of the following statements regarding the economists mentioned in line 1?
  - (A) Their beliefs are contradicted by certain economic phenomena that occurred in the United States during the 1960's and the 1980's.
  - (B) Their theory fails to predict under what circumstances the prices of foreign and domestic goods are likely to increase.
  - (C) They incorrectly identify the factors other than savings and investment rates that affect real interest rates.
  - (D) Their belief is valid only for the United States economy and not necessarily for other national economies.
  - (E) They overestimate the impact of the real interest rate on the national savings and investment rates.

**Passage 96**

(The following was excerpted from material written in 1988.)

For over a decade the most common policy advice given to developing countries by international development institutions has been to copy the export-oriented path of the newly industrializing countries, the celebrated NIC's. These economies—Brazil, Hong Kong, Mexico, Singapore, South Korea, and Taiwan—burst into the world manufacturing market in the late 1960's and the 1970's; by 1978 these six economies, along with India, enjoyed unequalled growth rates for gross national product and for exports, with exports accounting for 70 percent of the developing world's manufactured exports. It was, therefore, not surprising that dozens of other countries attempted to follow their model, yet no countries—with the possible exceptions of Malaysia and Thailand—have even approached their success. In "No More NIC's," Robin Broad and John Cavanagh search for the reasons behind these failures, identifying far-reaching changes in the global economy—from synthetic substitutes for commodity exports to unsustainable levels of foreign debt—as responsible for a glut economy offering little room for new entrants. Despite these changes, the authors maintain, the World Bank and the International Monetary Fund—the foremost international development institutions—have continued to promote the NIC path as the way for heavily indebted developing countries to proceed. And yet the futility of this approach should, according to the authors, be all too apparent so many years into a period of reduced growth in world markets.

Q1: Given the information in the passage, which of the following is a true statement about the NIC's?

- A. Their economic success among developing countries has been exceeded only by the successes of Malaysia and Thailand.
- B. By 1978 they produced 70 percent of the world's manufactured exports.
- C. In the late 1970's, their growth rates for gross national product were among the highest in the world.
- D. In recent years their development has been heavily subsidized by major international development institutions.
- E. They received conflicting policy advice from international development institutions in the late 1960's and the 1970's.

Q2: The author of the passage most clearly implies that Broad and Cavanagh disagree with the World Bank and the International Monetary Fund about which of the following?

- A. The ways in which the global economy has changed in recent years
- B. The causes of the unsustainable levels of foreign debt that the developing countries have incurred in recent years
- C. The level of foreign debt that should be maintained by developing countries
- D. The degree to which international development institutions should monitor the growth of developing countries
- E. The degree to which heavily indebted developing countries should emphasize exports in their overall economic strategy

Q3: The author mentions Malaysia and Thailand in order to

- A. acknowledge the appearance of implausibility in a broad claim
- B. concede the possible existence of counter-examples to a generalization
- C. offer additional evidence in support of a disputed conclusion
- D. illustrate the broad applicability of a hypothesis
- E. admit the limited scope of a standard analysis

**Passage 97**

Many United States companies believe that the rising cost of employees' health care benefits has hurt the country's competitive position in the global market by raising production costs and thus increasing the prices of exported and domestically sold goods. As a result, these companies have shifted health care costs to employees in the form of wage deductions or high deductibles. This strategy, however, has actually hindered companies' competitiveness. For example, cost shifting threatens employees' health because many do not seek preventive screening. Also, labor relations have been damaged: the percentage of strikes in which health benefits were a major issue rose from 18 percent in 1986 to 78 percent in 1989.

Health care costs can be managed more effectively if companies intervene in the supply side of health care delivery just as they do with other key suppliers: strategies used to procure components necessary for production would work in procuring health care. For example, the make/buy decision—the decision whether to produce or purchase parts used in making a product—can be applied to health care. At one company, for example, employees receive health care at an on-site clinic maintained by the company. The clinic fosters morale, resulting in a low rate of employees leaving the company. Additionally, the company has constrained the growth of health care costs while expanding medical services.

1. The passage is primarily concerned with
  - (A) providing support for a traditional theory
  - (B) comparing several explanations for a problem
  - (C) summarizing a well-known research study
  - (D) recommending an alternative approach
  - (E) criticizing the work of a researcher
  
2. The author of the passage asserts which of the following about managing health care costs in an effective manner?
  - (A) Educating employees to use health care wisely is the best way to reduce health care costs.
  - (B) Allowing employees to select health care programs is the most effective means of controlling health care costs.
  - (C) Companies should pass rising health care costs on to employees rather than to consumers of the companies' products.
  - (D) Companies should use strategies in procuring health care similar to those used in procuring components necessary for production.
  - (E) Companies should control health care costs by reducing the extent of medical coverage rather than by shifting costs to employees.
  
3. Which of the following, if true, would provide the most support for the author's view about intervening on the supply side of health care?
  - (A) Most companies do not have enough employees to make on-site clinics cost-effective.
  - (B) Many companies with on-site clinics offer their employees the option of going outside the company's system to obtain health care.
  - (C) The costs of establishing and running an on-site clinic are demonstrably higher than the costs of paying for health care from an outside provider.
  - (D) Companies with health care clinics find that employees are unwilling to assist in controlling the costs of health care.
  - (E) Employees at companies with on-site clinics seek preventive screening and are thus less likely to delay medical treatment.

## Passage 98

Historical documents have revealed that among the Timucua of Florida, a Native American people, the best from the hunt or the harvest was given to families of high social status, even in times of economic stress.

Archaeological research suggests a similar **relationship** between social status and diet in the Dallas communities of eastern Tennessee, prehistoric Native American groups with a social organization and economy similar to that of the Timucua. The first real clue came when archaeologists discovered that skeletons of higher-status individuals tended to be several centimeters taller than those of people of lower status.

In the largest Dallas communities, some individuals were buried in the earthen mounds that served as substructures for buildings important to civic and religious affairs. These burials included quantities of finely crafted items made of nonlocal material, denoting the high political standing of those interred. Burials of lower-status individuals contained primarily utilitarian items such as cooking vessels and chipped Stone tools and are located in more remote sections of the settlements. The burials actually formed a pattern, the tallest skeletons being found in the mounds, and the heights declining as burials became more distant from the mounds. While **it is possible that taller people were simply more successful in achieving high social standing**, it is more likely that a number of stresses, including those resulting from a relatively poor diet, which could affect stature, were common among the lower-status groups.

Excavations indicate that three food categories made up the bulk of the population's diet: agricultural crops cultivated in the fertile alluvial soils where the communities were located, game, and wild edible plants, primarily nuts. Information about dietary variation among community members is derived by analyzing trace elements in human bone. Higher than normal levels of manganese, strontium, and vanadium probably indicate a less nutritious diet heavily dependent on edible plants. Very low concentrations of vanadium, which is scarce in meats and somewhat lower in nuts than in other plant resources, are good evidence of meat consumption and thus a better balanced-diet. As expected, vanadium was found in considerably greater quantities in skeletons in the burials of lower-status groups.

1. According to the passage, which of the following statements regarding earthen mounds in the Dallas communities is accurate?

- (A) They served primarily as burial grounds.
- (B) They were constructed in key locations on the perimeter of the village.
- (C) They were elements in important structures in the community.
- (D) They were used as storehouses for keeping valuable possessions safe.
- (E) They contained utilitarian items made of nonlocal materials.

2. In the highlighted text (**it is possible that taller people were simply more successful in achieving high social standing**), the author of the passage raises the possibility that taller people achieved greater success most probably in order to

- (A) suggest that two explanations for a phenomenon are equally plausible
- (B) introduce empirical data supporting a position
- (C) anticipate an objection to an argument
- (D) question the usefulness of relying solely on physical evidence
- (E) point out a weakness in a traditional argument

3. The passage suggests that the "**relationship**" mentioned in the highlighted text was initially recognized when archaeologists

- (A) attempted to trace the ancestry of the Timucua of Florida
- (B) discovered a height differential among members of subgroups in the Dallas community
- (C) realized that the Dallas communities endured periods of nutritional deprivation
- (D) began to compare the social organization and economies of the Timucua with that of the Dallas communities
- (E) became curious about differences in trace elements found in the bones of Dallas community members

4. The passage suggests which of the following about the diet of the Dallas communities?

- (A) Wild edible plants were a relatively minor element in the diet.
- (B) Game was less likely to be available to lower-status individuals than were edible plants.
- (C) The diet was composed primarily of agricultural crops when game was scarce.
- (D) The diet was obtained entirely from local food sources.
- (E) The diet was well balanced, especially at harvest time.

### Passage 99

Measuring the performance of British business in Asia from the late 1800s to the present is difficult. Profits Offer one measure, but collecting and comparing the profits and dividends (shares of profits distributed to stockholders) of thousands of enterprises present problems of data and interpretation. British overseas banks, for example, all maintained large hidden reserves to which transfers were made before published profits were declared. The actual dividends paid to stockholders were subject to factors such as taxation policy or exchange fluctuations or other factors. For example, the high dividends paid in India by many British managing companies in the early 1920s were more a response to stockholders' demands for short-term profit-taking of earnings the companies had retained from the First World War years—coupled with low rates of dividend taxation in India and a highly favorable currency exchange rate for the Indian rupee against British sterling—than the result of spectacularly successful enterprise during the period 1919 to 1921. Comparisons between different industries in different Asian countries present further difficulties.

Perhaps a more satisfactory measure of business performance is market share. In the late 1800s, British enterprise was dominant in many Asian countries; in Iran as late as the 1920s, the entire modern business sector was under British control. Although it declined at different rates in different countries, by the 1980s British business no longer played such a central role in the market of any Asian country

### 1. The author of the passage mentions reserves in British overseas banks most likely in order to

- (a) point out that published profits are less useful in measuring business success than are dividends
- (b) suggest that many British businesses in Asia were less successful than their published profits indicated
- (c) indicate that data about the profits of various businesses provide more useful information about short-term than about long-term performance
- (d) illustrate the difficulties in drawing conclusions about business success or failure from published profits
- (e) explain the role played by British overseas banks in British business transactions in the twentieth century

### 2. The passage suggests which of the following about the high dividends paid in India by many British managing companies during the early 1920s?

- (a) They were made possible by the long-term profits gained by British business in India prior to the 1920s.
- (b) They furnish evidence that undermines the accepted view of the results of low dividend-taxation rates on British business in India.
- (c) They were unusually high because the exchange rate was more favorable for the rupee against the sterling than at any other time during the twentieth century.
- (d) They were commensurate with the dividends paid by British managing companies in other Asian countries during the same period.
- (e) They provide a misleading picture of the performance of British business in India from 1919 to 1921.

### 3. The passage is primarily concerned with

- (a) refuting a theory about the performance of British business in Asia
- (b) criticizing a widely used method of collecting data about British business in Asia
- (c) considering ways to evaluate the success of British business in Asia
- (d) discussing the advantages and disadvantages of an approach to studying British business in Asia
- (e) presenting an explanation for certain unique features of British business in Asia

### Passage 100

Historically, relations between workers and employers in the United States have often been characterized by the employment-at-will doctrine, according to which the duration of employment is determined by the employer and the grounds for termination are limited only by the provisions of contracts and specific statutes. Many state courts and legislatures have reevaluated this doctrine and have modified it by expanding the concept of wrongful termination, thereby increasing employer liability. Some economic theorists suggest that such changes tend to reduce employment in states that enact them, because protecting workers against wrongful termination raises the cost of labor to employers: firms will tend to spend more time and money screening potential employees, be reluctant to terminate less-productive workers, and incur greater legal expenses. In a study that took into account differences among states, researchers Dertouzos and Karoly concluded that states with wrongful-termination laws experienced a two percent to five percent drop in their employment rate as a result of adopting these laws. They also found that the impact on employment appears to be smallest in manufacturing, where unions have already institutionalized similar protection, and in small firms, perhaps because those firms' lesser ability to pay damages makes it less profitable for employees to file wrongful-termination lawsuits against them.

### 1)The passage suggests which of the following regarding wrongful-termination lawsuits?

- A)States that do not implement wrongful-termination laws will probably see an increase in wrongful-termination lawsuits.
- B)It is less profitable to file wrongful-termination lawsuits against unionized companies than against companies without unions.
- C)A wrongful-termination lawsuit is less costly to a company than continuing the employment of an unproductive worker.
- D)Obtaining financial compensation is an important motivation for filing wrongful-termination lawsuits.
- E)Those who file wrongful-termination lawsuits are likely to be awarded larger settlements under the employment-at-will doctrine than under wrongful-termination laws.

### 2)The primary purpose of the passage is to

- A)explore the legal consequences of terminating a worker's employment
- B)define the employment-at-will doctrine and chronicle its historical evolution
- C)examine reasons underlying a trend away from the employment-at-will doctrine
- D)advocate increased protection for workers against wrongful termination by employers
- E)discuss a possible drawback of state laws intended to protect workers against wrongful termination

### 3)Which of the following best describes the organization of the passage?

- A)An idea is proposed and arguments against it are examined and then refuted.
- B)A doctrine is defined and reasons for favoring its adoption are listed.
- C)A doctrine is criticized, several possible alternatives are outlined, and one is endorsed.
- D)An idea is described, its antithesis is presented, and a synthesis of the two is proposed.
- E)A doctrine is defined, a revision to it is described, and the implications of that revision are discussed.

### Passage 101

Although the industrial union organizations that emerged under the banner of the Congress of Industrial Organizations (CIO) in the 1930s and 1940s embraced the principles of nondiscrimination and inclusion, the role of women within unions reflected the prevailing **gender ideology** of the period. Elizabeth Faue's study of the labor movement in Minneapolis argues that women were marginalized by union bureaucratization and by the separation of unions from the community politics from which industrial unionism had emerged. Faue stresses the importance of women's contribution to the development of unions at the community level, contributions that made women's ultimate fate within the city's labor movement all the more poignant: as unions reached the peak of their strength in the 1940s, the community base that had made their success possible and to which women's contributions were so vital became increasingly irrelevant to unions' institutional life.

In her study of CIO industrial unions from the 1930s to the 1970s, Nancy F. Gabin also acknowledges the pervasive male domination in the unions, but maintains that women workers were able to create a political space within some unions to advance their interests as women. Gabin shows that, despite the unions' tendency to marginalize women's issues, working women's demands were a constant undercurrent within the union, and she stresses the links between the unions' women activists and the wave of feminism that emerged in the 1960s.

### 1. According to the passage, Faue's study and Gabin's study agree in that both

- A. attribute the inclusion of women in unions to the policies of the CIO
- B. emphasize the importance of unions at the community level
- C. argue that women played important roles in the establishment of industrial union organizations
- D. suggest that women in industrial union organizations played a subordinate role
- E. suggest that the interests of women workers were incompatible with those of unions in general

### 2. Which of the following can be inferred regarding the "gender ideology" mentioned in the highlighted text?

- A. It prevented women from making significant contributions to the establishment of industrial unions.
- B. It resulted from the marginalization of women in industrial unions.
- C. It had a significant effect on the advancement of women's issues within industrial unions.
- D. Its primary tenets were nondiscrimination and inclusion.
- E. Its effects were mitigated by the growth of industrial unions.

### 3. The author of the passage is primarily concerned with

- A. presenting two views
- B. reconciling two antithetical claims
- C. assessing conflicting evidence
- D. weakening a generally accepted argument
- E. tracing the development of an ideology

## Passage 102

For many years, historians thought that the development of capitalism had not faced serious challenges in the United States. Writing in the early twentieth century, progressive historians sympathized with the battles waged by farmers and small producers against large capitalists in the late nineteenth century, but they did not question the widespread acceptance of laissez-faire (unregulated) capitalism throughout American history. Similarly, Louis Hartz, who sometimes disagreed with the Progressives, argued that Americans accepted laissez-faire capitalism without challenge because they lacked a feudal, precapitalist past. Recently, however, some scholars have argued that even though laissez-faire became the prevailing ethos in nineteenth-century America, it was not accepted without struggle. Laissez-faire capitalism, they suggest, clashed with existing religious and communitarian norms that imposed moral constraints on acquisitiveness to protect the weak from the predatory, the strong from corruption, and the entire culture from materialist excess. Buttressed by mercantilist notions that government should be both regulator and promoter of economic activity, these norms persisted long after the American Revolution helped unleash the economic forces that produced capitalism. These scholars argue that even in the late nineteenth century, with the government's role in the economy considerably diminished, laissez-faire had not triumphed completely. Hard times continued to revive popular demands for regulating business and softening the harsh edges of laissez-faire capitalism.

- 1) The primary purpose of the passage is to
- A. reveal the underlying similarities of certain arguments regarding the development of capitalism in the United States
  - B. synthesize two competing arguments regarding the development of capitalism in the United States
  - C. defend an established argument regarding the development of capitalism in the United States
  - D. summarize a scholarly refutation of an argument regarding the development of capitalism in the United States
  - E. discuss a new methodology for the study of the development of capitalism in the United States

- 2) According to the passage, the Progressive historians and the scholars mentioned in the highlighted texts disagree with regard to which of the following?
- A. Whether laissez-faire became the predominant ethos in the nineteenth-century United States
  - B. Whether moral restraints on acquisitiveness were necessary in the nineteenth century United States
  - C. The economic utility of mercantilist notions of government
  - D. The nature of the historical conditions necessary for the development of laissez-faire capitalism in the nineteenth-century United States
  - E. The existence of significant opposition to the development of laissez-faire capitalism in the nineteenth century United States

- 3) The passage suggests that the scholars mentioned in the highlighted text would agree with which of the following statements regarding the "norms" mentioned in the subsequent highlighted text?
- A. They provided a primary source of opposition to the development of laissez-faire capitalism in the United States in the nineteenth century.
  - B. Their appeal was undermined by difficult economic times in the United States at the end of the nineteenth century.
  - C. They disappeared in the United States in the late nineteenth century because of the triumph of laissez faire capitalism.
  - D. They facilitated the successful implementation of mercantilist notions of government in the United States in the nineteenth-century.
  - E. They are now recognized by historians as having been an important part of the ideology of the American Revolution.

**Passage 103**

Many United States companies believe that the rising cost of employees' health care benefits has hurt the country's competitive position in the global market by raising production costs and thus increasing the prices of exported and domestically sold goods. As a result, these companies have shifted health care costs to employees in the form of wage deductions or high deductibles. This strategy, however, has actually hindered companies' competitiveness. For example, cost shifting threatens employees' health because many do not seek preventive screening. Also, labor relations have been damaged: the percentage of strikes in which health benefits were a major issue rose from 18 percent in 1986 to 78 percent in 1989.

Health care costs can be managed more effectively if companies intervene in the supply side of health care delivery just as they do with other key suppliers: strategies used to procure components necessary for production would work in procuring health care. For example, the make/buy decision--the decision whether to produce or purchase parts used in making a product--can be applied to health care. At one company, for example, employees receive health care at an on-site clinic maintained by the company. The clinic fosters morale, resulting in a low rate of employees leaving the company. Additionally, the company has constrained the growth of health care costs while expanding medical services.

1. The passage is primarily concerned with
  - A. providing support for a traditional theory
  - B. comparing several explanations for a problem
  - C. summarizing a well-known research study
  - D. recommending an alternative approach
  - E. criticizing the work of a researcher
  
2. The author of the passage asserts which of the following about managing health care costs in an effective manner?
  - A. Educating employees to use health care wisely is the best way to reduce health care costs.
  - B. Allowing employees to select health care programs is the most effective means of controlling health care costs.
  - C. Companies should pass rising health care costs on to employees rather than to consumers of the companies' products.
  - D. Companies should use strategies in procuring health care similar to those used in procuring components necessary for production.
  - E. Companies should control health care costs by reducing the extent of medical coverage rather than by shifting costs to employees.
  
3. Which of the following, if true, would provide the most support for the author's view about intervening on the supply side of health care?
  - A. Most companies do not have enough employees to make on-site clinics cost-effective.
  - B. Many companies with on-site clinics offer their employees the option of going outside the company's system to obtain health care.
  - C. The costs of establishing and running an on-site clinic are demonstrably higher than the costs of paying for health care from an outside provider.
  - D. Companies with health care clinics find that employees are unwilling to assist in controlling the costs of health care.
  - E. Employees at companies with on-site clinics seek preventive screening and are thus less likely to delay medical treatment.

### Passage 104

Firms traditionally claim that they downsize (i.e., make permanent personnel cuts) for economic reasons, laying off supposedly unnecessary staff in an attempt to become more efficient and competitive. Organization theory would explain this reasoning as an example of the “economic rationality” that it assumes underlies all organizational activities. There is evidence that firms believe they are behaving rationally whenever they downsize; yet recent research has shown that the actual economic effects of downsizing are often negative for firms. Thus, organization theory cannot adequately explain downsizing; non-economic factors must also be considered. One such factor is the evolution of downsizing into a powerful business myth: managers simply believe that downsizing is efficacious. Moreover, downsizing nowadays is greeted favorably by the business press; the press often refers to soaring stock prices of downsizing firms (even though research shows that stocks usually rise only briefly after downsizing and then suffer a prolonged decline). Once viewed as a sign of desperation, downsizing is now viewed as a signal that firms are serious about competing in the global marketplace; such signals are received positively by key actors—financial analysts, consultants, shareholders—who supply firms with vital organizing resources. Thus, even if downsizers do not become economically more efficient, downsizing’s mythic properties give them added prestige in the business community, enhancing their survival prospects.

1. According to the passage, the “key actors” view a firm’s downsizing activities as an indication of the firm’s

- (A) troubled financial condition
- (B) inability to develop effective long-term strategies
- (C) inability to retain vital organizational resources
- (D) desire to boost its stock price
- (E) desire to become more competitive

2. The primary purpose of the passage is to

- (A) criticize firms for engaging in the practice of downsizing
- (B) analyze the negative economic impact of downsizing on firms
- (C) offer an alternative to a traditional explanation for the occurrence of downsizing
- (D) chronicle how perceptions of downsizing have changed over time
- (E) provide evidence disputing the prevalence of downsizing

3. The passage suggests which of the following about the claim that a firm will become more efficient and competitive by downsizing?

- (A) Few firms actually believe this claim to be true.
- (B) Fewer firms have been making this claim in recent years.
- (C) This claim contradicts the basic assumption of organization theory.
- (D) This claim is called into question by certain recent research.
- (E) This claim is often treated with skepticism by the business press.

4. The passage suggests that downsizing’s mythic properties can be beneficial to a downsizing firm because these properties

- (A) allow the firm to achieve significant operating efficiencies
- (B) provide the firm with access to important organizing resources
- (C) encourage a long-term increase in the firm’s stock price
- (D) make the firm less reliant on external figures such as financial analysts and consultants
- (E) discourage the firm’s competitors from entering the global marketplace

5. The author would be most likely to agree that the treatment by the business press of changes in the stock prices of downsizing firms is misleading because the press tends to

- (A) focus excessively on the short-term stock price movement of downsizing firms while paying insufficient attention to the long term
- (B) exaggerate the extent to which stock prices of downsizing firms rise in the short term
- (C) exaggerate the link between long-term stock performance and the economic viability of downsizing firms
- (D) misinterpret a long-term decline in the stock prices of downsizing firms as a sign of desperation
- (E) underestimate the impact that the press itself can have on the stock prices of downsizing firms

**Passage 105**

In the 1980's, astronomer Bohdan Paczynski proposed a way of determining whether the enormous dark halo constituting the outermost part of the Milky Way galaxy is composed of MACHO's (massive compact halo objects), which are astronomical objects too dim to be visible. Paczynski reasoned that if MACHO's make up this halo, a MACHO would occasionally drift in front of a star in the Large Magellanic Cloud, a bright galaxy near the Milky Way. The gravity of a MACHO that had so drifted, astronomers agree, would cause the star's light rays, which would otherwise diverge, to bend together so that, as observed from Earth, the star would temporarily appear to brighten, a process known as microlensing. Because many individual stars are of intrinsically variable brightness, some astronomers have contended that the brightening of intrinsically variable stars can be mistaken for microlensing. However, whereas the different colors of light emitted by an intrinsically variable star are affected differently when the star brightens, all of a star's colors are equally affected by microlensing. Thus, if a MACHO magnifies a star's red light tenfold, it will do the same to the star's blue light and yellow light. Moreover, it is highly unlikely that a star in the Large Magellanic Cloud will undergo microlensing more than once, because the chance that a second MACHO would pass in front of exactly the same star is minuscule.

1. The passage is primarily concerned with
  - A. outlining reasons why a particular theory is no longer credited by some astronomers
  - B. presenting data collected by a researcher in response to some astronomers' criticism of a particular line of reasoning
  - C. explaining why a researcher proposed a particular theory and illustrating how influential that theory has been
  - D. showing how a researcher's theory has been used to settle a dispute between the researcher and some astronomers
  - E. describing a line of reasoning put forth by a researcher and addressing a contention concerning that line of reasoning
  
2. According to the passage, Paczynski's theory presumes that if MACHO's constituted the Milky Way's dark halo, occasionally a MACHO would
  - A. drift so as to lie in a direct line between two stars in the outer Milky Way
  - B. affect the light rays of a star in the Large Magellanic Cloud with the result that the star would seem for a time to brighten
  - C. become obscured as a result of the microlensing of a star in the Large Magellanic Cloud
  - D. temporarily increase the apparent brightness of a star in the Large Magellanic Cloud by increasing the gravity of the star
  - E. magnify each color in the spectrum of a star in the Large Magellanic Cloud by a different amount
  
3. It can be inferred from the passage that which of the following would constitute the strongest evidence of the microlensing of a star in the Large Magellanic Cloud?
  - A. The brightness of such a star is observed to vary at irregular intervals.
  - B. The brightening of such a star is observed to be of shorter duration than the brightening of neighboring stars.
  - C. The red light of such a star is observed to be brighter than its yellow light and its blue light.
  - D. The red light, yellow light, and blue light of such a star are observed to be magnified temporarily by the same factor.
  - E. The red light of such a star is observed to have increased tenfold.

**Passage 106**

There is no consensus among researchers regarding what qualifies a substance as a pheromone. While most agree on a basic definition of pheromones as chemicals released by one individual of a species which, when detected by another individual of the same species, elicit a specific behavioral or physiological response, some researchers also specify that the response to pheromones must be unconscious. In addition, the distinction between pheromones and odorants—chemicals that are consciously detected as odors—can be blurry, and **some researchers** classify pheromones as a type of odorant. Evidence that pheromone responses may not involve conscious odor perception comes from the finding that in many species, pheromones are processed by the vomeronasal (or accessory olfactory) system, which uses a special structure in the nose, the vomeronasal organ (VNO), to receive chemical signals. The neural connections between the VNO and the brain are separate from those of the main olfactory system, whose processing of odorants triggers sensations of smell. But while the VNO does process many animal pheromone signals, not all animal pheromones work through the VNO. Conversely, not all chemical signals transmitted via the VNO qualify as pheromones. For example, garter snakes detect a chemical signal from earthworms—one of their favorite foods—via the VNO, and they use this signal to track their prey.

1. It can be inferred from the passage that in classifying pheromones as a type of odorant, the researchers referred to the highlighted text posit that

- (A) pheromones are perceived consciously
- (B) most pheromones are processed by the VNO
- (C) most chemical signals processed by the VNO are pheromones
- (D) Pheromone perception does not occur exclusively between members of the same species.
- (E) pheromones do not always elicit a specific behavioral or physiological response

2. According to the passage, the fact that pheromones are processed by the VNO in many animal species has been taken as evidence of which of the following?

- (A) The accessory and main olfactory systems are not separate
- (B) Odorants and pheromones are not distinct types of chemicals.
- (C) Odorants and pheromones both elicit a specific behavioral response.
- (D) Pheromones do not trigger conscious sensations of smell.
- (E) Pheromones aid animals in tracking prey.

3. The primary purpose of the passage is to

- (A) compare and contrast the ways in which the vomeronasal organ and the main olfactory system process chemicals.
- (B) summarize the debate over the role the vomeronasal organ plays in odor perception
- (C) present some of the issues involved in the debate over what constitutes a pheromone
- (D) propose a new definition of pheromones based on recent research
- (E) argue that pheromones should be classified as a type of odorant

### Passage 107

The traditional model of employer-employee relations in the United States was a “psychological contract” in which employees made long-term commitments to organizations in exchange for long-term job security, training and development, and internal opportunities for promotion. Beginning mainly with the recession in the early 1970’s, this paradigm began to unravel. Organizations began using extensive downsizing and outsourcing to decrease the number of permanent employees in the workforce. Among employees this situation has resulted in a decided shift in desire: instead of working their way up in an organization, many now prefer to work their way out. Entrepreneurship at the small business administration are now the fastest-growing majors in business schools.

Several factors have generated movement from the old paradigm to the new one. Organizations have had legitimate and pressing reasons to shift to a **new paradigm** of employer-employee relations. Large numbers of permanent employees make it difficult for organizations to respond quickly to downturns in demand by decreasing payroll costs. The enormous rights in wrongful discharge suites has created incentives for organizations to use temporary, contract, and leased employees in order to distance themselves from potential litigation problems. Moreover, top management is under increased pressure from shareholders to generate higher and higher levels of return on investment in the short run, resulting in declines in hiring, increases in layoffs, and shortage of funds for employee development.

At the same time, a lack of forthrightness on the part of organizations has led to increased cynicism among employees about management’s motivation and competence. Employees are now working 15 percent more hours per week than they were 20 years ago, but organizations acknowledge this fact only by running stress-management workshops to help employees to cope. Sales people are being asked to increase sales at the same time organizations have cut travel, phone, and advertising budgets. Employees could probably cope effectively with changes in the psychological contract if organizations were more forthright about how they were changing it. But the euphemistic jargon used by executives to justify the changes they were implementing frequently backfires; rather than engendering sympathy for management’s position, it sparks employees’ desire to be free of the organization all together. In a recent study of employees’ attitudes about management, 49 percent of the sample strongly agreed that “management will take advantage of you if given the chance.”

1. The primary purpose of the passage is to
  - A. discuss the financial implications of a recent shift in attitudes among workers
  - B. propose a new approach for businesses to increase loyalty among their employees
  - C. defend certain business practices in light of criticism of corporations, actions in a recent past
  - D. speculate about possible long term benefits of a recent change in the general business climate
  - E. consider some of the factors contributing to a major shift in employer-employee relationships
2. The passage suggests that which of the following is a legitimate reason for organizations’ shift to the new model of employer-employee relations?
  - A. Organizations tend to operate more effectively when they have a high manager-to-employee ratio.
  - B. Organizations can move their operations to less expensive locations more easily when they have fewer permanent employees.
  - C. Organizations have found that they often receive higher quality work when they engage in outsourcing.
  - D. Organizations with large pools of permanent workers risk significant financial losses if the demand for their product or service decreases.
  - E. Organizations are under increasing pressure to adopt new technologies that often obviate the need for certain workers.
3. Which of the following best characterizes the function of the final sentence of the passage (lines 30-32)?
  - A. It is such as an alternative explanation for phenomenon discussed earlier in the passage.
  - B. It provides data intended to correct a common misconception.
  - C. It further weakens an argument that is being challenged by the author.
  - D. It introduces a specific piece of evidence in support of a claim made at beginning of the final paragraph (lines 20-21).
  - E. It answers a question that is implicit in the preceding sentence (lines 27-30).
4. The passage suggests that organizations’ movement to the **“new paradigm”** (line 11) is based in part on the expectation that wrongful discharge suites against employers are?
  - A. less likely to be filed by non-managerial employees than by managers
  - B. less likely to be filed by leased employees than by contract employees
  - C. less likely to be filed by contract employees than by permanent employees
  - D. more likely to be filed by employees with a long history in the organization than by newer hirers
  - E. more likely to be filed in small organizations than in large ones

### Passage 108

One proposal for preserving rain forests is to promote the adoption of new agricultural technologies, such as improved plant varieties and use of chemical herbicides, which would increase productivity and slow deforestation by reducing demand for new cropland. Studies have shown that farmers in developing countries who have achieved certain levels of education, wealth, and security of land tenure are more likely to adopt such technologies. But these studies have focused on villages with limited land that are tied to a market economy rather than on the relatively isolated, self-sufficient communities with ample land characteristic of rain-forest regions. A recent study of the Tawahka people of the Honduran rain forest found that farmers with some formal education were more likely to adopt improved plant varieties but less likely to use chemical herbicides and that those who spoke Spanish (the language of the market economy) were more likely to adopt both technologies. Non-land wealth was also associated with more adoption of both technologies, but availability of uncultivated land reduced the incentive to employ the productivity-enhancing technologies. Researchers also measured land-tenure security: in Tawahka society, kinship ties are a more important indicator of this than are legal property rights, so researchers measured it by a household's duration of residence in its village. They found that longer residence correlated with more adoption of improved plant varieties but less adoption of chemical herbicides.

#### 1) The primary purpose of the passage is to

- A. evaluate the likelihood that a particular proposal, if implemented, would ultimately succeed in achieving its intended result
- B. question the assumption that certain technological innovations are the most effective means of realizing a particular environmental objective
- C. discuss the progress of efforts to encourage a particular traditional society to adopt certain modern agricultural methods
- D. present the results of new research suggesting that previous findings concerning one set of conditions may not be generalizable to another set of conditions
- E. weigh the relative importance of three factors in determining whether a particular strategy will be successful

#### 2) According to the passage, the proposal mentioned in line 1 is aimed at preserving rain forests by encouraging farmers in rain-forest regions to do each of the following EXCEPT

- A. adopt new agricultural technologies
- B. grow improved plant varieties
- C. decrease their use of chemical herbicides
- D. increase their productivity
- E. reduce their need to clear new land for cultivation

#### 3) The passage suggests that in the study mentioned in the highlighted text the method for gathering information about security of land tenure reflects which of the following pairs of assumptions about Tawahka society?

- A. The security of a household's land tenure depends on the strength of that household's kinship ties, and the duration of a household's residence in its village is an indication of the strength of that household's kinship ties.
- B. The ample availability of land makes security of land tenure unimportant, and the lack of a need for secure land tenure has made the concept of legal property rights unnecessary.
- C. The strength of a household's kinship ties is a more reliable indicator of that household's receptivity to new agricultural technologies than is its quantity of nonland wealth, and the duration of a household's residence in its village is a more reliable indicator of that household's security of land tenure than is the strength of its kinship ties.
- D. Security of land tenure based on kinship ties tends to make farmers more receptive to the use of improved plant varieties, and security of land tenure based on long duration of residence in a village tends to make farmers more receptive to the use of chemical herbicides.
- E. A household is more likely to be receptive to the concept of land tenure based on legal property rights if it has easy access to uncultivated land, and a household is more likely to uphold the tradition of land tenure based on kinship ties if it possesses a significant degree of non-land wealth.

#### 4) The findings of the study mentioned in the highlighted text, if valid for rain-forest regions in general, suggest that which of the following is an obstacle most likely to be faced by those wishing to promote rain-forest preservation by implementing the proposal mentioned in line 1?

- A. Lack of legal property rights tends to discourage local farmers from investing the time and resources required to successfully implement new agricultural technologies.
- B. The ability to evaluate the wider economic ramifications of adopting new agricultural technologies depends on a relatively high level of formal education.
- C. Isolation from the market economy tends to restrict local farmers' access to new agricultural technologies that could help them to increase their productivity.
- D. Ready availability of uncultivated land tends to decrease local farmers' incentive to adopt new agricultural technologies that would reduce their need to clear new land for cultivation.
- E. Traditions of self-sufficiency and reliance on kinship ties tend to diminish local farmers' receptivity to new agricultural technologies introduced by people from outside the local community.

### Passage 109

The United States government has a long-standing policy of using federal funds to keep small business viable. The Small Business Act of 1953 authorized the Small Business Administration (SBA) to enter into contracts with government agencies having procurement powers and to arrange for fulfillment of these contracts by awarding subcontracts to small businesses. In the mid 1960's, during the war on poverty years, Congress hoped to encourage minority entrepreneurs by directing such funding to minority businesses. At first this funding was directed toward minority entrepreneurs with very low incomes. A 1967 amendment to the Economic Opportunity Act directed the SBA to pay special attention to minority-owned businesses located in urban or rural areas characterized by high proportions of unemployed or low-income individuals. Since then, the answer given to the fundamental question of who the recipients should be—the most economically disadvantaged or those with the best prospects for business success—has changed, and the social goals of the programs have shifted, resulting in policy changes.

The first shift occurred during the early 1970's. While the goal of assisting the economically disadvantaged entrepreneur remained, a new goal emerged: to remedy the effects of past discrimination. In fact, in 1970 the SBA explicitly stated that their main goal was to increase the number of minority-owned businesses. At the time, minorities constituted seventeen percent of the nation's population, but only four percent of the nation's self-employed. This **ownership gap** was held to be the result of past discrimination. Increasing the number of minority-owned firms was seen as a way to remedy this problem. In that context, providing funding to minority entrepreneurs in middle- and high-income brackets seemed justified.

In the late 1970's, the goals of minority-business funding programs shifted again. At the minority business Development Agency, for example, the goal of increasing numbers of minority-owned firms was supplanted by the goal of creating and assisting more minority-owned substantive firms with future growth potential. Assisting manufacturers or wholesalers became far more important than assisting small service businesses. Minority-business funding programs were now justified as instruments for economic development, particularly for creating jobs in minority communities of high unemployment.

1. It can be inferred that the "**ownership gap**" (see underlined text) would be narrowed if which of the following were to occur?
  - (A) Minority entrepreneurs received a percentage of government contracts equal to that received by nonminority entrepreneurs.
  - (B) Middle- and high-income minority entrepreneurs gave more assistance to their low-income counterparts in the business community.
  - (C) Minority entrepreneurs hired a percentage of minority employees equal to the percentage of minority residents in their own communities.
  - (D) The percentage of self-employed minority persons rose to more than ten percent of all self-employed persons.
  - (E) Seventeen percent of all persons employed in small businesses were self-employed.
2. Which of the following best describes the function of the second paragraph in the passage as a whole?
  - (A) It narrows the scope of the topic introduced in the first paragraph.
  - (B) It presents an example of the type of change discussed in the first paragraph.
  - (C) It cites the most striking instance of historical change in a particular government policy.
  - (D) It explains the rationale for the creation of the government agency whose operations are discussed in the first paragraph.
  - (E) It presents the results of policies adopted by the federal government.
3. According to the passage, in 1970 funding to minority entrepreneurs focused primarily on which of the following?
  - (A) Alleviating chronic unemployment in urban areas
  - (B) Narrowing the ownership gap
  - (C) Assisting minority-owned businesses with growth potential
  - (D) Awarding subcontracts to businesses that encouraged community development
  - (E) Targeting the most economically disadvantaged minority-owned businesses
4. The passage mentions which of the following as a basic consideration in administering minority-business funding programs?
  - (A) Coming up with the funding for the programs
  - (B) Encouraging government agencies to assist middle- and high-income minority entrepreneurs
  - (C) Recognizing the profit potential of small service businesses in urban communities
  - (D) Determining who should be the recipients of the funding
  - (E) Determining which entrepreneurs are likely to succeed

**Passage 110**

Although many lines of evidence indicate that birds evolved from ground-dwelling theropod dinosaurs, some scientists remain unconvinced. They argue that theropods appeared too late to have given rise to birds, noting that *Archaeopteryx lithographica*—the oldest known bird—appears in the fossil record about 150 million years ago, whereas the fossil remains of various nonavian maniraptor theropods—the closest known relatives of birds—date only to about 115 million years ago. But investigators have now uncovered bones that evidently belong to nonavian maniraptors dating to the time of *Archaeopteryx*. In any case, failure to find **fossils of a predicted kind** does not rule out their existence in an undiscovered deposit. Skeptics also argue that the fused clavicles (the "wishbone") of birds differ from the unfused clavicles of theropods. This objection was reasonable when only early theropod clavicles had been discovered, but fossilized theropod clavicles that look just like the wishbone of *Archaeopteryx* have now been unearthed. Finally, some scientists argue that the complex lungs of birds could not have evolved from theropod lungs, an assertion that cannot be supported or falsified at the moment, because no fossil lungs are preserved in the paleontological record.

1. The primary purpose of the passage is to
  - A. compare the development of two hypotheses concerning the evolutionary origin of birds
  - B. suggest revisions to the standard theory of the evolutionary history of birds
  - C. evaluate the usefulness of fossil evidence in determining the evolutionary history of birds
  - D. challenge the theory that birds evolved from ground-dwelling theropod dinosaurs
  - E. respond to criticisms of the theory that birds evolved from ground-dwelling theropod dinosaurs

2. In the context of the passage, the phrase "**fossils of a predicted kind**" most likely refers to which of the following?
  - A. Theropod fossils with fused clavicles
  - B. Theropod fossils that are similar in structure to *Archaeopteryx* fossils
  - C. Theropod fossils dating back more than 150 million years
  - D. Fossils indicating the structure of theropod lungs
  - E. Fossils indicating the structure of *Archaeopteryx* lungs

3. Which of the following is mentioned in the passage as an argument made by scientists who are unconvinced that birds evolved from theropod dinosaurs?
  - A. There are no known theropod dinosaur fossils dating from a period after the time of *Archaeopteryx*.
  - B. There are no known theropod dinosaur fossils that indicate the structure of those dinosaurs' lungs.
  - C. Theropod dinosaurs appear in the fossil record about 150 million years ago.
  - D. Theropod dinosaurs did not have fused clavicles.
  - E. Theropod dinosaurs had certain bones that look just like those of *Archaeopteryx*.

## Passage 111

Anole lizard species that occur together (sympatrically) on certain Caribbean islands occupy different habitats: some live only in the grass, some only on tree trunks, and some only on twigs. These species also differ morphologically: grass dwellers are slender with long tails, tree dwellers are stocky with long legs, twig dwellers are slender but stubby-legged. **What is striking about these lizards is not that coexisting species differ in morphology and habitat use (such differences are common among closely related sympatric species), but that the same three types of habitat specialists occur on each of four islands: Puerto Rico, Cuba, Hispaniola, and Jamaica.** Moreover, the Puerto Rican twig species closely resembles the twig species of Cuba, Hispaniola, and Jamaica in morphology, habitat use, and behavior. Likewise, the specialists for other habitats are similar across the islands.

The presence of similar species on different islands could be variously explained. An ancestral species might have adapted to exploit a particular ecological niche on one island and then traveled over water to colonize other islands. Or this ancestral species might have evolved at a time when the islands were connected, which some of these islands may once have been. After the islands separated, the isolated lizard populations would have become distinct species while also retaining their ancestors' niche adaptations. Both of these scenarios imply that specialization to each niche occurred only once. Alternatively, each specialist could have arisen independently on each of the islands.

If each type of specialist evolved just once, then similar specialists on different islands would be closely related. Conversely, if the specialists evolved independently on each island, then a specialist on one island would be more closely related to other types of anoles on the same island—regardless of their ecological niches—than it would be to a similar specialist on a different island.

Biologists can infer how species are related evolutionarily by comparing DNA sequences for the same genes in different species. Species with similar DNA sequences for these genes are generally more closely related to each other than to species with less-similar DNA sequences. DNA evidence concerning the anoles led researchers to conclude that habitat specialists on one island are not closely related to the same habitat specialists elsewhere, indicating that specialists evolved independently on each island.

### 1. The primary purpose of the passage is to

- (A) describe some unusual features of anole lizard species
- (B) account for a particular type of behavior found among anole lizard species
- (C) contrast two types of evidence that have been used to support a particular hypothesis concerning anole lizard species
- (D) explain how researchers resolved a particular scientific question concerning anole lizard species
- (E) examine different explanations for a particular trait common to certain anole lizard species

### 2. Which of the following best describes the purpose of the highlighted sentence?

- (A) It raises a question about why coexisting anole lizard species occupy the different types of habitats mentioned in the first sentence.
- (B) It introduces a fact about anole lizard species that the passage will go on to explore.
- (C) It identifies a particular aspect of anole lizard behavior that distinguishes anoles from other lizard species.
- (D) It explains why one aspect of anole lizard species' habitat use has been difficult to account for.
- (E) It points out a surprising relationship between morphology and habitat use that is explained in the concluding paragraph.

### 3. It can be inferred from the passage that which of the following is true of the Cuban tree-dwelling anole lizard and the Jamaican tree-dwelling anole lizard?

- (A) They share a morphology characterized by stocky bodies and long legs.
- (B) They have bodies that are relatively slender compared to their stubby legs.
- (C) They differ significantly from one another in size.
- (D) They differ significantly from one another in behavior and habitat use.
- (E) They are genetically closely related to one another.

### 4. The passage suggests that if a grass-dwelling anole lizard species evolved on one island and then traveled over water to colonize a second island, the grass-dwelling anoles on the two islands would eventually

- (A) develop very different DNA sequences
- (B) develop into different species that are more distantly related to each other than to tree- and twig-dwelling anoles on their own islands
- (C) come to differ significantly from one another in habitat use
- (D) develop into different, but closely related, species
- (E) evolve significant morphological differences

### Passage 112

Comparable worth, as a standard applied to eliminate inequities in pay, insists that the values of certain tasks performed in dissimilar jobs can be compared. In the last decade, this approach has become a critical social policy issue, as large numbers of private-sector firms and industries as well as federal, state, and local governmental entities have adopted comparable worth policies or begun to consider doing so.

This widespread institutional awareness of comparable worth indicates increased public awareness that pay inequities— that is, situations in which pay is not "fair" because it does not reflect the true value of a job — exist in the labor market. However, the question still remains: have the gains already made in pay equity under comparable worth principles been of a precedent-setting nature or are they mostly transitory, a function of concessions made by employers to mislead female employees into believing that they have made long-term pay equity gains?

Comparable worth pay adjustments are indeed precedent-setting. Because of the principles driving them, **other mandates** that can be applied to reduce or eliminate unjustified pay gaps between male and female workers have not remedied perceived pay inequities satisfactorily for the litigants in cases in which men and women hold different jobs. But whenever comparable worth principles are applied to pay schedules, perceived unjustified pay differences are eliminated. In this sense, then, comparable worth is more comprehensive than other mandates, such as the Equal Pay Act of 1963 and Title VII of the Civil Rights Act of 1964. Neither compares tasks in dissimilar jobs (that is, jobs across occupational categories) in an effort to determine whether or not what is necessary to perform these tasks — know-how, problem-solving, and accountability — can be quantified in terms of its dollar value to the employer. Comparable worth, on the other hand, takes as its premise that certain tasks in dissimilar jobs may require a similar amount of training, effort, and skill; may carry similar responsibility; may be carried on in an environment having a similar impact upon the worker; and may have a similar dollar value to the employer.

#### 1. Which of the following most accurately states the central purpose of the passage?

- A. To criticize the implementation of a new procedure
- B. To assess the significance of a change in policy
- C. To illustrate how a new standard alters procedures
- D. To explain how a new policy is applied in specific cases
- E. To summarize the changes made to date as a result of social policy

#### 2. According to the passage, which of the following is true of comparable worth as a policy?

- A. Comparable worth policy decisions in pay-inequity cases have often failed to satisfy the complainants.
- B. Comparable worth policies have been applied to both public-sector and private-sector employee pay schedules.
- C. Comparable worth as a policy has come to be widely criticized in the past decade.
- D. Many employers have considered comparable worth as a policy but very few have actually adopted it.

E. Early implementations of comparable worth policies resulted in only transitory gains in pay equity.

#### 3. Which of the following best describes an application of the principles of comparable worth as they are described in the passage?

- A. The current pay, rates of increase, and rates of promotion for female mechanics are compared with those of male mechanics.
- B. The training, skills, and job experience of computer programmers in one division of a corporation are compared to those of programmers making more money in another division.
- C. The number of women holding top executive positions in a corporation is compared to the number of women available for promotion to those positions, and both tallies are matched to the tallies for men in the same corporation.
- D. The skills, training, and job responsibilities of the clerks in the township tax assessor's office are compared to those of the much better-paid township engineers.
- E. The working conditions of female workers in a hazardous-materials environment are reviewed and their pay schedules compared to those of all workers in similar environments across the nation

#### 4. It can be inferred from the passage that application of "other mandate" (see highlighted text) would be unlikely to result in an outcome satisfactory to the female employees in which of the following situations?

- I: males employed as long-distance truck drivers for a furniture company make \$3.50 more per hour than do females with comparable job experience employed in the same capacity.
  - II: women working in the office of a cement company contend that their jobs are as demanding and valuable as those of the men working outside in the cement factory, but the women are paid much less per hour.
  - III: a law firm employs both male and female paralegals with the same educational and career backgrounds, but the same salary for male paralegals is \$5,000 more than female paralegals.
- A. I only
  - B. II only
  - C. III only
  - D. I and II only
  - E. I and III only

#### 5. According to the passage, comparable worth principles are different in which of the following ways from other mandates intended to reduce or eliminate pay inequities?

- A. Comparable worth principles address changes in the pay schedules of male as well as female workers
- B. Comparable worth principles can be applied to employees in both the public and the private sector
- C. Comparable worth principles emphasize the training and skill of workers
- D. Comparable worth principles require changes in the employer's resource allocation
- E. Comparable worth principles can be used to quantify the value of elements of dissimilar jobs

### Passage 113

The Black Death, a severe epidemic that ravaged fourteenth century Europe, has intrigued scholars ever since Francis Gasquet's 1893 study contending that this epidemic greatly intensified the political and religious upheaval that ended the Middle Ages. Thirty-six years later, historian George Coulton agreed but, paradoxically, attributed a silver lining to the Black Death: prosperity engendered by diminished competition for food, shelter, and work led survivors of the epidemic into the Renaissance and subsequent rise of modern Europe.

In the 1930s, however, Evgeny Kosminsky and other Marxist historians claimed the epidemic was merely an ancillary factor contributing to a general agrarian crisis stemming primarily from the inevitable decay of European feudalism. In arguing that this decline of feudalism was economically determined, the Marxist asserted that the Black Death was a relatively insignificant factor. This became the prevailing view until after the Second World War, when studies of specific regions and towns revealed astonishing mortality rates ascribed to the epidemic, thus restoring the central role of the Black Death in history.

This central role of the Black Death (traditionally attributed to bubonic plague brought from Asia) has been recently challenged from another direction. Building on bacteriologist John Shrewsbury's speculations about mislabeled epidemics, zoologist Graham Twigg employs urban case studies suggesting that the rat population in Europe was both too sparse and insufficiently migratory to have spread plague. Moreover, Twigg disputes the traditional trade-ship explanation for plague transmissions by extrapolating from data on the number of dead rats aboard Nile sailing vessels in 1912. The Black Death, which he conjectures was anthrax instead of bubonic plague, therefore caused far less havoc and fewer deaths than historians typically claim.

Although correctly citing the exacting conditions needed to start or spread bubonic plague, Twigg ignores virtually a century of scholarship contradictory to his findings and employs faulty logic in his single-minded approach to the Black Death. His speculative generalizations about the numbers of rats in medieval Europe are based on isolated studies unrepresentative of medieval conditions, while his unconvincing trade-ship argument overlooks land-based caravans, the overland migration of infected rodents, and the many other animals that carry plague.

1) The passage is primarily concerned with  
(A) demonstrating the relationship between bubonic plague and the Black Death  
(B) interpreting historical and scientific works on the origins of the Black Death  
(C) employing the Black Death as a case study of disease transmission in medieval Europe  
(D) presenting aspects of past and current debate on the historical importance of the Black Death  
(E) analyzing the differences between capitalist and Marxist interpretations of the historical significance of the Black Death

2) Which of the following statements is most compatible with Kosminsky's approach to history, as it is presented in the passage?  
(A) The Middle Ages were ended primarily by the religious and political upheaval in fourteenth century Europe.  
(B) The economic consequences of the Black Death included increased competition for food, shelter, and work.  
(C) European history cannot be studied in isolation from that of the rest of the world.  
(D) The number of deaths in fourteenth-century Europe has been greatly exaggerated by other historians.  
(E) The significance of the Black Death is best explained within the context of evolving economic systems.

3) The passage suggests that Twigg believes that rats could not have spread the Black Death unless which of the following were true?  
(A) The rats escaped from ships that had been in Asia.  
(B) The rats were immune to the diseases that they carried.  
(C) The rat population was larger in medieval Europe than Twigg believes it actually was.  
(D) The rat population primarily infested densely populated areas.  
(E) The rats interacted with other animals that Twigg believes could have carried plague.

**Passage 114**

Many people believe that because wages are lower in developing countries than in developed countries, competition from developing countries in goods traded internationally will soon eliminate large numbers of jobs in developed countries. Currently, developed countries' advanced technology results in higher productivity, which accounts for their higher wages. Advanced technology is being transferred ever more speedily across borders, but even with the latest technology, productivity and wages in developing countries will remain lower than in developed countries for many years because developed countries have better infrastructure and better-educated workers. When productivity in a developing country does catch up, experience suggests that wages there will rise. Some individual firms in developing countries have raised their productivity but kept their wages (which are influenced by average productivity in the country's economy) low. However, in a developing country's economy as a whole, productivity improvements in goods traded internationally are likely to cause an increase in wages. Furthermore, if wages are not allowed to rise, the value of the country's currency will appreciate, which (from the developed countries' point of view) is the equivalent of increased wages in the developing country. And although in the past a few countries have deliberately kept their currencies undervalued, that is now much harder to do in a world where capital moves more freely.

1. The passage suggests that if the movement of capital in the world were restricted, which of the following would be likely?
  - A. Advanced technology could move more quickly from developed countries to developing countries.
  - B. Developed countries could compete more effectively for jobs with developing countries.
  - C. A country's average wages could increase without significantly increasing the sophistication of its technology or the value of its currency.
  - D. A country's productivity could increase without significantly increasing the value of its currency.
  - E. Workers could obtain higher wages by increasing their productivity.
  
2. The primary purpose of the passage is to
  - A identify the origin of a common misconception
  - B discuss the implications of a generally accepted principle
  - C present information relevant in evaluating a commonly held belief
  - D defend a controversial assertion against a variety of counterarguments
  - E explain under what circumstances a well-known phenomenon occurs

**Passage 115**

Historians have identified two dominant currents in the Russian women's movement of the late tsarist period. "Bourgeois" feminism, so called by its more radical opponents, emphasized "individualist" feminist goals such as access to education, career opportunities, and legal equality. "Socialist" feminists, by contrast, emphasized class, rather than gender, as the principal source of women's inequality and oppression, and socialist revolution, not legal reform, as the only road to emancipation and equality.

However, despite antagonism between bourgeois feminists and socialist feminists, the two movements shared certain underlying beliefs. Both regarded paid labor as the principal means by which women might attain emancipation: participation in the workplace and economic self-sufficiency, they believed, would make women socially useful and therefore deserving of equality with men. Both groups also recognized the enormous difficulties women faced when they combined paid labor with motherhood. In fact, at the First All-Russian Women's Congress in 1908, most participants advocated maternity insurance and paid maternity leave, although the intense hostility between some socialists and bourgeois feminists at the Congress made it difficult for them to recognize these areas of agreement. Finally, socialist feminists and most bourgeois feminists concurred in subordinating women's emancipation to what they considered the more important goal of liberating the entire Russian population from political oppression, economic backwardness, and social injustice

1. The passage is primarily concerned with
  - (A) identifying points of agreement between two groups
  - (B) advocating one approach to social reform over another
  - (C) contrasting two approaches to solving a political problem
  - (D) arguing that the views espoused by one political group were more radical than those espoused by another group
  - (E) criticizing historians for overlooking similarities between the views espoused by two superficially dissimilar groups
2. The passage suggests that socialists within the Russian women's movement and most bourgeois feminists believed that in Russia
  - (A) women would not achieve economic equality until they had political representation within the government
  - (B) the achievement of larger political aims should take precedence over the achievement of women's rights
  - (C) the emancipation of women would ultimately bring about the liberation of the entire Russian population from political oppression
  - (D) women's oppression was more rooted in economic inequality than was the case in other countries
  - (E) the women's movement was more ideologically divided than were women's movements in other countries
3. According to the passage, Russian socialists within the women's movement and most bourgeois feminists disagreed about which of the following?
  - (A) Whether legal reform was central to the achievement of feminist goals
  - (B) Whether paid employment was important for the achievement of equality
  - (C) Whether maternity insurance was desirable for working mothers
  - (D) Whether working mothers faced obstacles
  - (E) Whether women's emancipation should be subordinated to the liberation of the Russian population

**Passage 116**

Traditional social science models of class groups in the United States are based on economic status and assume that women's economic status derives from association with men, typically fathers or husbands, and that women therefore have more compelling common interest with men of their own economic class than with women outside it. Some feminist social scientists, by contrast, have argued that the basic division in American society is instead based on gender, and that the total female population, regardless of economic status, constitutes a distinct class. Social historian Mary Ryan, for example, has argued that in early-nineteenth-century America the identical legal status of working-class and middle-class free women outweighed the differences between women of these two classes: married women, regardless of their family's wealth, did essentially the same unpaid domestic work, and none could own property or vote. Recently, though, other feminist analysts have questioned this model, examining ways in which the condition of working-class women differs from that of middle-class women as well as from that of working-class men. Ann Oakley notes, for example, that the gap between women of different economic classes widened in the late nineteenth century: most working-class women, who performed wage labor outside the home, were excluded from the emerging middle-class ideal of femininity centered around domesticity and volunteerism.

1. The primary purpose of the passage is to
  - A. offer social historical explanations for the cultural differences between men and women in the United States
  - B. examine how the economic roles of women in the United States changed during the nineteenth century
  - C. consider differing views held by social scientists concerning women's class status in the United States
  - D. propose a feminist interpretation of class structure in the United States
  - E. outline specific distinctions between working-class women and women of the upper and middle classes
  
2. It can be inferred from the passage that the most recent feminist social science research on women and class seeks to do which of the following?
  - A. Introduce a divergent new theory about the relationship between legal status and gender
  - B. Illustrate an implicit middle-class bias in earlier feminist models of class and gender
  - C. Provide evidence for the position that gender matters more than wealth in determining class status
  - D. Remedy perceived inadequacies of both traditional social science models and earlier feminist analyses of class and gender
  - E. Challenge the economic definitions of class used by traditional social scientists
  
3. Which of the following statements best characterizes the relationship between traditional social science models of class and Ryan's model, as described in the passage?
  - (A) Ryan's model differs from the traditional model by making gender, rather than economic status, the determinant of women's class status.
  - (B) The traditional social science model of class differs from Ryan's in its assumption that women are financially dependent on men.
  - (C) Ryan's model of class and the traditional social science model both assume that women work, either within the home or for pay.
  - (D) The traditional social science model of class differs from Ryan's in that each model focuses on a different period of American history.
  - (E) Both Ryan's model of class and the traditional model consider multiple factors, including wealth, marital status, and enfranchisement, in determining women's status.

**Passage 117**

The view has prevailed for the better part of the twentieth century that small firms do not perform an important role in Western economies. Official policies in many countries have favored large units of production because there were strong reasons to believe that large firms were superior to small firms in virtually every aspect of economic performance—productivity, technological progress, and job security and compensation. However, in the 1970s, evidence began to suggest that small firms in some countries were outperforming their larger counterparts. Perhaps the best example of this trend was in the steel industry, where new firms entered the market in the form of "mini-mills," and small-firm employment expanded, while many large companies shut down plants and reduced employment. Although no systematic evidence exists to determine unequivocally whether smaller units of production are as efficient as large firms or are, in fact, more efficient, some researchers have concluded that the accumulated evidence to date indicates that small firms are at least not burdened with an inherent size disadvantage.

Thus, an alternative view has emerged in the economics literature, arguing that small firms make several important contributions to industrial markets. First, small firms are often the source of the kind of innovative activity that leads to technological change. Small firms generate market turbulence that creates additional dimensions of competition, and they also promote international competition through newly created niches. Finally, small firms in recent years have generated the preponderant share of new jobs.

However, empirical knowledge about the relative roles of large and small firms is generally based upon anecdotal evidence and case studies, and such evidence has proved inadequate to answer major questions concerning the role of small firms across various industries and nations. An additional difficulty is that it is not obvious what criteria one should use to distinguish small firms from large ones. While a "small firm" is often defined as an enterprise with fewer than 500 employees, research studies of small firms use a wide variety of definitions.

1. The passage is primarily concerned with
  - (A) dismissing a challenge to a traditional viewpoint
  - (B) suggesting a new solution to a long-standing problem
  - (C) resolving a conflict between two competing viewpoints
  - (D) discussing the emergence of an alternative viewpoint
  - (E) defending an alternative viewpoint against possible counter evidence
2. The passage suggests which of the following about the empirical study of small firms' role?
  - (A) Anecdotal evidence does not support the theory that small firms' role is significant.
  - (B) Degrees of market turbulence are the primary indicator of small firms' role.
  - (C) An examination of new niches created by small firms has provided important data for the analysis of such firms' role.
  - (D) Case studies have provided reliable evidence to answer major questions concerning small firms' role.
  - (E) A more precise definition of the term "small firm" is crucial to making a conclusive analysis about small firms' role.
3. Which of the following best describes the organization of the first paragraph of the passage?
  - (A) A viewpoint is introduced, counter evidence is presented, and a new perspective is suggested.
  - (B) Opposing viewpoints are discussed, and evidence is provided that refutes both of those viewpoints.
  - (C) A hypothesis is described, supported with specific evidence, and then reaffirmed.
  - (D) An alternative viewpoint is presented, criticized, and dismissed in light of new evidence.
  - (E) Opposing viewpoints are presented, discussed, and then found to be more similar than previously supposed.
4. According to the passage, an important contribution of small firms to industrial markets is that small firms
  - (A) operate more efficiently than large firms
  - (B) offer high job security and compensation
  - (C) cause international competition to decrease
  - (D) help prevent market turbulence from affecting competition
  - (E) frequently undertake activities that result in technological change

**Passage 118**

In 1675, Louis XIV established the Parisian seamstresses' guild, the first independent all-female guild created in over 200 years. Guild members could make and sell women's and children's clothing, but were prohibited from producing men's clothing or dresses for court women. Tailors resented the ascension of seamstresses to guild status; seamstresses, meanwhile, were impatient with the remaining restrictions on their right to clothe women.

The conflict between the guilds was not purely economic, however. A 1675 police report indicated that since so many seamstresses were already working illegally, the tailors were unlikely to suffer additional economic damage because of the seamstresses' incorporation. Moreover, guild membership held very different meanings for tailors and seamstresses. To the tailors, their status as guild members overlapped with their role as heads of household, and entitled them to employ as seamstresses female family members who did not marry outside the trade. The seamstresses, however, viewed guild membership as a **mark of independence from the patriarchal family**. Their guild was composed not of family units but of individual women who enjoyed unusual legal and economic privileges. At the conflict's center was the issue of whether tailors' female relatives should be identified as family members protected by the tailors' guild or as individuals under the jurisdiction of the seamstresses' guild.

1. The primary purpose of the passage is to
  - A. outline a scholarly debate over the impact of the Parisian seamstresses' guild
  - B. summarize sources of conflict between the newly created Parisian seamstresses' guild and the tailors' guild
  - C. describe opposing views concerning the origins of the Parisian seamstresses' guild
  - D. explore the underlying reasons for establishing an exclusively female guild in seventeenth-century Paris
  - E. correct a misconception about changes in seamstresses' economic status that took place in Paris in the late seventeenth century
2. According to the passage, one source of dissatisfaction for Parisian seamstresses after the establishment of the seamstresses' guild was that

- A. seamstresses were not allowed to make and sell clothing for all women
- B. tailors continued to have the exclusive legal right to clothe men
- C. seamstresses who were relatives of tailors were prevented from becoming members of the seamstresses' guild
- D. rivalry between individual seamstresses increased, thus hindering their ability to compete with the tailors for business
- E. seamstresses were not allowed to accept male tailors as members of the guild

3. It can be inferred from the passage that which of the following was true of seamstresses employed by relatives who were members of the tailors' guild?
  - A. They were instrumental in convincing Louis XIV to establish the seamstresses' guild.
  - B. They were rarely allowed to assist master tailors in the production of men's clothing.
  - C. They were considered by some tailors to be a threat to the tailors' monopoly.
  - D. They did not enjoy the same economic and legal privileges that members of the seamstresses' guild enjoyed.
  - E. They felt their status as working women gave them a certain degree of independence from the patriarchal family.

4. The author mentions the seamstresses' view of guild membership as a **"mark of independence from the patriarchal family"** (lines 40-41) primarily in order to
  - A. emphasize that the establishment of the seamstresses' guild had implications that were not solely economic
  - B. illustrate the conflict that existed between tailors and their female family members over membership in the tailors' guild
  - C. imply that the establishment of the seamstresses' guild ushered in a period of increased economic and social freedom for women in France
  - D. provide an explanation for the dramatic increase in the number of women working as seamstresses after 1675
  - E. indicate that members of the seamstresses' guild were financially more successful than were tailors' female relatives protected by the tailors' guild

### Passage 119

The United States hospital industry is an unusual market in that nonprofit and for-profit produce's exist simultaneously. Theoretical literature offers conflicting views on whether nonprofit hospitals are less financially efficient. Theory suggests that nonprofit hospitals are so much more interested in offering high-quality service than in making money that they frequently input more resources to provide the same output of service as for-profit hospitals. This priority might also often lead them to be less vigilant in streamlining their services—eliminating **duplication between departments**, for instance. Conversely, while profit motive is thought to encourage for-profit hospitals to attain efficient production, most theorists admit that obstacles to that efficiency remain. For-profit hospital **managers**, for example, generally work independently of hospital owners and thus may not always make maximum financial efficiency their highest priority. The literature also suggests that widespread adoption of third-party payment systems may eventually eliminate any such potential differences between the two kinds of hospitals.

The same literature offers similarly conflicting views of the efficiency of nonprofit hospitals from a social welfare perspective. Newhouse (1970) contends that nonprofit hospital managers unnecessarily expand the quality and quantity of hospital care beyond the actual needs of the community, while Weisbrod (1975) argues that nonprofit firms-hospitals included—contribute efficiently to community welfare by providing public services that might be inadequately provided by government alone.

### 1. The passage is primarily concerned with

- (A) discussing the advantages of increased efficiency in a particular type of hospital
- (B) assessing obstacles to efficiency in a particular type of hospital
- (C) describing conflicting assessments in the theoretical literature concerning particular types of hospitals
- (D) Challenging evidence used to support an argument advanced in recent theoretical literature concerning a particular type of hospital
- (E) emphasizing the advantages of one particular type of hospital over another type

### 2. The passage suggests which of the following about the **managers** mentioned in the highlighted text?

- (A) They have generally been motivated to streamline hospital services as a result of direct intervention by hospital owners.
- (B) They are more likely than managers of nonprofit hospitals to use unnecessary amounts of resources to provide services.
- (C) Their most important self-acknowledged goal is to achieve maximum financial efficiency so that hospitals show a profit.
- (D) Their decisions regarding services provided by their hospitals may not reflect hospital owners' priorities.
- (E) They do not place a high priority on maximizing profits, despite their desire to achieve efficiency.

### 3. The author mentions **duplication between departments** primarily in order to

- (A) illustrate an area in which nonprofit hospitals fail to provide adequate services
- (B) describe the outcome of nonprofit hospitals' emphasis on maintaining managerial freedom
- (C) recommend a particular change that would allow nonprofit hospitals to streamline their services
- (D) suggest a way in which nonprofit hospitals may fail to achieve maximum financial efficiency
- (E) explain why nonprofit hospitals may be able to provide more services than for-profit hospitals

**Passage 120**

The identification of femininity with morality and a belief in the innate moral superiority of women were fundamental to the cult of female domesticity in the nineteenth-century United States. Ironically, this ideology of female benevolence empowered women in the realm of social activism, enabling them to escape the confines of their traditional domestic spheres and to enter prisons, hospitals, battlefields, and slums. By following this path, some women came to wield considerable authority in the distribution of resources and services in their communities.

The sentimentalized concept of female benevolence bore little resemblance to women's actual work, which was decidedly unsentimental and businesslike, in that it involved chartering societies, raising money, and paying salaries. Moreover, in the face of legal limitations on their right to control money and property, women had to find ingenious legal ways to run and finance organized philanthropy. In contrast to the day-to-day reality of this work, the idealized image of female benevolence lent a sentimental and gracious aura of altruism to the very real authority and privilege that some women commanded—which explains why some women activists clung tenaciously to this ideology. But clinging to this ideology also prevented these women from even attempting to gain true political power because it implied a moral purity that precluded participation in the messy world of partisan politics.

1. According to the passage, the ideology of female benevolence was consistent with women taking part in each of the following spheres of activity EXCEPT

- (A) organized philanthropy
- (B) domestic life
- (C) electoral politics
- (D) fund-raising for worthy causes
- (E) social work

2. Information in the passage suggests that the author would be most likely to agree with which of the following statements concerning the cult of female domesticity?

- (A) The cult of female domesticity developed independently of the concept of female benevolence.
- (B) The cult of female domesticity was incompatible with women's participation in social activism.

- (C) The cult of female domesticity incorporated ideological elements that actually helped some women to escape from their traditional domestic roles.
- (D) The original motivation behind the promotion of the cult of female domesticity was to exclude women from partisan politics.
- (E) The growth of organized philanthropy in the nineteenth-century United States is ultimately attributable to the cult of female domesticity.

3. Which of the following best summarizes the main point of the passage?

- (A) The identification of femininity with morality promoted the notion of women's moral purity while excluding women from positions of authority in their communities.
- (B) The belief in women's innate moral superiority allowed women to exercise political power without participating in partisan politics.
- (C) The cult of female domesticity helped some women to gain power and privilege but kept most women confined to the domestic sphere.
- (D) The ideology of female benevolence empowered women in the realm of social activism but placed limits on their direct political power.
- (E) The idealization of female altruism enabled women to engage in philanthropic activities but prevented them from managing money and property.

4. It can be inferred from the passage that the author believes which of the following about women's relationship to politics in the nineteenth-century United States?

- (A) social activism was the best path to political power for women.
- (B) had women wished to seek true political power they would have had to abandon the ideology of female benevolence.
- (C) women's desire for true political power was the primary cause of their eventual abandonment of the ideology of female benevolence.
- (D) only women in positions of authority in their communities exercised political influence indirectly through men.
- (E) most men believed that they were protecting women by excluding them from politics.

**Passage 121**

Most farmers attempting to control slugs and snails turn to baited slug poison, or molluscicide, which usually consists of a bran pellet containing either methiocarb or metaldehyde. Both chemicals are neurotoxins that disrupt that part of the brain charged with making the mouth move in a coordinated fashion—the "central pattern generator"—as the slug feeds. Thus, both neurotoxins, while somewhat effective, interfere with the slugs' feeding behavior and limit their ingestion of the poison, increasing the probability that some will stop feeding before receiving a lethal dose. Moreover, slugs are not the only consumers of these poisons: methiocarb may be toxic to a variety of species, including varieties of worms, carabid beetles, and fish.

Researchers are experimenting with an **alternative compound** based on aluminum, which may solve these problems, but this may well have a limited future as we learn more about the hazards of aluminum in the environment. For example, some researchers suggest that acid rain kills trees by mobilizing aluminum in the soil, while others have noted that the human disease Alzheimer's is more prevalent in areas where levels of aluminum in the soil are high. With farmers losing as much as 20 percent of their crops to slugs and snails even after treatment with currently available molluscicides, there is considerable incentive for researchers to come up with better and environmentally safer solutions.

1. In the passage, the author is primarily concerned with  
(A) describing the limitations of molluscicides that affect feeding behavior  
(B) proposing alternatives to current methods of controlling slugs and snails  
(C) emphasizing the need for an alternative to currently available molluscicides  
(D) explaining how molluscicides are used to control slugs and snails  
(E) criticizing the use of hazardous material for controlling slugs and snails

2. The author suggests that which of the following is true of the "alternative compound" mentioned in the highlighted text?

- (A) It is more effective in destroying snails than in destroying slugs.
- (B) It begins to affect slugs' feeding behavior before they ingest a lethal dose.
- (C) It affects more species of fish than does metaldehyde.
- (D) It may not be environmentally safer than methiocarb.
- (E) It may be less damaging to trees than metaldehyde.

3. The author cites which of the following as a disadvantage of methiocarb?

- (A) It contains high levels of aluminum.
- (B) It may react with acid rain to kill trees.
- (C) It has been associated with Alzheimer's disease.
- (D) It may be toxic to some species of fish.
- (E) It may not be as effective in killing slugs as metaldehyde is

4. The passage suggests that methiocarb and metaldehyde would be more effective as slug poisons if it were true that they

- (A) disrupt the slug's digestive processes rather than its reproductive functions
- (B) reduce the slug's ability to taste food
- (C) begin to affect the feeding behavior of a slug only after it has ingested a lethal dose
- (D) reach the central pattern generator more quickly
- (E) accumulate only in the central pattern generator rather than throughout the brain

**Passage 122**

Many researchers regard Thailand's recent economic growth, as reflected by its gross domestic product (GDP) growth rates, as an example of the success of a modern technological development strategy based on the market economics of industrialized countries. Yet by focusing solely on aggregate economic growth data as the measure of Thailand's development, these researchers have overlooked the economic impact of rural development projects that improve people's daily lives at the village level- such as the cooperative raising of water buffalo, improved sanitation, and the development of food crops both for consumption and for sale at local markets; such projects are not adequately reflected in the country's GDP. These researchers, influenced by Robert Heilbroner's now outdated development theory, tend to view nontechnological development as an obstacle to progress. Heilbroner's theory has become doctrine in some economics textbooks: for example, Monte Palmer disparages nontechnological rural development projects as inhibiting constructive change. Yet as Ann Kelleher's two recent case studies of the Thai villages Non Muang and Dong Keng illustrate, the nontechnological-versus-technological dichotomy can lead researchers not only to overlook real advances achieved by rural development projects but also mistakenly to conclude that because such advances are initiated by rural leaders and are based on traditional values and practices, they retard **"real"** economic development.

1. The primary purpose of the passage is to:
  - A. explain the true reasons for the increase in the Thailand's GDP
  - B. argue for the adoption of certain rural development projects
  - C. question the value of technological development in Thailand
  - D. criticize certain assumptions about economic development in Thailand
  - E. compare traditional and modern development strategies in Thailand
  
2. The author of the passage cites the work of Palmer in order to give an example of
  - A. a recent case study of rural development projects in Thai villages
  - B. current research that has attempted to reassess Thailand's economic development
  - C. an economics textbook that views nontechnological development as an obstacle to progress
  - D. the prevalence of the view that regards nontechnological development as beneficial but inefficient
  - E. a portrayal of nontechnological development projects as promoting constructive change
  
3. It can be inferred from the passage that the term **"real" in** line 36 most likely refers to economic development that is
  - A. based on a technological development strategy
  - B. not necessarily favored by most researchers
  - C. initiated by rural leader
  - D. a reflection of traditional values and practices
  - E. difficult to measure statistically

### Passage 123

Dendrochronology, the study of tree-ring records to glean information about the past, is possible because each year a tree adds a new layer of wood between the existing wood and the bark. In temperate and subpolar climates, cells added at the growing season's start are large and thin-walled, but later the new cells that develop are smaller and thick-walled; the growing season is followed by a period of dormancy. When a tree trunk is viewed in cross section, a boundary line is normally visible between the small-celled wood added at the end of the growing season in the previous year and the large-celled spring wood of the following year's growing season. The annual growth pattern appears as a series of larger and larger rings. In wet years rings are broad; during drought years they are narrow, since the trees grow less. Often, ring patterns of dead trees of different, but overlapping, ages can be correlated to provide an extended index of past climate conditions.

However, trees that grew in areas with a steady supply of groundwater show little variation in ring width from year to year; these "complacent" rings tell nothing about changes in climate. And trees in extremely dry regions may go a year or two without adding any rings, thereby introducing **uncertainties** into the count. Certain species sometimes add more than one ring in a single year, when growth halts temporarily and then starts again.

1. The passage suggests which of the following about the ring patterns of two trees that grew in the same area and that were of different, but overlapping, ages?
  - A. The rings corresponding to the overlapping years would often exhibit similar patterns.
  - B. The rings corresponding to the years in which only one of the trees was alive would not reliably indicate the climate conditions of those years.
  - C. The rings corresponding to the overlapping years would exhibit similar patterns only if the trees were of the same species.
  - D. The rings corresponding to the overlapping years could not be complacent rings.
  - E. The rings corresponding to the overlapping years would provide a more reliable index of dry climate conditions than of wet conditions.

2. In the highlighted text, "uncertainties" refers to
  - A. dendrochronologists' failure to consider the prevalence of erratic weather patterns
  - B. inconsistencies introduced because of changes in methodology
  - C. some tree species' tendency to deviate from the norm
  - D. the lack of detectable variation in trees with complacent rings
  - E. the lack of perfect correlation between the number of a tree's rings and its age

3. The passage is primarily concerned with
  - A. evaluating the effect of climate on the growth of trees of different species
  - B. questioning the validity of a method used to study tree-ring records
  - C. explaining how climatic conditions can be deduced from tree-ring patterns
  - D. outlining the relation between tree size and cell structure within the tree
  - E. tracing the development of a scientific method of analyzing tree-ring patterns

## Passage 124

Citing the fact that the real gross domestic product (GDP) per capita was higher in 1997 than ever before, some **journalists** have argued that the United States economy performed ideally in 1997. However, **the real GDP is almost always higher than ever before**; it falls only during recessions. One point these journalists overlooked is that in 1997, as in the twenty-four years immediately preceding it, the real GDP per capita grew nearly one-half percent a year more slowly than it had on average between 1873 and 1973. Were the 1997 economy as robust as claimed, the growth rate of real GDP per capita in 1997 would have surpassed the average growth rate of real GDP per capita between 1873 and 1973 because over fifty percent of the population worked for wages in 1997 whereas only forty percent worked for wages between 1873 and 1973. If the growth rate of labor productivity (output per hour of goods and services) in 1997 had equaled its average growth rate between 1873 and 1973 of more than two percent, then, given the proportionately larger workforce that existed in 1997, real GDP per capita in 1997 would have been higher than it actually was, since output is a major factor in GDP. However, because labor productivity grew by only one percent in 1997, real GDP per capita grew more slowly in 1997 than it had on average between 1873 and 1973.

1. The passage is primarily concerned with
- (A) comparing various measures used to assess the performance of the United States economy in 1997
  - (B) providing evidence that the performance of the United States economy in 1997 was similar to its performance between 1873 and 1973
  - (C) evaluating an argument concerning the performance of the United States economy in 1997
  - (D) examining the consequences of a popular misconception about the performance of the United States economy in 1997
  - (E) supporting an assertion made by journalists about the performance of the United States economy in 1997

2. According to the passage, which of the following is true of the average rate at which real GDP per capita grew in the twenty-four years immediately before 1997?
- (A) It was less than it had been between 1873 and 1973 because only forty percent of the population worked for wages between 1873 and 1973.
  - (B) It was less than it had been between 1873 and 1973 because labor productivity grew less between 1973 and 1997 than it had between 1873 and 1973.
  - (C) It was less than it had been between 1873 and 1973 as a result of an increase in the percentage of the population earning wages during these years.
  - (D) It was less than the average rate at which real GDP per capita grew between 1873 and 1973.
  - (E) It was less than the rate at which real GDP per capita grew in 1997.

3. It can be inferred from the passage that which of the following is the reason that the author faults the **journalists** referred to in highlight text?
- (A) They believe that the real GDP per capita in 1997 was higher than the real GDP per capita had ever been before.
  - (B) They argue that the rate at which real GDP per capita grew in 1997 was faster than the average rate at which it had grown between 1873 and 1973.
  - (C) They overestimate the effect of labor productivity on the real GDP per capita in 1997.
  - (D) They overestimate the amount by which real GDP per capita in 1997 surpassed real GDP per capita in earlier years.
  - (E) They fail to consider the real GDP per capita in 1997 within an appropriate historical context.

4. The author of the passage asserts that **"the real GDP is almost always higher than ever before"** (see highlighted text) most probably in order to
- (A) show that a fact cited in support of a claim is inaccurate
  - (B) show that a fact cited in support of a claim actually contradicts the claim
  - (C) show that a fact cited in support of a claim does not prove the claim
  - (D) explain why a fact cited in support of a claim is relevant to the claim
  - (E) explain how the proponent of a claim selected a fact cited in support of the claim

**Passage 125**

Historians have identified two dominant currents in the Russian women's movement of the late tsarist period. "Bourgeois" feminism, so called by its more radical opponents, emphasized "individualist" feminist goals such as access to education, career opportunities, and legal equality. "Socialist" feminists, by contrast, emphasized class, rather than gender, as the principal source of women's inequality and oppression, and socialist revolution, not legal reform, as the only road to emancipation and equality.

However, despite antagonism between bourgeois feminists and socialist feminists, the two movements shared certain underlying beliefs. Both regarded paid labor as the principal means by which women might attain emancipation: participation in the workplace and economic self-sufficiency, they believed, would make women socially useful and therefore deserving of equality with men. Both groups also recognized the enormous difficulties women faced when they combined paid labor with motherhood. In fact, at the First All-Russian Women's Congress in 1908, most participants advocated maternity insurance and paid maternity leave, although the intense hostility between some socialists and bourgeois feminists at the Congress made it difficult for them to recognize these areas of agreement. Finally, socialist feminists and most bourgeois feminists concurred in subordinating women's emancipation to what they considered the more important goal of liberating the entire Russian population from political oppression, economic backwardness, and social injustice.

1. The passage is primarily concerned with
  - (A) identifying points of agreement between two groups
  - (B) advocating one approach to social reform over another
  - (C) contrasting two approaches to solving a political problem
  - (D) arguing that the views espoused by one political group were more radical than those espoused by another group
  - (E) criticizing historians for overlooking similarities between the views espoused by two superficially dissimilar groups
2. The passage suggests that socialists within the Russian women's movement and most bourgeois feminists believed that in Russia
  - (A) women would not achieve economic equality until they had political representation within the government
  - (B) the achievement of larger political aims should take precedence over the achievement of women's rights
  - (C) the emancipation of women would ultimately bring about the liberation of the entire Russian population from political oppression
  - (D) women's oppression was more rooted in economic inequality than was the case in other countries
  - (E) the women's movement was more ideologically divided than were women's movements in other countries
3. According to the passage, Russian socialists within the women's movement and most bourgeois feminists disagreed about which of the following?
  - (A) Whether legal reform was central to the achievement of feminist goals
  - (B) Whether paid employment was important for the achievement of equality
  - (C) Whether maternity insurance was desirable for working mothers
  - (D) Whether working mothers faced obstacles
  - (E) Whether women's emancipation should be subordinated to the liberation of the Russian population

## Passage 126

The system of patent-granting, which confers temporary monopolies for the exploitation of new technologies, was originally established as an incentive to the pursuit of risky new ideas. Yet studies of the most patent-conscious business of all—the semiconductor industry—suggest that firms do not necessarily become more innovative as they increase their patenting activity. Ziedonis and Hall, for example, found that investment in research and development (a reasonable proxy for innovation) did not substantially increase between 1982 and 1992, the industry’s most feverish period of patenting. Instead, semiconductor firms simply squeezed more patents out of existing research and development expenditures. Moreover, Ziedonis and Hall found that as patenting activity at semiconductor firms increased in the 1980’s, the consensus among industry employees was that the average quality of their firms’ patents declined. Though patent quality is a difficult notion to measure, the number of times a patent is cited in the technical literature is a reasonable yardstick, and citations per semiconductor patent did decline during the 1980’s. This decline in quality may be related to changes in the way semiconductor firms managed their patenting process: rather than patenting to win exclusive rights to a valuable new technology, patents were filed more for strategic purposes, to be used as bargaining chips to ward off infringement suites or as a means to block competitors’ products.

### 1. The passage is primarily concerned with discussing

- (A) a study suggesting that the semiconductor industry’s approach to patenting during the period from 1982 to 1992 yielded unanticipated results
- (B) a study of the semiconductor industry during the period from 1982 to 1992 that advocates certain changes in the industry’s management of the patenting process
- (C) the connection between patenting and innovation in the semiconductor industry during the period from 1982 to 1992
- (D) reasons that investment in research and development in the semiconductor industry did not increase significantly during the period from 1982 to 1992
- (E) certain factors that made the period from 1982 to 1992 a time of intense patenting activity in the semiconductor industry

### 2. The passage suggests which of the following about patenting in the semiconductor industry during the period from 1982 to 1992 ?

- (A) The declining number of citations per semiconductor patent in the technical literature undermines the notion that patenting activity increased during this period.
- (B) A decline in patent quality forced firms to change the way they managed the patenting process.
- (C) Increased efficiencies allowed firms to derive more patents from existing research and development expenditures.

- (D) Firms’ emphasis on filing patents for strategic purposes may have contributed to a decline in patent quality.
- (E) Firms’ attempts to derive more patents from existing research and development expenditures may have contributed to a decline in infringement suites.

### 3. The passage makes which of the following claims about patent quality in the semiconductor industry?

- (A) It was higher in the early 1980’s than it was a decade later.
- (B) It is largely independent of the number of patents granted.
- (C) It changed between 1982 and 1992 in ways that were linked to changes in research and development expenditures.
- (D) It is not adequately discussed in the industry’s technical literature.
- (E) It was measured by inappropriate means during the period from 1982 to 1992.

### 4. Which of the following, if true, would most clearly serve to weaken the author’s claim about what constitutes a reasonable yardstick for measuring patent quality?

- (A) It is more difficult to have an article accepted for publication in the technical literature of the semiconductor industry than it is in the technical literature of most other industries.
- (B) Many of the highest-quality semiconductor patents are cited numerous times in the technical literature.
- (C) It is difficult for someone not familiar with the technical literature to recognize what constitutes an innovative semiconductor patent.
- (D) There were more citations made per semiconductor patent in the technical literature in the 1970’s than in the 1980’s.
- (E) Low-quality patents tend to be discussed in the technical literature as frequently as high-quality patents.

### 5. The passage suggests that the use of patents as bargaining chips to ward off infringement suits

- (A). was rarely successful during the 1980s
- (B). became increasingly infrequent in the 1980s
- (C). does not fulfill the intended purpose of the patent-granting system
- (D). is a consequence of the decline in patent quality
- (E). is discussed increasingly in the semiconductor industry’s technical literature

## Passage 127

The United States government has a long-standing policy of using federal funds to keep small business viable. The Small Business Act of 1953 authorized the Small Business Administration (SBA) to enter into contracts with government agencies having procurement powers and to arrange for fulfillment of these contracts by awarding subcontracts to small businesses. In the mid- 1960's, during the war on poverty years, Congress hoped to encourage minority entrepreneurs by directing such funding to minority businesses. At first this funding was directed toward minority entrepreneurs with very low incomes. A 1967 amendment to the Economic Opportunity Act directed the SBA to pay special attention to minority-owned businesses located in urban or rural areas characterized by high proportions of unemployed or low-income individuals. Since then, the answer given to the fundamental question of who the recipients should be—the most economically disadvantaged or those with the best prospects for business success—has changed, and the social goals of the programs have shifted, resulting in policy changes.

The first shift occurred during the early 1970's. While the goal of assisting the economically disadvantaged entrepreneur remained, a new goal emerged: to remedy the effects of past discrimination. In fact, in 1970 the SBA explicitly stated that their main goal was to increase the number of minority-owned businesses. At the time, minorities constituted seventeen percent of the nation's population, but only four percent of the nation's self- employed. This **ownership gap** was held to be the result of past discrimination. Increasing the number of minority-owned firms was seen as a way to remedy this problem. In that context, providing funding to minority entrepreneurs in middle- and high-income brackets seemed justified.

In the late 1970's, the goals of minority-business funding programs shifted again. At the Minority Business Development Agency, for example, the goal of increasing numbers of minority-owned firms was supplanted by the goal of creating and assisting more minority-owned substantive firms with future growth potential. Assisting manufacturers or wholesalers became far more important than assisting small service businesses. Minority-business funding programs were now justified as instruments for economic development, particularly for creating jobs in minority communities of high unemployment.

1. It can be inferred that the "ownership gap" (see highlighted text) would be narrowed if which of the following were to occur?

A. Minority entrepreneurs received a percentage of government contracts equal to that received by nonminority entrepreneurs.

B. Middle- and high-income minority entrepreneurs gave more assistance to their low-income counterparts in the business community.

C. Minority entrepreneurs hired a percentage of minority employees equal to the percentage of minority residents in their own communities.

D. The percentage of self-employed minority persons rose to more than ten percent of all self-employed persons.

E. Seventeen percent of all persons employed in small businesses were self-employed.

2. According to the passage, in 1970 funding to minority entrepreneurs focused primarily on which of the following?

A. Alleviating chronic unemployment in urban areas

B. Narrowing the ownership gap

C. Assisting minority-owned businesses with growth potential

D. Awarding subcontracts to businesses that encouraged community development

E. Targeting the most economically disadvantaged minority-owned businesses

3. Which of the following best describes the function of the second paragraph in the passage as a whole?

A. It narrows the scope of the topic introduced in the first paragraph.

B. It presents an example of the type of change discussed in the first paragraph.

C. It cites the most striking instance of historical change in a particular government policy.

D. It explains the rationale for the creation of the government agency whose operations are discussed in the first paragraph.

E. It presents the results of policies adopted by the federal government.

4. The passage mentions which of the following as a basic consideration in administering minority-business funding programs?

A. Coming up with funding for the programs

B. Encouraging government agencies to assist middle and high-income minority entrepreneurs

C. Recognizing the profit potential of small service businesses in urban communities

D. Determining who should be the recipients of the funding

E. Determining which entrepreneurs are likely to succeed

5. The primary purpose of the passage is to

A. discuss historical changes in a government policy

B. describe the role of Congress in regulating the work of the SBA

C. contrast types of funding sources used by minority businesses

D. correct a misconception about minority entrepreneurship

E. advocate an alternative approach to funding minority entrepreneurs

## Passage 128

The modern multinational corporation is described as having originated when the owner-managers of nineteenth-century British firms carrying on international trade were replaced by teams of salaried managers organized into hierarchies. Increases in the volume of transactions in such firms are commonly believed to have necessitated this structural change. Nineteenth-century inventions like the steamship and the telegraph, by facilitating coordination of managerial activities, are described as key factors. Sixteenth- and seventeenth-century chartered trading companies, despite the international scope of their activities, are usually considered irrelevant to this discussion: the volume of their transactions is assumed to have been too low and the communications and transport of their day too primitive to make comparisons with modern multinationals interesting.

In reality, however, early trading companies successfully purchased and outfitted ships, built and operated offices and warehouses, manufactured trade goods for use abroad, maintained trading posts and production facilities overseas, procured goods for import, and sold those goods both at home and in other countries. The large volume of transactions associated with these activities seems to have necessitated hierarchical management structures well before the advent of modern communications and transportation. For example, in the Hudson's Bay Company, each far-flung trading outpost was managed by a salaried agent, who carried out the trade with the Native Americans, managed day-to-day operations, and oversaw the post's workers and servants. One chief agent, answerable to the Court of Directors in London through the correspondence committee, was appointed with control over all of the agents on the bay.

The early trading companies did differ strikingly from modern multinationals in many respects. They depended heavily on the national governments of their home countries and thus characteristically acted abroad to promote national interests. Their top managers were typically owners with a substantial minority share, whereas senior managers' holdings in modern multinationals are usually insignificant. They operated in a pre-industrial world, grafting a system of capitalist international trade onto a pre-modern system of artisan and peasant production. Despite these differences, however, early trading companies organized effectively in remarkably modern ways and merit further study as analogues of more modern structures.

### 1. The author's main point is that

- (A) modern multinationals originated in the sixteenth and seventeenth centuries with the establishment of chartered trading companies
- (B) the success of early chartered trading companies, like that of modern multinationals, depended primarily on their ability to carry out complex operations
- (C) early chartered trading companies should be more seriously considered by scholars studying the origins of modern multinationals
- (D) scholars are quite mistaken concerning the origins of modern multinationals
- (E) the management structures of early chartered trading companies are fundamentally the same as those of modern multinationals

### 2. With which of the following generalizations regarding management structures would the author of the passage most probably agree?

- (A) Hierarchical management structures are the most efficient management structures possible in a modern context.
- (B) Firms that routinely have a high volume of business transactions find it necessary to adopt hierarchical management structures.
- (C) Hierarchical management structures cannot be successfully implemented without modern communications and transportation.
- (D) Modern multinational firms with a relatively small volume of business transactions usually do not have hierarchically organized management structures.
- (E) Companies that adopt hierarchical management structures usually do so in order to facilitate expansion into foreign trade.

### 3. The passage suggests that modern multinationals differ from early chartered trading companies in that

- (A) the top managers of modern multinationals own stock in their own companies rather than simply receiving a salary
- (B) modern multinationals depend on a system of capitalist international trade rather than on less modern trading systems
- (C) modern multinationals have operations in a number of different foreign countries rather than merely in one or two
- (D) the operations of modern multinationals are highly profitable despite the more stringent environmental and safety regulations of modern governments
- (E) the overseas operations of modern multinationals are not governed by the national interests of their home countries

### 4. According to the passage, early chartered trading companies are usually described as

- (A) irrelevant to a discussion of the origins of the modern multinational corporation
- (B) interesting but ultimately too unusual to be good subjects for economic study
- (C) analogues of nineteenth-century British trading firms
- (D) rudimentary and very early forms of the modern multinational corporation
- (E) important national institutions because they existed to further the political aims of the governments of their home countries

## Passage 128

The modern multinational corporation is described as having originated when the owner-managers of nineteenth-century British firms carrying on international trade were replaced by teams of salaried managers organized into hierarchies. Increases in the volume of transactions in such firms are commonly believed to have necessitated this structural change. Nineteenth-century inventions like the steamship and the telegraph, by facilitating coordination of managerial activities, are described as key factors. Sixteenth- and seventeenth-century chartered trading companies, despite the international scope of their activities, are usually considered irrelevant to this discussion: the volume of their transactions is assumed to have been too low and the communications and transport of their day too primitive to make comparisons with modern multinationals interesting.

In reality, however, early trading companies successfully purchased and outfitted ships, built and operated offices and warehouses, manufactured trade goods for use abroad, maintained trading posts and production facilities overseas, procured goods for import, and sold those goods both at home and in other countries. The large volume of transactions associated with these activities seems to have necessitated hierarchical management structures well before the advent of modern communications and transportation. For example, in the Hudson's Bay Company, each far-flung trading outpost was managed by a salaried agent, who carried out the trade with the Native Americans, managed day-to-day operations, and oversaw the post's workers and servants. One chief agent, answerable to the Court of Directors in London through the correspondence committee, was appointed with control over all of the agents on the bay.

The early trading companies did differ strikingly from modern multinationals in many respects. They depended heavily on the national governments of their home countries and thus characteristically acted abroad to promote national interests. Their top managers were typically owners with a substantial minority share, whereas senior managers' holdings in modern multinationals are usually insignificant. They operated in a pre-industrial world, grafting a system of capitalist international trade onto a pre-modern system of artisan and peasant production. Despite these differences, however, early trading companies organized effectively in remarkably modern ways and merit further study as analogues of more modern structures.

### 5. It can be inferred from the passage that the author would characterize the activities engaged in by early chartered trading companies as being

- (A) complex enough in scope to require a substantial amount of planning and coordination on the part of management
- (B) too simple to be considered similar to those of a modern multinational corporation
- (C) as intricate as those carried out by the largest multinational corporations today

- (D) often unprofitable due to slow communications and unreliable means of transportation
- (E) hampered by the political demands imposed on them by the governments of their home countries

### 6. The author lists the various activities of early chartered trading companies in order to

- (A) analyze the various ways in which these activities contributed to changes in management structure in such companies
- (B) demonstrate that the volume of business transactions of such companies exceeded that of earlier firms
- (C) refute the view that the volume of business undertaken by such companies was relatively low
- (D) emphasize the international scope of these companies' operations
- (E) support the argument that such firms coordinated such activities by using available means of communication and transport

### 7. The author mentions the artisan and peasant production systems of early chartered trading companies as an example of

- (A) an area of operations of these companies that was unhampered by rudimentary systems of communications and transport
- (B) a similarity that allows fruitful comparison of these companies with modern multinationals
- (C) a positive achievement of these companies in the face of various difficulties
- (D) a system that could not have emerged in the absence of management hierarchies
- (E) a characteristic that distinguishes these companies from modern multinationals

### 8. The passage suggests that one of the reasons that early chartered trading companies deserve comparison with early modern multinationals is

- (A) the degree to which they both depended on new technology
- (B) the similar nature of their management structures
- (C) similarities in their top managements' degree of ownership in the company
- (D) their common dependence on political stability abroad in order to carry on foreign operations
- (E) their common tendency to revolutionize systems of production

### Passage 129

The new school of political history that emerged in the 1960's and 1970's sought to go beyond the traditional focus of political historians on leaders and government institutions by examining directly the political practices of ordinary citizens. Like the old approach, however, this new approach excluded women. The very techniques these historians used to uncover mass political behavior in the nineteenth-century United States—quantitative analyses of election returns, for example—were useless in analyzing the political activities of women, who were denied the vote until 1920.

By redefining "political activity," historian Paula Baker has developed a political history that includes women. She concludes that among ordinary citizens, political activism by women in the nineteenth century prefigured trends in twentieth-century politics. Defining "politics" as "any action taken to affect the course of behavior of government or of the community," Baker concludes that, while voting and holding office were restricted to men, women in the nineteenth century organized themselves into societies committed to social issues such as temperance and poverty. In other words, Baker contends, women activists were early practitioners of nonpartisan, issue-oriented politics and thus were more interested in enlisting lawmakers, regardless of their party affiliation, on behalf of certain issues than in ensuring that one party or another won an election. In the twentieth century, more men drew closer to women's ideas about politics and took up modes of issue-oriented politics that Baker sees women as having pioneered.

#### 1. The primary purpose of the passage is to

- (A) enumerate reason why both traditional scholarly methods and newer scholarly methods have limitations
- (B) identify a shortcoming in a scholarly approach and describe an alternative approach
- (C) provide empirical data to support a long-held scholarly assumption
- (D) compare two scholarly publications on the basis of their authors' backgrounds
- (E) attempt to provide a partial answer to a long-standing scholarly dilemma

#### 2. The passage suggests which of the following concerning the techniques used by the new political historians described in the first paragraph of the passage?

- (A) They involved the extensive use of the biographies of political party leaders and political theoreticians.
- (B) They were conceived by political historians who were reacting against the political climates of the 1960's and 1970's
- (C) They were of more use in analyzing the positions of United States political parties in the nineteenth century than in analyzing the positions of those in the twentieth century.
- (D) They were of more use in analyzing the political behavior of

nineteenth-century voters than in analyzing the political activities of those who could not vote during that period.

(E) They were devised as a means of tracing the influence of nineteenth-century political trends on twentieth-century political trends.

#### 3. It can be inferred that the author of the passage quotes Baker directly in the second paragraph primarily in order to

- (A) clarify a position before providing an alternative to that position
- (B) differentiate between a novel definition and traditional definitions
- (C) provide an example of a point agreed on by different generations of scholars
- (D) provide an example of the prose style of an important historian
- (E) amplify a definition given in the first paragraph

#### 4. According to the passage, Paula Baker and the new political historians of the 1960's and 1970's shared which of the following?

- (A) A commitment to interest-group politics
- (B) A disregard for political theory and ideology
- (C) An interest in the ways in which nineteenth-century politics prefigured contemporary politics
- (D) A reliance on such quantitative techniques as the analysis of election returns
- (E) An emphasis on the political involvement of ordinary citizens

#### 5. Which of the following best describes the structure of the first paragraph of the passage?

- (A) Two scholarly approaches are compared, and a shortcoming common to both is identified.
- (B) Two rival schools of thought are contrasted, and a third is alluded to.
- (C) An outmoded scholarly approach is described, and a corrective approach is called for.
- (D) An argument is outlined, and counter arguments are mentioned.
- (E) A historical era is described in terms of its political trends.

#### 6. The information in the passage suggests that a pre-1960's political historian would have been most likely to undertake which of the following studies?

- (A) An analysis of voting trends among women voters of the 1920's
- (B) A study of male voters' gradual ideological shift from party politics to issue-oriented politics
- (C) A biography of an influential nineteenth-century minister of foreign affairs
- (D) An analysis of narratives written by previously unrecognized women activists
- (E) A study of voting trends among naturalized immigrant laborers in a nineteenth-century logging camp

### Passage 130

Two divergent definitions have dominated sociologists' discussions of the nature of ethnicity. The first emphasizes the primordial and unchanging character of ethnicity. In this view, people have an essential need for belonging that is satisfied by membership in groups based on shared ancestry and culture. A different conception of ethnicity de-emphasizes the cultural component and defines ethnic groups as interest groups. In this view, ethnicity serves as a way of mobilizing a certain population behind issues relating to its economic position. While both of these definitions are useful, neither fully captures the dynamic and changing aspects of ethnicity in the United States. Rather, ethnicity is more satisfactorily conceived of as a process in which preexisting communal bonds and common cultural attributes are adapted for instrumental purposes according to changing real-life situations.

One example of this process is the rise of participation by Native American people in the broader United States political system since the Civil Rights movement of the 1960's. Besides leading Native Americans to participate more actively in politics (the number of Native American legislative officeholders more than doubled), this movement also evoked increased interest in tribal history and traditional culture. Cultural and instrumental components of ethnicity are not mutually exclusive, but rather reinforce one another.

The Civil Rights movement also brought changes in the uses to which ethnicity was put by Mexican American people. In the 1960's, Mexican Americans formed community-based political groups that emphasized ancestral heritage as a way of mobilizing constituents. Such emerging issues as immigration and voting rights gave Mexican American advocacy groups the means by which to promote ethnic solidarity. Like European ethnic groups in the nineteenth-century United States, late-twentieth-century Mexican American leaders combined ethnic with contemporary civic symbols. In 1968 Henry Cisneros, then mayor of San Antonio, Texas, cited Mexican leader Benito Juarez as a model for Mexican Americans in their fight for contemporary civil rights. And every year, Mexican Americans celebrate *Cinco de Mayo* as fervently as many Irish American people embrace St. Patrick's Day (both are major holidays in the countries of origin), with both holidays having been reinvented in the context of the United States and linked to ideals, symbols, and heroes of the United States.

#### 1. Which of the following best states the main idea of the passage?

- (A) In their definitions of the nature of ethnicity, sociologists have underestimated the power of the primordial human need to belong.
- (B) Ethnicity is best defined as a dynamic process that combines cultural components with shared political and economic interests.
- (C) In the United States in the twentieth century, ethnic groups have begun to organize in order to further their political and economic interests.

- (D) Ethnicity in the United States has been significantly changed by the Civil Rights movement.
- (E) The two definitions of ethnicity that have dominated sociologists' discussions are incompatible and should be replaced by an entirely new approach.

2. Which of the following statements about the first two definitions of ethnicity discussed in the first paragraph is supported by the passage?

- (A) One is supported primarily by sociologists, and the other is favored by members of ethnic groups.
- (B) One emphasizes the political aspects of ethnicity, and the other focuses on the economic aspects.
- (C) One is the result of analysis of United States populations, and the other is the result of analysis of European populations.
- (D) One focuses more on the ancestral components of ethnicity than does the other.
- (E) One focuses more on immigrant groups than does the other.

3. The author of the passage refers to Native American people in the second paragraph in order to provide an example of

- (A) the ability of membership in groups based on shared ancestry and culture to satisfy an essential human need
- (B) how ethnic feelings have both motivated and been strengthened by political activity
- (C) how the Civil Rights movement can help promote solidarity among United States ethnic groups
- (D) how participation in the political system has helped to improve a group's economic situation
- (E) the benefits gained from renewed study of ethnic history and culture

4. The passage supports which of the following statements about the Mexican American community?

- (A) In the 1960's the Mexican American community began to incorporate the customs of another ethnic group in the United States into the observation of its own ethnic holidays.
- (B) In the 1960's Mexican American community groups promoted ethnic solidarity primarily in order to effect economic change.
- (C) In the 1960's leaders of the Mexican American community concentrated their efforts on promoting a renaissance of ethnic history and culture.
- (D) In the 1960's members of the Mexican American community were becoming increasingly concerned about the issue of voting rights.
- (E) In the 1960's the Mexican American community had greater success in mobilizing constituents than did other ethnic groups in the United States.

### Passage 130

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5. Which of the following types of ethnic cultural expression is discussed in the passage?

- (A) The retelling of traditional narratives
- (B) The wearing of traditional clothing
- (C) The playing of traditional music
- (D) The celebration of traditional holidays
- (E) The preparation of traditional cuisine

6. Information in the passage supports which of the following statements about many European ethnic groups in the nineteenth-century United States?

- (A) They emphasized economic interests as a way of mobilizing constituents behind certain issues.
- (B) They conceived of their own ethnicity as being primordial in nature.
- (C) They created cultural traditions that fused United States symbols with those of their countries of origin.
- (D) They de-emphasized the cultural components of their communities in favor of political interests.
- (E) They organized formal community groups designed to promote a renaissance of ethnic history and culture.

7. The passage suggests that in 1968 Henry Cisneros most likely believed that

- (A) many Mexican Americans would respond positively to the example of Benito Juárez
- (B) many Mexican Americans were insufficiently educated in Mexican history
- (C) the fight for civil rights in the United States had many strong parallels in both Mexican and Irish history
- (D) the quickest way of organizing community-based groups was to emulate the tactics of Benito Juárez
- (E) Mexican Americans should emulate the strategies of Native American political leaders

## Passage 131

Over the last 150 years, large stretches of salmon habitat have been eliminated by human activity: mining, livestock grazing, timber harvesting, and agriculture as well as recreational and urban development. The numerical effect is obvious: there are fewer salmon in degraded regions than in pristine ones; however, habitat loss also has the potential to reduce genetic diversity. This is most evident in cases where it results in the extinction of entire salmon populations. Indeed, most analysts believe that some kind of environmental degradation underlies the demise of many extinct salmon populations. Although some rivers have been recolonized, the unique genes of the original populations have been lost.

Large-scale disturbances in one locale also have the potential to alter the genetic structure of populations in neighboring areas, even if those areas have pristine habitats. Why? Although the homing instinct of salmon to their natal stream is strong, a fraction of the fish returning from the sea (rarely more than 15 percent) stray and spawn in nearby streams. Low levels of straying are crucial, since the process provides a source of novel genes and a mechanism by which a location can be repopulated should the fish there disappear. Yet high rates of straying can be problematic because misdirected fish may interbreed with the existing stock to such a degree that any local adaptations that are present become diluted. Straying rates remain relatively low when environmental conditions are stable, but can increase dramatically when streams suffer severe disturbance. The 1980 volcanic eruption of Mount Saint Helens, for example, sent mud and debris into several tributaries of the Columbia River. For the next couple of years, steelhead trout (a species included among the salmonids) returning from the sea to spawn were forced to find alternative streams. As a consequence, their rates of straying, initially 16 percent, rose to more than 40 percent overall.

Although no one has quantified changes in the rate of straying as a result of the disturbances caused by humans, there is no reason to suspect that the effect would be qualitatively different than what was seen in the aftermath of the Mount Saint Helens eruption. Such a dramatic increase in straying from damaged areas to more pristine streams results in substantial gene flow, which can in turn lower the overall fitness of subsequent generations.

### 1. The primary purpose of the passage is to

- (A) argue against a conventional explanation for the extinction of certain salmon populations and suggest an alternative
- (B) correct a common misunderstanding about the behavior of salmon in response to environmental degradation caused by human activity
- (C) compare the effects of human activity on salmon populations with the effects of natural disturbances on salmon populations
- (D) differentiate the particular effects of various human activities on salmon habitats
- (E) describe how environmental degradation can cause changes in salmon populations that extend beyond a numerical reduction

### 2. It can be inferred from the passage that the occasional failure of some salmon to return to their natal streams in order to spawn provides a mechanism by which

- (A) pristine streams that are near polluted streams become polluted themselves
- (B) the particular adaptations of a polluted stream's salmon population

can be preserved without dilution

- (C) the number of salmon in pristine habitats decreases relative to the number in polluted streams
- (D) an environmentally degraded stream could be recolonized by new salmon populations should the stream recover
- (E) the extinction of the salmon populations that spawn in polluted streams is accelerated

### 3. According to the passage, human activity has had which of the following effects on salmon populations?

- (A) An increase in the size of salmon populations in some previously polluted rivers
- (B) A decline in the number of salmon in some rivers
- (C) A decrease in the number straying salmon in some rivers
- (D) A decrease in the gene flow between salmon populations that spawn in polluted streams and populations that spawn in pristine streams
- (E) A decline in the vulnerability of some salmon

populations to the effects of naturally occurring habitat destruction

### 4. The author's argument that increased straying can "lower the overall fitness of subsequent generations" (see highlighted text) is based on which of the following assumptions?

- (A) A disturbance of salmonid spawning streams caused by human activity could increase the straying rate of affected salmonid populations as much as the aftermath of the Mount Saint Helens eruption did.
- (B) In the streams in which the straying salmonids spawn, these straying salmonids would amount to no more than 40 percent of the total spawning population
- (C) Salmonids in some streams benefit from particular local adaptations.
- (D) Nonenvironmental factors have no effect on salmonid straying rates.
- (E) At least some of the streams in which straying salmonids would spawn are pristine, affected by neither natural nor artificial disturbances.

### 5. Which of the following does the author mention as support for the view that environmental disturbances caused by human activity could increase straying rates?

- (A) The existence of salmon populations in rivers where the elimination of salmon habitat by human activity had previously made the fish extinct
- (B) The results of studies measuring the impact on straying rates of habitat loss caused by human activity
- (C) The potential for disturbances in one environment to cause the introduction of novel genes into salmon populations in neighboring areas
- (D) The weaknesses in the view that the extinction of entire salmon populations is the only mechanism by which human destruction of salmon habitat reduces genetic diversity in salmon
- (E) The absence of any reason for believing that disturbances brought about by human activity would differ in their effects from comparable disturbances brought about by natural causes

## Passage 132

Two recent publications offer different assessments of the career of the famous British nurse Florence Nightingale. A book by Anne Summers seeks to debunk the idealizations and present a reality at odds with Nightingale's heroic reputation. According to Summers Nightingale's importance during the Crimean War has been exaggerated: not until near the war's end did she become supervisor of the female nurses. Additionally, Summers writes that the contribution of the nurses to the relief of the wounded was at best marginal. The prevailing problems of military medicine were caused by army organizational practices, and the addition of a few nurses to the medical staff could be no more than symbolic. Nightingale's place in the national pantheon, Summers asserts, is largely due to the propagandistic efforts of contemporary newspaper reporters.

By contrast, the editors of a new volume of Nightingale's letters view Nightingale as a person who significantly influenced not only her own age but also subsequent generations. They highlight her ongoing efforts to reform sanitary conditions after the war. For example, when she learned that peacetime living conditions in British barracks were so horrible that the death rate of enlisted men far exceeded that of neighboring civilian populations, she succeeded in persuading the government to establish a Royal Commission on the Health of the Army. She used sums raised through public contributions to found a nurses' training hospital in London. Even in administrative matters, the editors assert her practical intelligence was formidable: as recently as 1947 the British Army's medical services were still using the cost-accounting system she had devised in the 1860's.

I believe that the evidence of her letters supports continued respect for Nightingale's brilliance and creativity. When counseling a village schoolmaster to encourage children to use their faculties of observation she sounds like a modern educator. Her insistence on classifying the problems of the needy in order to devise appropriate treatments is similar to the approach of modern social workers. In sum, although Nightingale may not have achieved all other goals during the Crimean War, her breadth of vision and ability to realize ambitious projects have earned her an eminent place among the ranks of social pioneers.

1. The passage is primarily concerned with evaluating
  - (A) the importance of Florence Nightingale's innovations in the field of nursing
  - (B) contrasting approaches to the writing of historical biography
  - (C) contradictory accounts of Florence Nightingale's historical significance
  - (D) the quality of health care in nineteenth-century England
  - (E) the effect of the Crimean War on developments in the field of health care
2. According to the passage, the editors of Nightingale's letters credit her with contributing to which of the following?
  - (A) Improvement of the survival rate for soldiers in British Army hospitals during the Crimean War
  - (B) The development of a nurses' training curriculum that was far in advance of its day
  - (C) The increase in the number of women doctors practicing in British Army hospitals
  - (D) Establishment of the first facility for training nurses at a major British university
  - (E) The creation of an organization for monitoring the peacetime living conditions of British soldiers
3. The passage suggests which of the following about Nightingale's relationship with the British public of her day?
  - (A) She was highly respected, her projects receiving popular and governmental support.
  - (B) She encountered resistance both from the army establishment and the general public.
  - (C) She was supported by the working classes and opposed by the wealthier classes.
  - (D) She was supported by the military establishment but had to fight the governmental bureaucracy.
  - (E) After initially being received with enthusiasm, she was quickly forgotten.
4. The passage suggests which of the following about sanitary conditions in Britain after the Crimean War?
  - (A) While not ideal, they were superior to those in other parts of the world.
  - (B) Compared with conditions before the war, they had deteriorated.
  - (C) They were more advanced in rural areas than in the urban centers.
  - (D) They were worse in military camps than in the neighboring civilian populations.
  - (E) They were uniformly crude and unsatisfactory throughout England.

### Passage 132

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5. With which of the following statements regarding the differing interpretations of Nightingale's importance would the author most likely agree?

- (A) Summers misunderstood both the importance of Nightingale's achievements during the Crimean War and her subsequent influence on British policy.
- (B) The editors of Nightingale's letters made some valid points about her practical achievements but they still exaggerated her influence on subsequent generations.
- (C) Although Summers' account of Nightingale's role in the Crimean War may be accurate, she ignored evidence of Nightingale's subsequent achievement that suggests that her reputation as an eminent social reformer is well deserved.
- (D) The editors of Nightingale's letters mistakenly propagated the outdated idealization of Nightingale that only impedes attempts to arrive at a balanced assessment of her true role.
- (E) The evidence of Nightingale's letters supports Summers' conclusions both about Nightingale's activities and about her influence.

6. Which of the following is an assumption underlying the author's assessment of Nightingale's creativity?

- (A) Educational philosophy in Nightingale's day did not normally emphasize developing children's ability to observe.
- (B) Nightingale was the first to notice the poor living conditions in British military barracks in peacetime.
- (C) No educator before Nightingale had thought to enlist the help of village schoolmasters in introducing new teaching techniques.
- (D) Until Nightingale began her work, there was no concept of organized help for the needy in nineteenth-century Britain.
- (E) The British army's medical services had no cost-accounting system until Nightingale devised one in the 1860's.

7. In the last paragraph, the author is primarily concerned with

- (A) summarizing the arguments about Nightingale presented in the first two paragraphs
- (B) refuting the view of Nightingale's career presented in the preceding paragraph
- (C) analyzing the weaknesses of the evidence presented elsewhere in the passage
- (D) citing evidence to support a view of Nightingale's career
- (E) correcting a factual error occurring in one of the works under review

### Passage 133

When A. Philip Randolph assumed the leadership of the Brotherhood of Sleeping Car Porters, he began a ten-year battle to win recognition from the Pullman Company, the largest private employer of Black people in the United States and the company that controlled the railroad industry's sleeping car and parlor service. In 1935 the Brotherhood became the first Black union recognized by a major corporation. Randolph's efforts in the battle helped transform the attitude of Black workers toward unions and toward themselves as an identifiable group; eventually, Randolph helped to weaken organized labor's antagonism toward Black workers.

In the Pullman contest Randolph faced formidable obstacles. The first was Black workers' understandable skepticism toward unions, which had historically barred Black workers from membership. An additional obstacle was the union that Pullman itself had formed, which weakened support among Black workers for an independent entity.

The Brotherhood possessed a number of advantages, however, including Randolph's own tactical abilities. In 1928 he took the bold step of threatening a strike against Pullman. Such a threat, on a national scale, under Black leadership, helped replace the stereotype of the Black worker as servant with the image of the Black worker as wage earner. In addition, the porters' very isolation aided the Brotherhood. Porters were scattered throughout the country, sleeping in dormitories in Black communities; their segregated life protected the union's internal communications from interception. That the porters were a homogeneous group working for a single employer with a single labor policy, thus sharing the same grievances from city to city, also strengthened the Brotherhood and encouraged racial identity and solidarity as well. But it was only in the early 1930's that federal legislation prohibiting a company from maintaining its own unions with company money eventually allowed the Brotherhood to become recognized as the porters' representative.

Not content with this triumph, Randolph brought the Brotherhood into the American Federation of Labor, where it became the equal of the Federation's 105 other unions. He reasoned that as a member union, the Brotherhood would be in a better position to exert pressure on member unions that practiced race restrictions. Such restrictions were eventually found unconstitutional in 1944.

1. According to the passage, by 1935 the skepticism of Black workers toward unions was

- (A) unchanged except among Black employees of railroad-related industries
- (B) reinforced by the actions of the Pullman Company's union
- (C) mitigated by the efforts of Randolph
- (D) weakened by the opening up of many unions to Black workers
- (E) largely alleviated because of the policies of the American Federation of Labor

2. In using the word "understandable" (line 14), the author most clearly conveys

- (A) sympathy with attempts by the Brotherhood between 1925

and 1935 to establish an independent union

- (B) concern that the obstacles faced by Randolph between 1925 and 1935 were indeed formidable
- (C) ambivalence about the significance of unions to most Black workers in the 1920's
- (D) appreciation of the attitude of many Black workers in the 1920's toward unions
- (E) regret at the historical attitude of unions toward Black workers

3. The passage suggests which of the following about the response of porters to the Pullman Company's own union?

- (A) Few porters ever joined this union.
- (B) Some porters supported this union before 1935.
- (C) Porters, more than other Pullman employees, enthusiastically supported this union.
- (D) The porters' response was most positive after 1935.
- (E) The porters' response was unaffected by the general skepticism of Black workers concerning unions.

4. The passage suggests that if the grievances of porters in one part of the United States had been different from those of porters in another part of the country, which of the following would have been the case?

- (A) It would have been more difficult for the Pullman Company to have had a single labor policy.
- (B) It would have been more difficult for the Brotherhood to control its channels of communication.
- (C) It would have been more difficult for the Brotherhood to build its membership.
- (D) It would have been easier for the Pullman Company's union to attract membership.
- (E) It would have been easier for the Brotherhood to threaten strikes.

5. The passage suggests that in the 1920's a company in the United States was able to

- (A) use its own funds to set up a union
- (B) require its employees to join the company's own union
- (C) develop a single labor policy for all its employees with little employee dissent
- (D) pressure its employees to contribute money to maintain the company's own union
- (E) use its resources to prevent the passage of federal legislation that would have facilitated the formation of independent unions

6. The passage supplies information concerning which of the following matters related to Randolph?

- (A) The steps he took to initiate the founding of the Brotherhood
- (B) His motivation for bringing the Brotherhood into the American Federation of Labor
- (C) The influence he had on the passage of legislation overturning race restrictions in 1944
- (D) The influence he had on the passage of legislation to bar companies from financing their own unions
- (E) The success he and the Brotherhood had in influencing the policies of the other unions in the American Federation of Labor

## Passage 134

In *Forces of Production*, David Noble examines the transformation of the machine-tool industry as the industry moved from reliance on skilled artisans to automation. Noble writes from a Marxist perspective, and his central argument is that management, in its decisions to automate, **conspired against** labor: the power that the skilled machinists wielded in the industry was **intolerable to management**. Noble fails to substantiate this claim, although his argument is **impressive when he applies the Marxist concept** of “de-skilling”—the use of technology to replace skilled labor—to the automation of the machine-tool industry. In automating, the industry moved to computer-based, digitized “numerical-control” (N/C) technology, rather than to artisan-generated “record-playback” (R/P) technology.

Although both systems reduced reliance on skilled labor, Noble **clearly prefers** R/P, with its inherent acknowledgment of workers’ skills: unlike N/C, its programs were produced not by engineers at their computers, but by skilled machinists, who recorded their own movements to “teach” machines to duplicate those movements. However, Noble’s **only evidence of conspiracy** is that, although the two approaches were roughly equal in technical merit, management chose N/C. From this he concludes that automation is undertaken not because efficiency demands it or scientific advances allow it, but because it is a tool in the ceaseless war of capitalists against labor.

1. The author of the passage is primarily concerned with  
(A) reexamining a political position and defending its validity  
(B) examining a management decision and defending its necessity  
(C) analyzing a scholarly study and pointing out a central weakness  
(D) explaining a trend in automation and warning about its dangers  
(E) chronicling the history of an industry and criticizing its development

2. According to information in the passage, the term “de-skilling” refers to the  
(A) loss of skills to industry when skilled workers are replaced by unskilled laborers  
(B) substitution of mechanized processes for labor formerly performed by skilled workers  
(C) labor theory that automation is technologically comparable to skilled labor  
(D) process by which skilled machinists “teach” machines to perform certain tasks  
(E) exclusion of skilled workers from participation in the development of automated technology

3. Which of the following best characterizes the function of the second paragraph of the passage?  
(A) It develops a topic introduced in the first paragraph.  
(B) It provides evidence to refute a claim presented in the first paragraph.  
(C) It gives examples of a phenomenon mentioned in the first

paragraph.

(D) It presents a generalization about examples given in the first paragraph.

(E) It suggests two possible solutions to a problem presented in the first paragraph.

4. The passage suggests which of the following about N/C automation in the machine-tool industry?

(A) It displaced fewer skilled workers than R/P automation did.

(B) It could have been implemented either by experienced machinists or by computer engineers.

(C) It was designed without the active involvement skilled machinists.

(D) It was more difficult to design than R/P automation was.

(E) It was technically superior to R/P automation.

5. Which of the following phrases most clearly reveals the attitude of the author of the passage toward Noble’s central argument?

(A) “conspired against” (line 6)

(B) “intolerable to management” (line 7)

(C) “impressive when he applies the Marxist concept” (line 9)

(D) “clearly prefers” (line 16)

(E) “only evidence of conspiracy” (line 21)

6. The author of the passage commends Noble’s book for which of the following?

(A) Concentrating on skilled as opposed to unskilled workers in its discussion of the machine-tool industry

(B) Offering a generalization about the motives behind the machine-tool industry’s decision to automate

(C) Making an essential distinction between two kinds of technology employed in the machine-tool industry

(D) Calling into question the notion that managers conspired against labor in the automation of the machine-tool industry

(E) Applying the concept of de-skilling to the machine tool industry

7. Which of the following best characterizes *Forces of Production* as it is described in the passage?

(A) A comparison of two interpretations of how a particular industry evolved

(B) An examination of the origin of a particular concept in industrial economics

(C) A study that points out the weakness of a particular interpretation of an industrial phenomenon

(D) A history of a particular industry from an ideological point of view

(E) An attempt to relate an industrial phenomenon in one industry to a similar phenomenon in another industry

### Passage 135

Many **scholars** have theorized that economic development, particularly industrialization and urbanization, contributes to the growth of participatory democracy; according to this theory, it would seem logical that women would both demand and gain suffrage in ever greater numbers whenever economic development expanded their economic opportunities. However, the economic development theory is inadequate to explain certain historical facts about the implementation of women's suffrage. For example, why was women's suffrage, instituted nationally in the United States in 1920, not instituted nationally in Switzerland until the 1970's? Industrialization was well advanced in both countries by 1920: over 33 percent of American workers were employed in various industries, as compared to 44 percent of Swiss workers. Granted, Switzerland and the United States diverged in the degree to which the expansion of industry coincide with the degree of urbanization: only 29 percent of the Swiss population lived in cities of 10,000 or more inhabitants by 1920. However, urbanization cannot fully explain women's suffrage. Within the United States prior to 1920, for example, only less urbanized states had granted women suffrage. Similarly, less urbanized countries such as Cambodia and Ghana had voting rights for women long before Switzerland did. It is true that Switzerland urbanized cantons (political subdivisions) generally enacted women's suffrage legislation earlier than did rural cantons. However, these cantons often shared other characteristics—similar linguistic background and strong leftist parties—that may help to explain this phenomenon.

#### 1. The primary purpose of the passage is to

- A. contrast two explanations for the implementation of women's suffrage
- B. demonstrate that one factor contributes more than another factor to the implementation of women's suffrage
- C. discuss the applicability of a theory for explaining the implementation of women's suffrage
- D. clarify certain assumptions underlying a particular theory about the implementation of women's suffrage
- E. explain how a particular historical occurrence was causally connected to the implementation of women's suffrage

#### 2. The passage states which of the following about Switzerland's urbanized cantons?

- A. These cantons shared characteristics other than urbanization that may have contributed to their implementation of women's suffrage.
- B. These cantons tended to be more politically divided than were rural cantons.
- C. These cantons shared with certain rural cantons characteristics such as similar linguistic backgrounds and strong leftist parties.

D. The populations of these cantons shared similar views because urbanization furthered the diffusion of ideas among them.

E. These cantons were comparable to the most highly urbanized states in the United States in their stance toward the implementation of women's suffrage.

#### 3. The passage suggests which of the following about urbanization in Switzerland and the United States by 1920?

- A. A greater percentage of Swiss industrial workers than American industrial workers lived in urban areas.
- B. There were more cities of 10,000 or more inhabitants in Switzerland than there were in the United States.
- C. Swiss workers living in urban areas were more likely to be employed in industry than were American workers living in urban areas.
- D. Urbanized areas of Switzerland were more likely than similar areas in the United States to have strong leftist parties.
- E. A greater percentage of the United States population than the Swiss population lived in urban areas.

#### 4. The passage suggests which of the following about states in the United States prior to 1920?

- A. The states that were not highly urbanized were slow to grant women's suffrage.
- B. The states that were highly urbanized were the most influential in determining national policies regarding suffrage.
- C. The most highly urbanized states were more likely to have strong leftist parties.
- D. The most highly urbanized states were not necessarily the most industrialized ones.
- E. The most highly urbanized states had not yet granted women's suffrage.

#### 5. According to the passage, the scholars mentioned in the highlighted text assert which of the following about the growth of participatory democracy within a particular nation?

- A. It is not necessarily correlated with increasing income and opportunities for women in that nation.
- B. It is not necessarily related to the implementation of women's suffrage within that nation.
- C. It cannot adequately explain the nation's level of economic development.
- D. It tends to be encouraged by the occurrence of industrialization in that nation.
- E. It is to increase with the growth of leftist parties in that nation.

### Passage 136

Customer loyalty programs are attempts to bond customers to a company and its products and services by offering incentives—such as airline frequent flyer programs or special credit cards with valuable benefits—to loyal customers. In support of loyalty programs, companies often invoke the “80/20” principle, which states that about 80 percent of revenue typically comes from only about 20 percent of customers. However, this profitable 20 percent are not necessarily loyal buyers, especially in the sense of exclusive loyalty. Studies have demonstrated that only about 10 percent of buyers for many types of frequently purchased consumer goods are 100 percent loyal to a particular brand over a one-year period. Moreover, 100-percent-loyal buyers tend to be light buyers of the product or service. “Divided loyalty” better describes actual consumer behavior, since customers typically vary the brands they buy. The reasons for this behavior are fairly straightforward: people buy different brands for different occasions or for variety, or a brand may be the only one in stock or may offer better value because of a special deal. Most buyers who change brands are not lost forever; usually, they are heavy consumers who simply prefer to buy a number of brands. Such multi-brand loyalty means that one company’s most profitable customers will probably be its competitors’ most profitable customers as well.

Still, advocates of loyalty programs contend that such programs are beneficial because the costs of serving highly loyal customers are lower, and because such loyal customers are less price sensitive than other customers. It is true that when there are start-up costs, such as credit checks, involved in serving a new customer, the costs exceed those of serving a repeat customer. However, it is not at all clear why the costs of serving a highly loyal customer should in principle be different from those of serving any other type of repeat customer. The key variables driving cost are size and type of order, special versus standard order, and so on, not high-loyalty versus divided-loyalty customers. As for price sensitivity, highly loyal customers may in fact come to expect a price discount as a reward for their loyalty.

1. The primary purpose of the passage is to
  - A. question the notion that customer loyalty programs are beneficial
  - B. examine the reasons why many customers buy multiple brands of products
  - C. propose some possible alternatives to customer loyalty programs
  - D. demonstrate that most customers are not completely loyal to any one brand of product or service
  - E. compare the benefits of customer loyalty programs with those of other types of purchase incentive programs
2. The passage mentions each of the following as a potential reason for customers’ divided loyalty EXCEPT
  - A. A particular brand may be the only one available
  - B. A particular brand may be offered at a discount

- C. Customers will often buy multiple brands out of a desire for variety
- D. Customers will often buy a unfamiliar brand when it is new on the market
- E. Customers will often buy certain brands for certain occasions

3. According to the passage, advocates of the customer loyalty programs claim which of the following about highly loyal customers?
  - A. They often expect price discounts a reward for their loyalty to the product
  - B. They can be served at lower expense to a company than nonloyal customers
  - C. They tend to be light but predictable buyers of the product or service in question
  - D. They are unlikely to try out new brands or products that appear on the market
  - E. They are difficult to differentiate statistically from other types of repeat customers

4. The passage suggests that companies that invoke the “80/20” principle in customer loyalty programs believe which of the following?
  - A. A well designed customer loyalty program can increase the number of company’s loyal customers by as much as 80 percent.
  - B. About 20 percent of any given company’s most profitable customers are likely to be its competitors’ most profitable customers as well.
  - C. It is unreasonable to expect more than 20 percent of customers to be 100 percent loyal to any particular brand of the product.
  - D. Even “loyal” customers cannot reasonably be expected to stick to one particular brand of product more than 80% of the time.
  - E. A relatively small number of loyal customers is responsible for about 80% of the company’s profits.

5. The second paragraph functions primarily to
  - A. propose solutions to certain problems inherent in customer loyalty programs.
  - B. emphasize certain risks inherent in customer loyalty programs.
  - C. address certain contentions put forth by advocates of customer loyalty programs.
  - D. defend certain specific aspects of customer loyalty programs against criticism.
  - E. reconcile competing view points regarding the efficacy of customer loyalty program.

6. The author of the passage suggests that which of the following is most likely to be true of a customer who is exclusively loyal to a particular brand of product?
  - A. The customer probably began buying that brand of product only within the past year.
  - B. The customer is probably among the most profitable customers for the company that manufactures that brand of product.
  - C. The customer is probably not a heavy consumer of that particular type of product.
  - D. The customer is probably a loyal customer when purchasing other types of products as well.
  - E. The customer probably sampled numerous brands of that type of product before becoming loyal to a particular brand.

### Passage 137

White tigers are neither a species nor a subspecies, but appear as a result of a recessive trait that rarely occurs in the wild. In the 1950s many zoos deliberately and indiscriminately bred white tigers, but more recently, concerns about the desirability of preserving a trait that presumably hinders tigers' to survive in the wild, and recognition that inbreeding could lead to genetic defects, have caused most zoos to such practices. However, some zoo managers argue that the popularity of white tigers provides income important to the survival of zoo sponsored scientific and conservation programs. **They also point out that most of the white tigers captured in the wild were adults, proving that their coloration does not hinder their survival ability.**

**Opponents of white-tiger breeding programs** argue that white tigers are merely Indian tigers—a subspecies well represented in both zoos and the wild—and that zoos should focus their tiger management efforts on preserving subspecies whose existence is threatened, thus preventing the Chinese and Indochinese tiger subspecies from joining the Javan, Balinese, and Caspian subspecies in extinction. Alternatively, zoos could mingle the subspecies and manage all tigers in captivity as one species. Although subspecies differences would be lost, this strategy would be advantageous because fewer animals would be necessary to maintain the genetic diversity of tigers in captivity, making scarce zoo resources available for housing other endangered felines.

**Q1 The passage suggests that, compared with other tiger subspecies, the Indian tiger is**

- A less threatened by extinction
- B less readily bred in captivity
- C likely to survive in the wild
- D more likely to be bred indiscriminately
- E more popular with 200 visitors

**Q2 The "Opponents of white-tiger breeding programs" mentioned in the highlighted text advocate that zoos use their resources to**

- A promote public awareness of environmental threats to tiger habitats
- B allow zoos to house enough tigers to ensure genetic diversity among Indian tigers
- C study ways to increase the survival rates of white tigers in the wild
- D investigate ways of maintaining the white tigers already in zoos
- E preserve tiger subspecies that may be endangered

**Q3 The author of the passage suggests that if all tigers in captivity were managed as one species, then zoos would be able to**

- A use their resources to preserve a variety of other felines
- B increase public interest in tigers and thus attract more visitors and income
- C provide better habitats for tigers than they currently do
- D prevent the extinction of existing tiger subspecies
- E continue breeding white tigers

**Q4 Which of the following best describes the function of the last sentence in the first paragraph of the passage (see highlighted text)?**

- A To emphasize the importance of white tigers as source of zoo income
- B To point out the advantages to white tigers of living in the wild
- C To provide evidence counter to an argument against the breeding of white tigers
- D To suggest that white tigers living in the wild are less to face extinction than tigers living in zoos
- E To suggest that white tigers are not endangered

### Passage 138

Why firms adhere to or deviate from their strategic plans is poorly understood. However, theory and limited research suggest that the process through which such plans emerge may play a part. In particular, top management decision sharing—consensus-oriented, team-based decision-making—may increase the likelihood that firms will adhere to their plans, because those involved in the decision-making may be more committed to the chosen course of action, thereby increasing the likelihood that organizations will subsequently adhere to their plans.

However, the relationship between top management decision-sharing and adherence to plans may be affected by a firm's strategic mission (its fundamental approach to increasing sales revenue and market share, and generating cash flow and short-term profits). At one end of the strategic mission continuum, "build" strategies are pursued when a firm desires to increase its market share and is willing to sacrifice short-term profits to do so. At the other end, "harvest" strategies are used when a firm is willing to sacrifice market share for short-term profitability and cash-flow maximization. Research and theory suggest that top management decision-sharing may have a more positive relationship with adherence to plans among firms with harvest strategies than among firms with build strategies. In a study of strategic practices in several large firms, managers in harvest strategy scenarios were more able to adhere to their business plans. As one of the managers in the study explained it, this is partly because "Typically all a manager has to do [when implementing a harvest strategy] is that which was done last year." Additionally, managers under harvest strategies may have fewer strategic options than do those under build strategies; it may therefore be easier to reach agreement on a particular course of action through decision-sharing, which will in turn tend to promote adherence to plans. Conversely, in a "build" strategy scenario, individual leadership, rather than decision-sharing, may promote adherence to plans. Build strategies—which typically require leaders with strong personal visions for a firm's future, rather than the negotiated compromise of the team-based decision—may be most closely adhered to when implemented in the context of a clear strategic vision of an individual leader, rather than through the practice of decision-sharing.

1. Which of the following best describes the function of the first sentence (lines 17-24) of the second paragraph of the passage?
- (A) To answer a question posed in the first sentence of the passage about why firms adopt particular strategic missions
  - (B) To refute an argument made in the first paragraph about how top management decision-making affects whether firms will adhere to their strategic plans
  - (C) To provide evidence supporting a theory introduced in the first paragraph about what makes firms adhere to or deviate from their strategic plans
  - (D) To qualify an assertion made in the preceding sentence about how top management decision-making affects the likelihood that firms will adhere to their strategic plans
  - (E) To explain a distinction relied on in the second paragraph regarding two different kinds of strategic missions

2. It can be inferred from the passage that which of the following firms would be most likely to adhere to its strategic plans?

- (A) One that is pursuing a build strategy and whose strategic plans were developed through the process of decision-sharing
- (B) One that is pursuing a harvest strategy and whose strategic plans were developed through the process of decision-sharing
- (C) One that is pursuing a harvest strategy and whose strategic plans were developed by an individual leader with a strong personal vision for the firm's future
- (D) One that does not fluctuate between build and harvest strategies
- (E) One that has a long-established practice of top-management decision-sharing

3. The author includes the quotation in lines 44-47 ["Typically all a manager has to do [when implementing a harvest strategy] is that which was done last year."] of the passage most probably in order to

- (A) lend support to the claim that firms utilizing harvest strategies may be more likely to adhere to their strategic plans
- (B) suggest a reason that many managers of large firm prefer harvest strategies to build strategies
- (C) provide an example of a firm that adhered to its strategic plan because of the degree of its managers' commitment
- (D) demonstrate that managers implementing harvest strategies generally have better strategic options than do managers implementing build strategies
- (E) give an example of a large firm that successfully implemented a harvest strategy

4. According to the theory and research discussed in the first paragraph of the passage, which of the following may be true of firms that use teams to develop their strategic plans?

- (A) They are more to pursue build strategies rather than harvest strategies.
- (B) They are less likely to have a well-defined strategic mission than are firms with individual leaders.
- (C) They are less to deviate from their strategic plans because team members may be more committed to the plans.
- (D) They generally follow a similar pattern in alternating efforts to increase revenues and market share with efforts to generate short-term profits.
- (E) They are less likely to adhere to their strategic plans because they tend to lack a clear strategic vision.

5. The primary purpose of the passage is to

- (A) identify some of the obstacles that make it difficult for firms to adhere to their strategic business plans
- (B) compare two different theories concerning why firms adhere to or deviate from their strategic plans
- (C) evaluate the utility of top management decision-sharing as a method of implementing the strategic mission of a business
- (D) discuss the respective advantages and disadvantages of build and harvest strategies among several large firms
- (E) examine some of the factors that may affect whether or not firms adhere to their strategic plans

### Passage 139

Quantum Theory, although of tremendous scientific value, has nevertheless prompted debate among physicists. The debate arose because quantum theory addresses the peculiar properties of minute objects such as photons and electrons. While one type of experiment shows that these objects behave like particles, with well-defined trajectories through space, another demonstrates that, on the contrary, they behave like waves, their peaks and troughs producing characteristic "interference" effects. However, scientists have failed to devise an experiment to demonstrate both behaviors simultaneously.

In the 1920s, two alternate interpretations of quantum theory attempted to resolve this apparently contradictory wave-particle duality. Physicists Niels Bohr argued that wave particle properties are not contradictory, but complementary. Contrary to our intuition that an object continues to exist in some determined form even though we cannot perceive it, he concluded that the physical reality of a quantum object is actually determined before the object is observed via experiment.

Physicist Werner Heisenberg's "uncertainty principle", by contrast, postulated that we cannot precisely determine two complementary properties, such as position and momentum, of a quantum object simultaneously: if we measure an object's position with absolute certainty, then there is an infinite uncertainty in its momentum, and vice versa. He concluded that although we are limited in our ability to measure objects at the atomic and subatomic levels, their position and momentum are nonetheless defined all along.

- 1) Which of the following does the passage mention as providing evidence of the dual nature of quantum objects?
  - a) Scientists' inability to measure the position and momentum of quantum objects simultaneously.
  - b) Scientists' inability to measure the momentum of the quantum objects with certainty.
  - c) The similarities in the appearance of particles and waves.
  - d) The tendency of quantum objects to exhibit well-defined trajectories only at either extremely high or extremely low speeds.
  - e) The behavior of quantum objects as either particles or waves depending on the type of experiment that is performed.
- 2) It can be inferred from the passage that if scientists were able to measure the position and momentum of quantum objects precisely and simultaneously, then the
  - a) theory that the dual properties of quantum objects are complementary would be proven.
  - b) basic postulate of the uncertainty principle would be refuted
  - c) distinction between particle behavior would cease to exist

- d) debate about quantum theory among physicists would be unchanged.
- e) trajectories of quantum objects through space would be more difficult to predict.

3) All of the following are mentioned in the passage as possible characteristics of quantum objects except:

- a) a minute size
- b) momentum
- c) position in space
- d) sporadic movement
- e) wave like behaviour

4) Which of the following, if true, would most seriously undermine Bohr's conclusion about the physical reality of a quantum object?

- a) The physical properties of particles and waves are inherently complementary.
- b) Human intuition is not a factor in the interpretation of scientific data about quantum objects.
- c) Results of experiments on quantum objects are sometime influenced by the expectations of the experiments.
- d) The technology used in research on quantum objects has made tremendous advances since the 1920s.
- e) Quantum objects possess distinct, continuously existing physical forms that do not depend on the experiments used to measure them

5) The passage suggests that the debate among physicists mentioned in the first sentence has arisen in part because

- A. the rapid movement of quantum objects poses an insurmountable obstacle to precise measurement
- B. scientists have been unable to devise a single experiment that reveals both particle and wave properties of quantum objects simultaneously
- C. the controversial nature of quantum theory has made it difficult for scientists to agree on what evidence is acceptable
- D. division among physicists has resulted in the design of experiments that produce unintelligible experimental results
- E. research efforts have been undermined by irreconcilable contradictions between equally compelling interpretations of quantum theory

6. Which of the following best describes the organization of the passage?

- A. A thesis is introduced and then amended.
- B. Arguments are presented, weighed, and then reconciled.
- C. A problem is described and different interpretations intended to resolve the problem are presented.
- D. Hypotheses are analyzed, their premises are refuted, and alternatives are suggested to replace the hypotheses.
- E. A theory is advanced, opposing evidence is considered, and the theory is abandoned.

### Passage 140

Although recent censure of corporate boards of directors as “passive” and “supine” may be excessive, those who criticize board performance have plenty of substantive ammunition. Too many corporate boards fail in their two crucial responsibilities of overseeing long-term company strategy and of selecting, evaluating, and determining appropriate compensation of top management. At times, despite disappointing corporate performance, compensation of chief executive officers reaches indefensibly high levels, nevertheless, suggestions that the government should legislate board reform are premature. There are ample opportunities for boards themselves to improve corporate performance.

Most corporate boards’ compensation committees focus primarily on peer-group comparisons. They are content if the pay of top executives approximates that of the executives of competing firms with comparable short-term earnings or even that of executives of competing firms of comparable size. However, mimicking the compensation policy of competitors for the sake of parity means neglecting the value of compensation as a means of stressing long-term performance. By tacitly detaching executive compensation policy from long-term performance, committees harm their companies and the economy as a whole. The committees must develop incentive compensation policies to emphasize long-term performance. For example a board’s compensation committee can, by carefully proportioning straight salary and such short-term and long-term incentives as stock options, encourage top management to pursue a responsible strategy.

1) According to the passage, the majority of compensation committees put the greatest emphasis on which of the following when determining compensation for their executives?

- A. Long-term corporate performance
- B. The threat of government regulation
- C. Salaries paid to executives of comparable corporations
- D. The probable effect the determination will have on competitors
- E. The probable effect the economic climate will have on the company

2) The passage suggests which of the following about government legislation requiring that corporate boards undergo reform?

- A. Such legislation is likely to discourage candidates from joining corporate boards.
- B. Such legislation is likely to lead to reduced competition among companies.
- C. The performance of individual companies would be affected by such legislation to a greater extent than would the economy as a whole.
- D. Such legislation would duplicate initiatives already being made by corporate boards to improve their own performance.
- E. Corporate boards themselves could act to make such legislation unnecessary.

3) Which of the following best describes the organization of the passage?

- A. problem is acknowledged, the causes are explored, and a solution is offered.
- B. question is raised, opposing points of view are evaluated, and several alternative answers are discussed.
- C. means of dealing with a problem is proposed, and the manner in which a solution was reached is explained.
- D. plan of action is advanced, and the probable outcomes of that plan are discussed.
- E. Two competing theories are described and then reconciled.

## Passage 141

Grassland songbirds often nest in the same grassland-wetland complexes as waterfowl, particularly in a certain part of those complexes, namely, upland habitats surrounding wetlands. Although some wildlife management procedures directed at waterfowl, such as habitat enhancement or restoration, may also benefit songbirds, the impact of others, especially the control of waterfowl predators, remains difficult to predict. For example, most predators of waterfowl nests prey opportunistically on songbird nests, and removing these predators could directly increase songbird nesting success. Alternatively, small mammals such as mice and ground squirrels are important in the diet of many waterfowl-nest predators and can themselves be important predators of songbird nest. Thus, removing waterfowl-nest predators could affect songbird nesting success through subsequent increases in small-mammal populations.

In 1995 and 1996, researchers trapped and removed certain waterfowl nest predators, primary raccoons and striped skunks, then observed subsequent survival rates for songbird nests. Surprisingly, they observed no significant effect on songbird nesting success. This may be due to several factors. **Neither raccoons nor striped skunks consume ground squirrels, which are important predators of songbird nests.** Thus, their removal may not have led to significant increases in populations of smaller predators. Additionally, both raccoons and striped skunks prefer wetlands and spend little time in upland habitats; removing these species may not have increased the nesting success of songbirds in the uplands enough to allow detection.

1. According to the passage, which of the following is true about the role played by ground squirrels in the ecology of grassland-wetland complexes?

- (A) While not important in the diet of raccoons or striped skunks, ground squirrels are a significant source of food for other waterfowl-nest predators.
- (B) Whereas ground squirrels are typically important as predators of songbird nests, their opportunistic predation on waterfowl nests also has an observable effect on waterfowl nesting success.
- (C) Although most waterfowl-nest predators prey on small mammals such as mice and ground squirrels, populations of ground squirrels tend to increase quickly enough to compensate for this level of predation.
- (D) Although ground squirrels have been known to prey on songbird nests, a larger portion of their diets is usually provided by predation on waterfowl nests.
- (E) Since larger predators tend to prefer small mammals to songbird eggs as a food source, a large population of ground squirrels plays an important role in controlling opportunistic predation on songbird nests.

2. Which of the following best describes the function of the sentence "**Neither raccoons...songbird nests**" in the context of the passage as a whole?

- (A) It raises questions about the validity of a theory described in

the first paragraph.

- (B) It points out an oversimplification that is inherent in the argument presented in the first paragraph.
- (C) It introduces information that may help explain the results of the experiment that are presented earlier in the paragraph.
- (D) It provides a specific example of the type of data collected in the experiment described earlier in the paragraph.
- (E) It anticipates a potential objection to the conclusions drawn by the researchers involved in the experiment described earlier in the paragraph.

3. The primary purpose of the passage is to

- (A) describe some procedures used for wildlife management and consider some problems associated with the execution of those procedures
- (B) outline a problem related to a wildlife management procedure and offer potential explanations for the results of an experiment bearing on that problem
- (C) present experimental results that illustrate the need for certain wildlife management procedures and point out some inconsistencies in those results
- (D) argue that a certain procedure used for wildlife management should be modified because of its unintended consequences
- (E) propose that further experiments be performed to assess the long-term effects of certain wildlife management procedures

4. The passage suggests that removing waterfowl-nest predators could possibly have a negative effect on songbird populations because

- (A) songbird populations could then grow to unsustainable numbers
- (B) small-mammal population could then move out of the uplands into wetland areas
- (C) competition among remaining waterfowl-nest predators could decrease significantly
- (D) a resulting increase in waterfowl populations could crowd out songbird populations
- (E) a resulting increase in small-mammal populations could increase small-mammal predation on songbirds

5. It can be inferred that the habitat preferences of raccoons and striped skunks affected the results of the experiment described in the passage for which of the following reasons?

- (A) Songbird nests in the wetlands are usually located in places that most waterfowl-nest predators cannot reach.
- (B) Raccoons and striped skunks are not usually found in areas where songbird nests tend to be located.
- (C) Mice and ground squirrels tend to avoid predation by raccoons and striped skunks by remaining exclusively in the uplands.
- (D) The populations of small mammals in the wetlands are usually controlled by larger waterfowl-nest predators such as raccoons and striped skunks.
- (E) The waterfowl on which raccoons and striped skunks prey in the wetlands compete with songbirds for food.

## Passage 142

In the 1930's and 1940's, African American industrial workers in the southern United States, who constituted 80 percent of the unskilled factory labor force there, strongly supported unionization. While the American Federation of Labor (AFL) either excluded African Americans or maintained racially segregated unions, the Congress of Industrial Organizations (CIO) organized integrated unions nationwide on the basis of a stated policy of equal rights for all, and African American unionists provided the CIO's backbone. Yet it can be argued that through contracts negotiated and enforced by White union members, unions—CIO unions not excluded—were often instrumental in maintaining the occupational segregation and other forms of racial discrimination that kept African Americans socially and economically oppressed during this period.

However, recognizing employers' power over workers as a central factor in African Americans' economic marginalization, African American workers saw the need to join with White workers in seeking change despite White unionists' toleration of or support for racial discrimination. The persistent efforts of African American unionists eventually paid off: many became highly effective organizers, gaining the respect of even racist White unionists by winning victories for White as well as African American workers. African American unionists thus succeeded in strengthening the unions while using them as instruments of African Americans' economic empowerment.

1. The passage is primarily concerned with
- A. demonstrating that unions failed to address the concerns of African American workers during a particular period
  - B. arguing that African American workers' participation in unions during a particular period was ultimately beneficial to them
  - C. contrasting the treatment of African American workers by two different labor organizations during a particular period
  - D. giving reasons for the success of African American unionists in winning victories for both African American and White workers during a particular period
  - E. questioning one explanation for the attitudes of African American workers toward unionization during a particular period

2. According to the passage, which of the following was true of many racist White unionists during the period discussed in the passage?

- A. Their attitudes toward African American union organizers changed once they recognized that the activities of these organizers were serving workers' interests.
- B. They were a powerful element in the southern labor movement because they constituted the majority of the unskilled factory labor force in the southern United States.
- C. They persisted in opposing the CIO's adoption of a stated policy of equal rights for all.
- D. Their primary goal was to strengthen the negotiating power of the unions through increasing White union membership.
- E. Their advocacy of racial discrimination hampered unions in their efforts to gain more power for workers.

3. The author of the passage suggests which of the following about African American workers who participated in union activities in the 1930's and 1940's?

- (A) They believed that the elimination of discrimination within unions was a necessary first step toward the achievement of economic advancement for African Americans.
- (B) They belonged exclusively to CIO unions because they were excluded from AFL unions.
- (C) They believed that the economic advancement of African American workers depended on organized efforts to **empower** all workers.
- (D) Some of them advocated the organization of separate African American unions because of discriminatory practices in the AFL and the CIO.
- (E) Many of them did not believe that White unionists in CIO unions would tolerate or support racial discrimination against African American workers.

### Passage 143

In the *Wealth of Nations* (1776), Scottish economist Adam Smith asserted that the propensity of “truck, barter and exchange” was both the foundation of commerce and a given quality of human nature, driven by individual desire. Smith’s view that self-interest dominated the business that emerged in early modern (sixteenth- and seventeenth century) England has had tremendous effects on how such relations have been perceived. Today it is typically assumed, for instance, that the development of business relations weakened the spirit of cooperation that characterized village communities and encouraged a spirit of individualism and self-betterment that ran counter to community interest.

However, such a view fails to account for the language that people in early modern England used to articulate their understanding of business relations, language that stressed credit, trust, obligations, and contracts, rather than self-interest. Throughout this period, most business transactions were conducted on credit—of plain dealing and of the keeping of promises—dominated the way in which business relations were conceived. Individual profit and solvency were important, but neither could be achieved without the trust and direct cooperation of one’s neighbours. As a result, buying and selling, far from breaking up communities, actually created numerous bonds that held villages together.

1) **The author of the passage refers to “truck, barter and exchange” in the highlighted text most likely in order to**

- (A) lend authority to the argument that commerce is characterized by self-interest
- (B) identify activities that embody essential qualities of human relationships
- (C) indicate the terms Adam Smith used to define business relations
- (D) represent the everyday speech used in village communities in England
- (E) introduce key terms used in credit transactions in early England

2) **It can be inferred that the author of the passage believes that economic historians whose views have been influenced by Adam Smith have failed to examine which of the following?**

- (A) The power of business relations to shape moral values and beliefs
- (B) The significance of human nature in shaping economic developments and social structure
- (C) The importance of village communities in determining the economic well-being of larger society
- (D) The consequence of individual communities of changes in a country’s economic structure
- (E) The actual language used by people in village communities to refer to their business dealings

3) **The passage is primarily concerned with which of the following?**

- (A) Criticizing a theory of human nature
- (B) Evaluating the impact of a particular economist on modern theories of economic history
- (C) Chronicling the early history of the use of credit in business relations
- (D) Reconsidering accepted ideas about the history of business relations
- (E) Explaining the decline of cooperation in village communities

### Passage 144

Prevailing scholarly opinion holds that modern science began with the great achievements of the scientific revolution of the sixteenth and seventeenth centuries. Modern science should not, however, be identified with any particular set of scientific achievements. Rather, modern science should be identified with a particular way of approaching the study of nature, and many important elements of this approach were already in place and articulated as early as the fourteenth century. Jean Buridan, a prominent fourteenth-century Parisian scholar, argued that science is predicated on the assumption of the "common course of nature." This profound assumption represented a major shift in scholarly focus from the theological investigation of the uncommon or miraculous to the attempted explanation of the regular structure and operation of the world in purely rational and secular terms. Buridan also advocated the application of Occam's razor, the principle that science should seek the simplest possible explanation that fits the evidence. The one important ingredient of modern science that was missing prior to the sixteenth century was the widespread use of experiments, and the scientific revolution of the sixteenth century began when scientists started to use experiments to discover new answers to questions that had already been pondered for several centuries.

1. The primary purpose of the passage is to
  - (A) qualify an established scholarly viewpoint regarding a certain issue
  - (B) summarize prevailing scholarly opinion regarding a certain issue
  - (C) delineate the historical events that led to a change in scholarly opinion
  - (D) reconcile conflicting viewpoints in a debate
  - (E) recommend further inquiry into a particular topic

2. According to the passage, which of the following constitutes prevailing scholarly opinion regarding the beginning of modern science?
  - (A) Many important elements of the modern approach to science were already in place in the fourteenth century
  - (B) The development of modern science was initiated by the pioneering work of Jean Buridan
  - (C) Modern science began with the widespread application of the principle of Occam's razor.
  - (D) Modern science began with a shift in focus from investigation of the miraculous to investigation of the regular operation of the world
  - (E) Modern science began with certain major achievements made during the sixteenth and seventeenth centuries

3. It can be inferred from the passage that the author would be most likely to agree with which of the following statements concerning modern science?
  - (A) The use of experiments is the crucial factor enabling scientists to engage in what can properly be described as modern science.
  - (B) A certain set of scientific achievements had to be accomplished before scientists could engage in modern science.
  - (C) The scientific revolution of the sixteenth and seventeenth centuries marks the beginning of what should be considered modern science.
  - (D) The origins of modern science can be traced back to the articulation of a particular approach to the study of nature.
  - (E) Any scientific experiments conducted before the sixteenth century were unlikely to reflect a focus on modern science

## Passage 145

Social learning in animals is said to occur when direct or indirect social interaction facilitates the acquisition of a novel behavior. It usually takes the form of an experienced animal (the demonstrator) performing a behavior such that the native animal (the observer) subsequently expresses the same behavior sooner, or more completely, than it would have otherwise. One example of social learning is the acquisition of preferences for novel foods.

Some experiments have suggested that among mammals, social learning facilitates the identification of beneficial food items, but that among birds, social learning helps animals avoid toxic substances. For example, one study showed that when red-wing blackbirds observed others consuming a colored food or a food in a distinctly marked container and then becoming ill, they subsequently avoided food associated with that color or container. Another experiment showed that house sparrows consumed less red food after they observed others eating red food that was treated so as to be noxious. Studies on non-avian species have not produced similar results, leading researchers to speculate that avian social learning may be fundamentally different from that of mammals.

But Sherwin's recent experiments with domestic hens do not support the notion that avian social learning necessarily facilitates aversion to novel foods that are noxious or toxic. Even when demonstrator hens reacted with obvious disgust to a specific food, via vigorous head shaking and bill wiping, there was no evidence that observers subsequently avoided eating that food. Sherwin's research team speculated that ecological or social constraints during the evolution of this species might have resulted in there being little benefit from the social learning of unpalatability, for instance, selective pressures for this mode of learning would be reduced if the birds rarely encountered noxious or toxic food or rarely interacted after eating such food, or if the consequences of ingestion were minimal. In a related experiment the same researchers showed that if observer hens watched demonstrator hens react favorably to food of a particular color, then observer hens ate more food of that color than they ate of food of other colors. These results confirmed that avian species can develop preferences for palatable food through social learning.

### 1. The primary purpose of the passage is to discuss the

- (A) techniques used in certain experiments on social learning in birds
- (B) reasons for the differences between social learning in birds and in mammals
- (C) question of how social learning manifests itself in birds
- (D) basis for a widespread belief about a difference in behavior between birds and mammals
- (E) possible reasons why birds may or may not learn from each other in a particular way

### 2. According to the passage, which of the following is true of the experiments on domestic hens conducted by Sherwin's research team?

- (A) Only a small number of observer hens appeared to learn to avoid food that was demonstrated by other hens to be noxious.
- (B) Observer hens ingested food preferentially only after numerous instances of witnessing demonstrator hens preferentially ingest that type of food.
- (C) Observer hens appeared unable to recognize when demonstrator hens found a particular food especially palatable.
- (D) Demonstrator hens reacted adversely to ingesting certain novel foods.

- (E) Demonstrator hens altered their behavior less obviously in response to noxious foods than in response to highly palatable foods.

### 3. It can be inferred that the author of the passage would be most likely to agree with which of the following statements regarding the results of the recent experiments conducted by Sherwin's research team?

- (A) The experiments demonstrate that social learning in avian species facilitates the identification of noxious or toxic foods.
- (B) The experiments suggest that social learning has made avian species less adept than nonavian species at learning to prefer beneficial foods and avoid noxious and toxic foods.
- (C) The experiments undermine the notion that most avian species have evolved in environments where there is little benefit to the social learning of unpalatability.
- (D) The experiments suggest that the acquisition of food preferences in avian species is largely unaffected by social learning.
- (E) The experiments show that social learning in avian species can promote the preferential consumption of beneficial foods but do not support the claim that social learning in avian species promotes the avoidance of noxious or toxic foods.

### 4. Which of the following best describes the main purpose of the first paragraph of the passage?

- (A) It explains why a particular behavior discussed in the remainder of the passage is beneficial to the animals that engage in it.
- (B) It introduces a concept that has been widely misunderstood among nonscientists.
- (C) It outlines the types of studies that have been conducted to investigate a certain animal behavior.
- (D) It provides information necessary to understand the nature of the phenomenon discussed in the remainder of the passage.
- (E) It describes a viewpoint that is called into question later in the passage.

### 5. According to the passage, Sherwin's research team speculated that the social learning of unpalatability within a particular species might be discouraged if the animals

- (A) did not suffer serious effects from any noxious or toxic foods they ingested
- (B) consumed food in small quantities throughout the day rather than in a few large feedings
- (C) had an unusually large variety of foods available to them
- (D) interacted after feeding as well as during feeding
- (E) did not show signs of illness until considerable time had passed following the ingestion of noxious or toxic food

### 6. The passage indicates that which of the following is true about studies of social learning in mammals?

- (A) Such studies have only rarely demonstrated a capacity among mammals to learn to prefer certain foods via observation of other animals.
- (B) Such studies have suggested that in mammals one function of social learning is to establish preferences for novel foods.
- (C) Such studies have demonstrated some capacity among mammals to learn via observation of other animals to avoid ingestion of toxic substances.
- (D) Such studies have been conducted primarily in the mammals' natural habitats rather than in laboratory settings.
- (E) Such studies have focused primarily on forms of social learning other than the acquisition of preferences for novel foods.

## Passage 146

Recently biologists have been interested in a tide-associated periodic behavior displayed by the diatom *Hantzschia virgata*, a microscopic golden-brown alga that inhabits that portion of a shoreline washed by tides (the intertidal zone). Diatoms of this species, sometimes called “commuter” diatoms, remain burrowed in the sand during high tide, and emerge on the sand surface during the daytime low tide. Just before the sand is inundated by the rising tide, the diatoms burrow again. Some scientists hypothesize that commuter diatoms know that it is low tide because they sense an environmental change, such as an alteration in temperature or a change in pressure caused by tidal movement. However, when diatoms are observed under constant conditions in a laboratory, they still display periodic behavior, continuing to burrow on schedule for several weeks. This indicates that commuter diatoms, rather than relying on environmental cues to keep time, possess an internal pacemaker or biological clock that enables them to anticipate periodic changes in the environment. A commuter diatom has an unusually accurate biological clock, a consequence of the unrelenting environmental pressures to which it is subjected; any diatoms that do not burrow before the tide arrives are washed away.

This is not to suggest that the period of this biological clock is immutably fixed. Biologists have concluded that even though a diatom does not rely on the environment to keep time, environmental factors—including changes in the tide’s hydrostatic pressure, salinity, mechanical agitation, and temperature—can alter the period of its biological clock according to changes in the tidal cycle. In short, the relation between an organism’s biological clock and its environment is similar to that between a wristwatch and its owner: the owner cannot make the watch run faster or slower, but can reset the hands. However, this relation is complicated in intertidal dwellers such as commuter diatoms by the fact that these organisms are exposed to the solar-day cycle as well as to the tidal cycle, and sometimes display both solar-day and tidal periods in a single behavior. Commuter diatoms, for example, emerge only during those low tides that occur during the day.

### 1. The passage suggests which of the following about the accuracy of the commuter diatom’s biological clock?

- (A) The accuracy of the commuter diatom’s biological clock varies according to changes in the tidal cycle.
- (B) The unusual accuracy that characterizes the commuter diatom’s biological clock is rare among intertidal species.
- (C) The commuter diatom’s biological clock is likely to be more accurate than the biological clock of a species that is subject to less intense environmental pressures.
- (D) The commuter diatom’s biological clock tends to be more accurate than the biological clocks of most other species because of the consistency of the tidal cycle.
- (E) The accuracy of the commuter diatom’s biological clock tends to fluctuate when the diatom is observed under variable laboratory conditions.

### 2. The author of the passage compares the relationship between an organism’s biological clock and its environment to the relation between a wristwatch and its owner most probably in order to

- (A) point out a fundamental difference between the function of biological clocks in organisms and the use of mechanical clocks by

humans

- (B) illustrate the way in which the period of an organism’s biological clock can be altered by environmental factors
- (C) suggest that there are important similarities between the biological clock in organisms such as the commuter diatom and the biological clock in humans
- (D) support an argument regarding the methods used by certain organisms to counteract the influence of the environment on their biological clocks
- (E) question the accuracy of the biological clock in organisms such as the commuter diatom

### 3. According to the passage, the periodic behavior displayed by commuter diatoms under constant laboratory conditions is characterized by which of the following?

- (A) Greater unpredictability than the corresponding behavior under natural conditions
- (B) A consistent periodic schedule in the short term
- (C) No difference over the long term from the corresponding behavior under natural conditions
- (D) Initial variability caused by the constant conditions of the laboratory
- (E) Greater sensitivity to environmental factors than is the case under natural conditions

### 4. The primary purpose of the passage is to

- (A) dispute the influence of environmental factors on the tide-associated behavioral rhythms displayed by the diatom *Hantzschia virgata*
- (B) describe how certain tide-associated behavioral rhythms displayed by the diatom *Hantzschia virgata* have changed over time
- (C) compare tide-associated behavioral rhythms to solar-day behavioral rhythms in the diatom *Hantzschia virgata*
- (D) examine how certain biological and environmental influences affect the tide-associated behavioral rhythms displayed by the diatom *Hantzschia virgata*
- (E) identify certain environmental factors that limit the effectiveness of the biological clock in the diatom *Hantzschia virgata*

### 5. According to the passage, each of the following is characteristic of the tide-associated periodic behavior of commuter diatoms EXCEPT:

- (A) It is triggered when the diatoms are inundated by the tide
- (B) It is correlated with the rise and fall of the tide
- (C) It adjusts to changes in the tidal cycle
- (D) It is influenced by the solar-day cycle
- (E) It is regulated by an innate time-keeping mechanism

### 6. Which of the following can be inferred from the passage about the effect of the solar-day cycle on the tide-associated periodic behavior displayed by commuter diatoms?

- (A) The solar-day cycle makes this behavior less advantageous to the commuter diatoms at certain times of the year.
- (B) The solar-day cycle makes this behavior somewhat more erratic.
- (C) The solar-day cycle makes this behavior less important to the survival of the commuter diatoms.
- (D) Because of the solar-day cycle, this behavior is forced to proceed at a more rapid pace at certain times during the 24-hour day.
- (E) Because of the solar-day cycle, this behavior is not expressed at certain times during the 24-hour day.

## Passage 147

In 1938, at the government-convened National Health Conference, organized labor emerged as a major proponent of legislation to guarantee universal health care in the United States. The American Medical Association, representing physicians' interests, argued for preserving physicians' free-market prerogatives. Labor activists countered these arguments by insisting that health care was a fundamental right that should be guaranteed by government programs.

The labor activists' position represented a departure from the voluntarist view held until 1935 by leaders of the American Federation of Labor (AFL), a leading affiliation of labor unions; the voluntarist view stressed workers' right to freedom from government intrusions into their lives and represented national health insurance as a threat to workers' privacy. AFL president Samuel Gompers, presuming to speak for all workers, had positioned the AFL as a leading opponent of the proposals for national health insurance that were advocated beginning in 1915 by the American Association for Labor Legislation (AALL), an organization dedicated to the study and reform of labor laws. Gompers' opposition to national health insurance was partly principled, arising from the premise that governments under capitalism invariably served employers', not workers', interests. Gompers feared the probing of government bureaucrats into workers' lives, as well as the possibility that government-mandated health insurance, financed in part by employers, could permit companies to require employee medical examinations that might be used to discharge disabled workers.

Yet the AFL's voluntarism had accommodated certain exceptions: the AFL had supported government intervention on behalf of injured workers and child laborers. AFL officials drew the line at national health insurance, however, partly out of concern for their own power. The fact that AFL outsiders such as the AALL had taken the most prominent advocacy roles antagonized Gompers. That this reform threatened union-sponsored benefit programs championed by Gompers made national health insurance even more objectionable.

Indeed, the AFL leadership did face serious organizational divisions. Many unionists, recognizing that union-run health programs covered only a small fraction of union members and that unions represented only a fraction of the nation's workforce, worked to enact compulsory health insurance in their state legislatures. This activism and the views underlying it came to prevail in the United States labor movement and in 1935 the AFL unequivocally reversed its position on health legislation.

1) The passage suggests which of the following about the voluntarist view held by leaders of the AFL regarding health care?

- (A) It was opposed by the AALL.
- (B) It was shared by most unionists until 1935.
- (C) It antagonized the American Medical Association.
- (D) It maintained that employer-sponsored health care was preferable to union-run health programs.
- (E) It was based on the premise that the government should protect child laborers but not adult workers.

2) According to the passage, Gompers' objection to national health insurance was based in part on his belief that

- (A) union-sponsored health programs were less expensive than government-sponsored programs
- (B) most unionists were covered by and satisfied with union-sponsored health programs
- (C) it would lead some employers to reduce company-sponsored benefits
- (D) it could result in certain workers unfairly losing their jobs
- (E) the AFL should distance itself from the views of the American Medical Association

3) Which of the following best describes the function of the sentence in lines 42-45 ("Yet ... child laborers")?

- (A) It elaborates a point about why the AFL advocated a voluntarist approach to health insurance.
- (B) It identifies issues on which the AFL took a view opposed to that of the AALL.
- (C) It introduces evidence that appears to be inconsistent with the voluntarist view held by AFL leaders.
- (D) It suggests that a view described in the previous sentence is based on faulty evidence.
- (E) It indicates why a contradiction described in the previous paragraph has been overlooked by historians.

4) The primary purpose of this passage is to

- (A) account for the labor organization's success in achieving a particular goal
- (B) discuss how a labor organization came to reverse its position on a particular issue
- (C) explain how disagreement over a particular issue eroded the power of a labor organization
- (D) outline the arguments used by a labor organization's leadership in a particular debate
- (E) question the extent to which a labor organization changed its position on a particular issue

## Passage 147

In the fourteenth and fifteenth centuries, many Western Pueblo settlements in what is now the southwestern United States may have possessed distinctly hierarchical organizational structures. These communities' agricultural systems—which were "intensive" in the use of labor rather than "extensive" in area—may have given rise to political leadership that managed both labor and food resources. That formal management of food resources was needed is suggested by the large size of storage spaces located around some communal Great Kivas (underground ceremonial chambers). Though no direct evidence exists that such spaces were used to store food, Western Pueblo communities lacking sufficient arable land to support their populations could have preserved the necessary extra food, including imported foodstuffs, in such apparently communal spaces.

Moreover, evidence of specialization in producing raw materials and in manufacturing ceramics and textiles indicates differentiation of labor within and between communities. The organizational and managerial demands of such specialization strengthen the possibility that a decision-making elite existed, an elite whose control over labor, the use of community surpluses, and the acquisition of imported goods would have led to a concentration of economic resources in their own hands. Evidence for differential distribution of wealth is found in burials of the period: some include large quantities of pottery, jewelry, and other artifacts, whereas others from the same sites lack any such materials.

1. According to the passage, which of the following is probably true of the storage spaces mentioned in line 14?
  - (A) They were used by the community elite for storage of their own food supplies.
  - (B) They served a ceremonial as well as a practical function.
  - (C) Their size is an indication of the wealth of the particular community to which they belonged.
  - (D) Their existence proves that the community to which they belonged imported large amounts of food.
  - (E) They belonged to and were used by the community as a whole.
2. The primary purpose of the passage is to
  - (A) outline the methods by which resources were managed within a particular group of communities
  - (B) account for the distribution of wealth within a particular group of communities
  - (C) provide support for a hypothesis concerning the social structure of a particular society
  - (D) explain how political leadership changed in a particular historical situation
  - (E) present new evidence that contradicts previous theories about a particular historical situation
3. Which of the following, if true, would most clearly undermine the author's statement in the last sentence of the passage (lines 38-43) regarding the distribution of wealth in Western Pueblo settlements?
  - (A) Only community members of exceptional wealth are likely to have been buried with their personal possessions.
  - (B) Members of communities with extensive agricultural systems are usually buried without personal possessions.
  - (C) Most artifacts found in burial sites were manufactured locally rather than imported from other communities.
  - (D) Burial artifacts are often ritual objects associated with religious practices rather than being the deceased's personal possessions.
  - (E) The quality of burial artifacts varies depending on the site with which they are associated.

### Passage 148

Astronomers theorize that a black hole forms when a massive object shrinks catastrophically under its own gravity, leaving only a gravitational field so strong that nothing escapes it. Astronomers must infer the existence of black holes, which are invisible, from their gravitational influence on the visible bodies surrounding them. For example, observations indicate that gas clouds in galaxy M87 are whirling unusually fast about the galaxy's center. Most astronomers believe that the large concentration of mass at the galaxy's center is a black hole whose gravity is causing the gas to whirl. A few skeptics have argued that the concentration of mass necessary to explain the speed of the whirling gas is not necessarily a black hole: the concentration in M87 might be a cluster of a billion or so dim stars.

The same hypothesis might have been applied to the galaxy NGC 4258, but the notion of such a cluster's existing in NGC 4258 was severely undermined when astronomers measured the speed of a ring of dust and gas rotating close to the galaxy's center. From its speed, they calculated that the core's density is more than 40 times the density estimated for any other galaxy. If the center of NGC 4258 were a star cluster, the stars would be so closely spaced that collisions between individual stars would have long ago torn the cluster apart.

1. The skeptics mentioned in the first paragraph would be most likely to agree with the astronomers mentioned in line 13 about which of the following statements concerning the galaxy M87?

(A) The speed of the gas whirling around the center of M87 is caused by a dense object that is not a black hole.

(B) The concentration of mass at the center of M87 is probably a large cluster of dim stars.

(C) The presence of a black hole at the center of M87 is the most likely explanation for the speed of the gas whirling about the galaxy's core.

(D) The speed of the gas whirling around the center of M87 is caused by a large concentration of mass at the core of M87.

(E) The gravitational influence of a star cluster would not be strong enough to account for the speed of the gas whirling around the core of M87.

2. The passage asserts which of the following about the existence of black holes?

- (A) Astronomers first speculated about the existence of black holes when they observed gas whirling around the center of a particular galaxy.
- (B) Evidence used to argue for the existence of black holes is indirect, coming from their presumed effects on other astronomical bodies.
- (C) Recent observations of certain astronomical bodies have offered proof.
- (D) A considerable body of evidence suggests the existence of black holes, even though their behavior is not completely consistent with the laws of physics.
- (E) Many astronomers are skeptical about certain recent evidence that has been used to argue for the existence of black holes.

3. Which of the following, if true, would most clearly undermine the possible explanation for the whirling gas in M87 that is mentioned in the last sentence of the first paragraph?

- (A) The stars in a star cluster at the center of M87 could exert a strong gravitational force without tearing the cluster apart.
- (B) A cluster of stars at the center would preclude the existence of certain other astronomical phenomena that have been observed at the center of M87.
- (C) The stars within many existing galaxies, such as NGC 4258, are more closely spaced than are the stars within the core of M87.
- (D) Only one other galaxy has been observed to contain gas clouds whirling about its center as they do about the core of M87.
- (E) The gravitational force of a cluster of a billion or so dim stars would be sufficient to cause a whirling ring of gas and dust to collect around the center of a galaxy.

4. The passage is primarily concerned with

- (A) explaining why a particular phenomenon is so rare
- (B) criticizing a method used to gather data about a natural phenomenon
- (C) considering possible instances of a particular phenomenon
- (D) distinguishing among several different kinds of natural phenomena
- (E) questioning a widely accepted explanation for an unusual phenomenon

## Passage 149

The ultimate pendulum clock, indeed the ultimate mechanical clock of any kind, was invented by a British engineer, William Shortt. The first was installed in the Royal Observatory in Edinburgh in 1921. The Shortt clock had two pendulums, primary and secondary. The primary pendulum swung freely in a vacuum chamber. Its only job was to synchronize the swing of the secondary pendulum, which was housed in a neighboring cabinet and drove the time-indicating mechanism. Every 30 seconds the secondary pendulum sent an electrical signal to give a nudge to the primary pendulum. In return, via an elaborate electromechanical linkage, the primary pendulum ensured that the secondary pendulum never got out of step.

Shortt clocks were standard provision in astronomical observatories of the 1920s and 1930s, and are credited with keeping time to better than two milliseconds in a day. Many were on record as losing or gaining no more than one second in a year—a stability of one part in 30 million. The first indications of seasonal variations in the earth's rotation were gleaned by the use of Shortt clocks.

In 1984 Pierre Boucheron carried out a study of a Shortt clock which had survived in the basement of the United States Naval Observatory since 1932. After replacing the electromechanical linkage with modern optical sensing equipment, he measured the Shortt clock's rate against the observatory's atomic clocks for a month. He found that it was stable to 200 microseconds a day over this period, equivalent to two to three parts in a billion. What is more, the data also revealed that the clock was responding to the slight tidal distortion of the earth due to the gravitational pull of the moon and the sun.

In addition to causing the familiar ocean tides, both the sun and the moon raise tides in the solid body of the earth. The effect is to raise and lower the surface of the earth by about 30 centimeters. Since the acceleration due to gravity depends on distance from the center of the earth, this slight tidal movement affects the period of swing of a pendulum. In each case the cycle of the tides caused the clock to gain or lose up to 140 microseconds.

1. The passage most strongly suggests that its author would agree with which of the following statements about clocks?
  - A) Before 1921 no one had designed a clock that used electricity to aid in its timekeeping functions.
  - B) Atomic clocks depend on the operation of mechanisms that were invented by William Shortt and first used in the Shortt clock.
  - C) No type of clock that keeps time more stably and accurately than a Shortt clock relies fundamentally on the operation of a pendulum.
  - D) Subtle changes in the earth's rotation slightly reduce the accuracy of all clocks used in observatories after 1921.
  - E) At least some mechanical clocks that do not have pendulums are almost identical to Shortt clocks in their mode of operation.
2. According to the passage, the use of Shortt clocks led to the discovery that
  - A) optical sensing equipment can be used effectively in time-keeping systems
  - B) atomic clocks can be used in place of pendulum clocks in observatories
  - C) tides occur in solid ground as well as in oceans
  - D) the earth's rotation varies from one time of year to another
  - E) pendulums can be synchronized with one another electronically
3. The passage most strongly suggests that the study described in the third paragraph would not have been possible in the absence of
  - A) accurate information regarding the times at which high and low ocean tides occurred at various locations during 1984
  - B) comparative data regarding the use of Shortt clocks in observatories between 1921 and 1932
  - C) a non-Shortt clock that was known to keep time extremely precisely and reliably
  - D) an innovative electric-power source that was not available in the 1920s and 1930s
  - E) optical data-transmission devices to communicate between the U.S. Naval Observatory and other research facilities
4. The passage most strongly suggests that which of the following is true of the chamber in which a Shortt clock's primary pendulum was housed?
  - A) It contained elaborate mechanisms that were attached to, and moved by, the pendulum.
  - B) It was firmly sealed during normal operation of the clock.
  - C) It was at least partly transparent so as to allow for certain types of visual data output.
  - D) It housed both the primary pendulum and another pendulum.
  - E) It contained a transmitter that was activated at irregular intervals to send a signal to the secondary pendulum.

### Passage 150

Diamonds are almost impossible to detect directly because they are so rare: very rich kimberlite pipes, the routes through which diamonds rise, may contain only three carats of diamonds per ton of kimberlite. Kimberlite begins as magma in Earth's mantle (the layer between the crust and the core). As the magma smashes through layers of rock, it rips out debris, creating a mix of liquid and solid material. Some of the solid material it brings up may come from a so-called diamond-stability field, where conditions of pressure and temperature are conducive to the formation of diamonds. If diamonds are to survive, though, they must shoot toward Earth's surface quickly. Otherwise, they revert to graphite or burn. Explorers seeking diamonds look for specks of "indicator minerals" peculiar to the mantle but carried up in greater quantities than diamonds and eroded out of kimberlite pipes into the surrounding land. The standard ones are garnets, chromites, and ilmenites. One can spend years searching for indicators and tracing them back to the pipes that are their source; however, 90 percent of kimberlite pipes found this way are barren of diamonds, and the rest are usually too sparse to mine.

In the 1970's the process of locating profitable pipes was refined by focusing on the subtle differences between the chemical signatures of indicator minerals found in diamond-rich pipes as opposed to those found in barren pipes. For example, G10 garnets, a type of garnet typically found in diamond-rich pipes, are lower in calcium and higher in chrome than garnets from barren pipes. Geochemists John Gurney showed that garnets with this composition were formed only in the diamond-stability field; more commonly found versions came from elsewhere in the mantle. Gurney also found that though ilmenites did not form in the diamond-stability field, there was a link useful for prospectors: when the iron in ilmenite was highly oxidized, its source pipe rarely contained any diamonds. He reasoned that iron took on more or less oxygen in response to conditions in the kimberlitic magma itself—mainly in response to heat and the available oxygen. When iron became highly oxidized, so did diamonds; that is, they vaporized into carbon dioxide.

#### 1. The primary purpose of the passage is to

- (A) discuss an objection to Gurney's theories about the uses of indicator minerals
- (B) explore the formation of diamonds and the reasons for their scarcity
- (C) analyze the importance of kimberlite pipes in the formation of diamonds
- (D) define the characteristics of indicator minerals under differing conditions
- (E) explain a method of determining whether kimberlite pipes are likely to contain diamonds

2. Each of the following is mentioned in the passage as a difference between G10 garnet and other versions of garnet EXCEPT

- (A) level of oxidation
- (B) commonness of occurrence
- (C) chemical signature
- (D) place of formation
- (E) appearance in conjunction with diamond

3. The passage suggests that the presence of G10 garnet in a kimberlite pipe indicates that

- (A) the pipe in which the garnet is found has a 90% chance of containing diamonds
- (B) the levels of calcium and chrome in the pipe are conducive to diamond formation
- (C) the pipe passed through a diamond-stability field and thus may contain diamonds
- (D) any diamonds the pipe contains would not have come from the diamond-stability field
- (E) the pipe's temperature was so high that it oxidized any diamonds the pipe might have contained

4. According to the passage, Gurney refined the use of ilmenites in prospecting for diamonds in which of the following ways?

- (A) He found that ilmenites are brought up from the mantle by kimberlite pipes and erode out into the surrounding land in greater quantities than diamonds.
- (B) He found that since ilmenites do not form in the diamond-stability field, their presence indicates the absence of diamonds.
- (C) He showed that highly oxidized iron content in ilmenites indicates a low survival rate for diamonds.
- (D) He found that when the iron in ilmenites is highly oxidized, conditions in the magma were probably conducive to the formation of diamonds.
- (E) He showed that ilmenites take on more or less oxygen in the kimberlite pipe depending on the concentration of diamonds

5. Which of the following best describes the primary purpose of the second paragraph of the passage?

- (A) It describes a method of diamond formation different from the one described in the first paragraph.
- (B) It gives examples of the ways in which a method for locating diamonds may be applied to other gems.
- (C) It gives examples of exceptions to the natural phenomenon of diamond formation as described in the first paragraph.
- (D) It discusses an improvement to the process of diamond prospecting described in the first paragraph.
- (E) It challenges the scientific foundation of the method of diamond prospecting described in the first paragraph.

### Passage 151

The fields of antebellum (pre-Civil War) political history and women's history use separate sources and focus on separate issues. Political historians, examining sources such as voting records, newspapers, and politicians' writings, focus on the emergence in the 1840's of a new "American political nation," and since women were neither voters nor politicians, they receive little discussion. Women's historians, meanwhile, have shown little interest in the subject of party politics, instead drawing on personal papers, legal records such as wills, and records of female associations to illuminate women's domestic lives, their moral reform activities, and the emergence of the woman's rights movement.

However, most historians have underestimated the extent and significance of women's political allegiance in the antebellum period. For example, in the presidential election campaigns of the 1840's, the Virginia Whig party strove to win the allegiance of Virginia's women by inviting them to rallies and speeches. According to Whig propaganda, women who turned out at the party's rallies gathered information that enabled them to mold party-loyal families, reminded men of moral values that transcended party loyalty, and conferred moral standing on the party. Virginia Democrats, in response, began to make similar appeals to women as well. By the mid-1850's the inclusion of women in the rituals of party politics had become commonplace and the ideology that justified such inclusion had been assimilated by the Democrats.

#### 1. The primary purpose of the passage as a whole is to

- A. examine the tactics of antebellum political parties with regard to women
- B. trace the effect of politics on the emergence of the woman's rights movement
- C. point out a deficiency in the study of a particular historical period
- D. discuss the ideologies of opposing antebellum political parties
- E. contrast the methodologies in two differing fields of historical inquiry

#### 2: The author of the passage would be most likely to agree with which of the following statements regarding most historians of the antebellum period?

- A. They have failed to adequately contrast the differing roles that women played in the Democratic and Whig parties in the 1850's.
- B. They have failed to see that political propaganda advocating women's political involvement did not reflect the reality of women's actual roles.
- C. They have incorrectly assumed that women's party loyalty played a small role in Whig and Democratic party politics.
- D. They have misinterpreted descriptions of women's involvement in party politics in records of female associations and women's personal papers.
- E. They have overlooked the role that women's political activities played in the woman's rights movement.

#### 3: According to the second paragraph of the passage (lines 20-42), Whig propaganda included the assertion that

- A. women should enjoy more political rights than they did
- B. women were the most important influences on political attitudes within a family
- C. women's reform activities reminded men of important moral values
- D. women's demonstrations at rallies would influence men's voting behavior
- E. women's presence at rallies would enhance the moral standing of the party

#### 4. According to the passage, which of the following was true of Virginia Democrats in the mid-1850's?

- A. They feared that their party was losing its strong moral foundation.
- B. They believed that the Whigs' inclusion of women in party politics had led to the Whigs' success in many elections.
- C. They created an ideology that justified the inclusion of women in party politics.
- D. They wanted to demonstrate that they were in support of the woman's rights movement.
- E. They imitated the Whigs' efforts to include women in the rituals of party politics

## Passage 152

Scientists generally credit violent collisions between tectonic plates, the mobile fragments of Earth's rocky outer shell, with sculpting the planet's surface, as, for example, when what is now the Indian subcontinent collided with Asia, producing the **Himalayan Mountains**. However, plate tectonics cannot fully explain certain massive surface features, such as the "superswell" of southern Africa, a vast plateau over 1,000 miles across and nearly a mile high. Geologic evidence shows that southern African has been slowly rising for the past 100 million years, yet it has not experienced a tectonic collision for nearly 400 million years. The explanation may be in Earth's mantle, the layer of rock underlying the tectonic plates and extending down over 1,800 miles to the outer edge of Earth's iron core.

Since the early twentieth century, geophysicists have understood that the mantle churns and roils like a thick soup. The relative low density of the hottest rock makes that material buoyant, so it slowly ascends, while cooler, denser rock sinks until heat escaping the molten core warms it enough to make it rise again. While **this process of convection** was known to enable the horizontal movement of tectonic plates, until recently geophysicists were skeptical of its ability to lift or lower the planet's surface vertically. However, **recent technological advances** have allowed geophysicists to make three-dimensional "snapshots" of the mantle by measuring vibrations, or seismic waves, set in motion by earthquakes originating in the planet's outer shell and recording the time it takes for them to travel from an earthquake's epicenter to a particular recording station at the surface. Because geophysicists know that seismic waves become sluggish in hot, low-density rock, and speed up in colder, denser regions, they can now infer the temperatures and densities in a given segment of the interior. By compiling a map of seismic velocities from thousands of earthquakes across the globe, they can also begin to map temperatures and densities throughout the mantle. These methods have revealed some unexpectedly immense formations in the deepest parts of the mantle; the largest of these is a buoyant mass of hot rock directly below Africa's southern tip. Dispelling researchers' initial doubts, computer models have confirmed that this formation is buoyant enough to rise slowly within the mantle and strong enough to push Africa upward as it rises.

**1) In the highlighted text (**Himalayan Mountains**), the author mentions the Himalayan Mountains most likely in order to**

- (A) highlight certain similarities between the southern African superswell and other massive features on Earth's surface
- (B) identify a feature of Earth's surface that predates the origins of the southern African superswell

- (C) provide an example of a feature of Earth's surface that can be explained by plate tectonics
- (D) suggest that geophysicists are correct in attributing the sculpting of Earth's surface to violent collisions between tectonic plates
- (E) give an example of a feature of Earth's surface that scientists are unable to explain fully

**2) It can be Inferred from the passage that prior to the technological advances referred to in the highlighted text (**recent technological**), geophysicist were unable to**

- (A) understand exactly how the collisions of tectonic plates created the Earth's mountains
- (B) establish that mantle material becomes more buoyant as it heats and more sluggish as it cools
- (C) start mapping the densities and temperatures of rock throughout the mantle
- (D) connect the phenomenon of convection within the mantle to the horizontal movement of tectonic plates
- (E) prove that different types of rock within the mantle have different densities

**3) According to the passage, the process of convection mentioned in the highlighted text (**this process of convection**) was regarded until recently by geophysicists as**

- (A) a process unlikely to occur deep within Earth's mantle
- (B) a probable explanation for the rising of the southern African plateau
- (C) an improbable explanation for the horizontal movement of tectonic plates
- (D) unlikely to account for the vertical rising or lowering of Earth's surface
- (E) unrelated to the creation of Earth's most massive surface features

**4) According to the passage, which of the following pieces of geological evidence makes plate tectonics an inadequate explanation for the existence of the superswell of southern Africa?**

- (A) The depth of the mantle underlying the tectonic plates surrounding southern Africa
- (B) The absence of any significant mountain ranges in the vicinity of the superswell
- (C) The vast size of the plateau comprising the superswell's most visible feature
- (D) The rate at which the superswell has been rising above sea level over the past 100 million years
- (E) The absence of any tectonic collisions in southern Africa for several hundred million years prior to the origin of the superswell

### Passage 153

Following the Civil War and the emancipation of the slaves, agricultural labor in the southern United States was increasingly performed by formerly enslaved African American sharecroppers (tenant farmers); sharecropping appeared to promise them economic opportunity. Historians argue that emancipation gave these workers their first opportunity to reserve some of their time for themselves, causing the aggregate amount of labor performed in the South immediately after the war to drop below prewar levels. The resulting labor shortage forced landowners to offer workers better compensation in order to attract labor forces. Thus, the sharecroppers were in a position to contract with landowners to work for a half-share of the crop that they cultivated and harvested, and they did not have to accept the low wages and gang-labor conditions that were the primary alternative.

A major economic factor affecting sharecroppers, however, was a barter system by which merchants (often the landowners themselves) sold essential supplies to sharecroppers in exchange for first legal claim to the growing crop. Since sharecroppers' only collateral was their crops, they were obliged to plant whatever creditors wanted, almost always cotton. Because of this system, the South increasingly produced too little food and too much cotton. Cotton prices fell, and sharecroppers, overburdened with debt, were unable to make economic gains.

**1) According to the passage, historians contend that the aggregate amount of labor performed in South immediately after the Civil War decreased because**

- (A) landowners were initially unwilling to offer the wages and working conditions that would attract a large labor force
- (B) many of those who had previously performed essential labor migrate to escape adverse postwar economic and social condition
- (C) workers who had previously been forced to devote all their time to working for a landowner became able to allocate their time differently
- (D) cotton, which became the preferred crop among southern landowners, less labor than previously predominant crops
- (E) the economy of the South was less dependent on agricultural production than it had been before the war

**2) It can be inferred from the passage that a primary obstacle to sharecroppers' economic progress was the**

- (A) need to use crops as collateral for purchasing supplies
- (B) adverse labor conditions imposed by landowners
- (C) inadequate supplies available under the barter system
- (D) continued pressure on landowners to use gang labor
- (E) inherent difficulties of cultivating cotton crops

**3) Which of the following best expresses the central idea of the passage?**

- (A) Landowners' increasing dependence on the barter system with sharecroppers led to overproduction of prices cotton and falling cotton prices.
- (B) Landowners implemented a barter system, with hopes of raising cotton prices, but the effect on cotton prices proved negligible
- (C) The economic advancement of former slaves was hampered by their inability to use their shares of crops as collateral to buy essential supplies on credit.
- (D) Certain economic pressures enabled former slaves to become sharecroppers following the Civil War, but the barter system for acquiring supplies curtailed their economic advancement.
- (E) Labor shortages in the South following the Civil War were primarily caused by landowners' initial resistance to the sharecropping system, but eventually they accepted this system.

### Passage 154

When the object designated 1992 QB1 was discovered, news reports suggested that there were now ten known planets in our Solar System. In fact, the object is too small to qualify as a planet; still, its discovery has generated real excitement among astronomers. It confirms the existence of an entire class of objects orbiting the Sun, in addition to the planets, asteroids, and comets.

Astronomers had already suspected that several known objects in the region of the outer planets belonged to a special class of astronomical objects, small bodies composed of rock and Ice. These "Ice dwarfs" were thought to originate in the Kuiper Belt, which lies beyond the orbits of the planets 1992 QB1, currently located between the Kuiper Belt and the outer planets and apparently moving inward toward the Sun, is the missing link that shows that ice dwarfs originate in the Kuiper Belt. It provides a stepping stone in theory, like the transition from always seeing a species of animal in captivity—from which one can hypothesize that such animals exist in the wild—to actually finding them in their natural habitat. Ice dwarfs are not, however, mere oddities to add to the astronomical menagerie. Objects like them were undoubtedly the building blocks of the giant planets.

1. According to the passage, the discovery of 1992 QB1 provided astronomers with information about which of the following?

- (A) How ice dwarfs are formed
- (B) The place where ice dwarfs originated
- (C) The composition of ice dwarfs
- (D) The location of the Kuiper Belt
- (E) What role ice dwarfs played in the formation of the giant planets

2. The passage author implies which of the following about news reports concerning 1992 QB1?

- (A) They exaggerated astronomers' excitement about the object.
- (B) They contained inaccurate information about the size of the object.
- (C) They initially reported that the object was in the Kuiper Belt.
- (D) They incorrectly identified the object as a planet.
- (E) They prematurely identified the object as an ice dwarf.

3. The primary purpose of the passage is to

- (A) describe research and predict new developments
- (B) report a discovery and indicate its significance
- (C) explain a theory and its implications
- (D) question the validity of a hypothesis
- (E) propose a new classification

### Passage 155

The most fundamental decision a nonprofit organization can make is to define the results it must deliver in order to be successful. That process entails translating the organization's mission into goals that are simultaneously compelling enough to attract ongoing support from stakeholders and specific enough to inform resource allocations. One approach is for nonprofit leaders to formulate and agree upon the organization's intended impact. A strong intended-impact statement identifies both the beneficiaries of a nonprofit's activities and the benefits the organization will provide—that is, the change in behavior, knowledge, or status quo its programs are designed to effect. Such specificity gives decision makers a powerful lens to use when they have to make trade-offs among worthy, competing priorities.

Discussions about an organization's intended impact tend to be iterative, inclusive (drawing in board as well as staff members), and incredibly hard. One source of difficulty: legitimate needs invariably outstrip any single organization's ability to meet them. So by clarifying its strategy and scope, the nonprofit is also determining what it will not do. This involves tough choices, without "right" answers. But only by making them can a nonprofit align its limited resources with the activities that will have the greatest impact.

#### **1)The passage most strongly implies which of the following about clarifying the intended impact of a nonprofit organization's activities?**

- A) Decision makers must make difficult choices about whether requests from would-be recipients of the organization's services are legitimate.
- B)The organization will most likely need to narrow its intended activities to a subset of those that its decision makers would like to include.
- C)The organization should not try to define in detail the categories of beneficiaries that it intends to serve.
- D)To make effective choices about how best to target which needs, the organization may have to exclude some board members or staff from deliberations.
- E)The organization's leaders often find it unnecessary to decide among beneficiaries' apparently competing needs.

#### **2)Which of the following most accurately states the main idea of the passage?**

- A)The process of developing an intended-impact statement for a nonprofit organization can be made less difficult by involving all types of stakeholders, including beneficiaries, board members, and staff.
- B) Nonprofit organizations have difficulty meeting all the legitimate needs of their beneficiaries because those needs are greater than the resources available.
- C) A crucial task that nonprofit organizations' leaders face is determining who the beneficiaries of the organization's services will be and how the benefits are to be delivered.
- D) A nonprofit organization can significantly benefit by defining its mission in order to convince stakeholders, particularly donors, of the importance of the organization's work.
- E) A good definition of a nonprofit organization's intended impact is difficult to develop but can play an integral role in effectively targeting the organization's uses of its resources.

#### **3) Which of the following is most clearly an example of a strong intended-impact statement, as described in the passage?**

- A) Our organization is an educational nonprofit corporation that seeks to raise awareness about environmentally friendly consumer products.
- B)The beneficiaries of our organization are orphans and vulnerable children under the age of 18 in both developing and developed nations.
- C) Our organization offers facilities and services that exceed both local and national requirements for delivering high-quality child care.
- D)The key stakeholders in our organization are its current and potential donors, its board members, its staff, and the clients receiving its services.
- E)Our organization helps homeless young people, ages 12 to 24, in our community develop the self-sufficiency and skills necessary to live independently.

### Passage 156

When the history of women began to receive focused attention in the 1970', Eleanor Roosevelt was one of a handful of female Americans who were well known to both historians and the general public. Despite the evidence that she had been important in social reform circles before her husband was elected President and that she continued to advocate different causes than he did, she held a place in the public imagination largely because she was the wife of a particularly influential President. Her own activities were seen as preparing the way for her husband's election or as a complement to his programs. Even Joseph Lash's two volumes of Sympathetic biography, *Eleanor and Franklin* (1971) and *Eleanor: The Years Alone* (1972), reflected this assumption.

Lash's biography revealed a complicated woman who sought through political activity both to flee inner misery and to promote causes in which she passionately believed. However, she still appeared to be an idiosyncratic figure, somehow self-generated not amenable to any generalized explanation. She emerged from the biography as a mother to the entire nation, or as a busybody, but hardly as a social type, a figure comprehensible in terms of broader social developments. But more recent work on the feminism of the post-suffrage years (following 1920) allows us to see Roosevelt in a different light and to bring her life into a more richly detailed context. Lois Scharf's *Eleanor Roosevelt*, written in 1987, depicts a generation of privileged women, born in the late nineteenth century and maturing in the twentieth, who made the transition from old patterns of female association to new ones. Their views and their lives were full of **contradictions**. They maintained female social networks but began to integrate women into mainstream politics; they demanded equal treatment but also argued that women's maternal responsibilities made them both wards and representatives of the public interest. Thanks to Scharf and others, Roosevelt's activities—for example, her support both for labor laws protecting women and for appointments of women to high public office—have become intelligible in terms of this social context rather than as the idiosyncratic career of a famous man's wife.

#### 1. The passage as a whole is primarily concerned with which of the following?

- (A) Changes in the way in which Eleanor Roosevelt's life is understood
- (B) Social changes that made possible the role played by Eleanor Roosevelt in social reform
- (C) Changes in the ways in which historians have viewed the lives of American women
- (D) Social changes that resulted from the activities of Eleanor Roosevelt
- (E) Changes in the social roles that American women have played

#### 2. Which of the following studies would proceed in a way most similar to the way in which, according to the passage, Scharf's book interprets Eleanor Roosevelt's career?

- (A) An exploration of the activities of a wealthy social reformer in terms of the ideals held by the reformer

- (B) A history of the leaders of a political party which explained how the conflicting aims of its individual leaders thwarted and diverted the activities of each leader
- (C) An account of the legislative career of a conservative senator which showed his goals to have been derived from a national conservative movement of which the senator was a part
- (D) A biography of a famous athlete which explained her high level of motivation in terms of the kind of family in which she grew up
- (E) A history of the individuals who led the movement to end slavery in the United States which attributed the movement's success to the efforts of those exceptional individuals

#### 3. The author cites which of the following as evidence against the public view of Eleanor Roosevelt held in the 1970's?

- (A) She had been born into a wealthy family.
- (B) Her political career predated the adoption of women's suffrage.
- (C) She continued her career in politics even after her husband's death.
- (D) She was one of a few female historical figures who were well known to historians by the 1970's.
- (E) Her activism predated her husband's presidency and her projects differed from his.

#### 4. The author indicates that, according to Scharf's biography, which of the following was NOT characteristic of feminists of Eleanor Roosevelt's generation?

- (A) Their lives were full of contradictions
- (B) Their policies identified them as idiosyncratic.
- (C) They were from privileged backgrounds.
- (D) They held that women had unique responsibilities.
- (E) They made a transition from old patterns of an association to new ones.

#### 5. The author mentions which of the following as one of the "contradictions" (highlighted) evident in the lives of the women discussed in the third paragraph?

- (A) They pursued political aims for personal motives.
- (B) They were idiosyncratic individuals who can nevertheless be seen as social types.
- (C) They came from wealthy families but sought to remedy the problems of the poor.
- (D) They demanded equal treatment for women but justified the privileges of wealth.
- (E) They maintained female social networks but promoted women's participation in mainstream politics.

#### 6. The author credits which of the following for making possible the current understanding of Eleanor Roosevelt's career?

- A) The work of historians in the 1970s
- B) Accounts written by feminists in the 1920s
- C) Recent studies of feminists of her generation
- D) Official records of her husband's presidency
- E) The discovery of the writings of her associates

## Passage 157

In most earthquakes the Earth's crust cracks like porcelain. Stress builds up until a fracture forms at a depth of a few kilometers and the crust slips to relieve the stress. Some earthquakes, however, take place hundreds of kilometers down in the Earth's mantle, where high pressure makes rock so ductile that it flows instead of cracking, even under stress severe enough to deform it like putty. How can there be earthquakes at such depths?

That such deep events do occur has been accepted only since 1927, when the seismologist Kiyoo Wadati convincingly demonstrated their existence. Instead of comparing the arrival times of seismic waves at different locations, as earlier researchers had done, Wadati relied on a time difference between the arrival of primary (P) waves and the slower secondary (S) waves. Because P and S waves travel at different but fairly constant speeds, the interval between their arrivals increases in proportion to the distance from the earthquake focus, or rupture point.

For most earthquakes, Wadati discovered, the interval was quite short near the epicenter, the point on the surface where shaking is strongest. For a few events, however, the delay was long even at the epicenter. Wadati saw a similar pattern when he analyzed data on the intensity of shaking. Most earthquakes had a small area of intense shaking, which weakened rapidly with increasing distance from the epicenter, but others were characterized by a lower peak intensity, felt over a broader area. Both the P-S intervals and the intensity patterns suggested two kinds of earthquakes: the more common shallow events, in which the focus lay just under the epicenter, and deep events, with a focus several hundred kilometers down.

The question remained: how can such quakes occur, given that mantle rock at a depth of more than 50 kilometers is too ductile to store enough stress to fracture? Wadati's work suggested that deep events occur in areas (now called Wadati-Benioff zones) where one crustal plate is forced under another and descends into the mantle. The descending rock is substantially cooler than the surrounding mantle and hence is less ductile and much more liable to fracture.

1. The passage is primarily concerned with
- (A) demonstrating why the methods of early seismologists were flawed
  - (B) arguing that deep events are poorly understood and deserve further study
  - (C) defending a revolutionary theory about the causes of earthquakes and methods of predicting them
  - (D) discussing evidence for the existence of deep events and the conditions that allow them to occur
  - (E) comparing the effects of shallow events with those of deep events

2. The author uses the comparisons to porcelain and putty (lines 2 and 8) in order to
- (A) explain why the Earth's mantle is under great pressure
  - (B) distinguish the earthquake's epicenter from its focus
  - (C) demonstrate the conditions under which a Wadati-Benioff zone forms
  - (D) explain why S waves are slower than P waves
  - (E) illustrate why the crust will fracture but the mantle will not

3. It can be inferred from the passage that if the S waves from an earthquake arrive at a given location long after the P waves, which of the following must be true?
- (A) The earthquake was a deep event.
  - (B) The earthquake was a shallow event.
  - (C) The earthquake focus was distant.
  - (D) The earthquake focus was nearby.
  - (E) The earthquake had a low peak intensity.

4. The method used by Wadati to determine the depths of earthquakes is most like which of the following?
- (A) Determining the depth of a well by dropping stones into the well and timing how long they take to reach the bottom
  - (B) Determining the height of a mountain by measuring the shadow it casts at different times of the day
  - (C) Determining the distance from a thunderstorm by timing the interval between the flash of a lightning bolt and the thunder it produces
  - (D) Determining the distance between two points by counting the number of paces it takes to cover the distance and measuring a single pace
  - (E) Determining the speed at which a car is traveling by timing how long it takes to travel a known distance

5. The passage supports which of the following statements about the relationship between the epicenter and the focus of an earthquake?
- (A) P waves originate at the focus and S waves originate at the epicenter.
  - (B) In deep events the epicenter and the focus are reversed.
  - (C) In shallow events the epicenter and the focus coincide.
  - (D) In both deep and shallow events the focus lies beneath the epicenter.
  - (E) The epicenter is in the crust, whereas the focus is in the mantle.

6. The passage suggests that which of the following must take place in order for any earthquake to occur?
- I. Stress must build up.
  - II. Cool rock must descend into the mantle.
  - III. A fracture must occur.
- (A) I only
  - (B) II only
  - (C) III only
  - (D) I and III only
  - (E) I, II, and III

## Passage 157

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7. Information presented in the passage suggests that, compared with seismic activity at the epicenter of a shallow event, seismic activity at the epicenter of a deep event is characterized by

- (A) shorter P-S intervals and higher peak intensity
- (B) shorter P-S intervals and lower peak intensity
- (C) longer P-S intervals and similar peak intensity
- (D) longer P-S intervals and higher peak intensity
- (E) longer P-S intervals and lower peak intensity

8. The passage suggests which of the following about the views held by researchers before 1927?

- (A) Some researchers did not believe that deep events could actually occur.
- (B) Many researchers rejected the use of P-S intervals for determining the depths of earthquakes.
- (C) Some researchers doubted that the mantle was too ductile to store the stress needed for an earthquake.
- (D) Most researchers expected P waves to be slower than S waves.
- (E) Few researchers accepted the current model of how shallow events occur.

9. The author's explanation of how deep events occur would be most weakened if which of the following were discovered to be true?

- (A) Deep events are far less common than shallow events.
- (B) Deep events occur in places other than where crustal plates meet.
- (C) Mantle rock is more ductile at a depth of several hundred kilometers than it is at 50 kilometers.
- (D) The speeds of both P and S waves are slightly greater than previously thought.
- (E) Below 650 kilometers earthquakes cease to occur.

### Passage 158

This passage is based on an article written in the mid-1990s.

During the past 40 years, the star FG Sagittae has changed color from blue to yellow—direct evidence that its temperature has dropped dramatically. Its cooling is probably due to a rapid increase in its size, an inference that is indirectly supported by two independent pieces of observational evidence. Like many stars, FG Sagittae rhythmically pulsates, beating like a heart, and over the past 30 years the period of this pulsation has noticeably lengthened. Given that a star's pulsation period is determined by its radius, FG Sagittae must have gotten larger. Moreover, FG Sagittae's total luminosity—the amount of light it emits over all wavelengths—has been observed to remain constant despite the star's plummeting temperature. It is known that a star's luminosity is the product of its temperature and its radius multiplied together: if one of the two factors has decreased while over the same period luminosity has remained constant, the other factor must have increased.

One interesting sidelight: even though the total amount of light FG Sagittae emits has not changed, the star now appears brighter in the sky than it did 40 years ago. Then, being a blue star, it emitted most of its light at ultraviolet wavelengths, and ultraviolet light is invisible to human eyes.

1. According to the passage, if the luminosity of a given star has remained constant while its temperature has decreased, what will also necessarily be true of the star?
  - (A) The star will have increased in size.
  - (B) The star's apparent brightness will have substantially increased.
  - (C) The star will have changed from blue to yellow in color.
  - (D) The star's pulsation period will have shortened somewhat.
  - (E) The star will have begun to emit less visible light than it once did.

2. It can be inferred from the passage that the phrase "two independent pieces of observational evidence" (see highlighted text) refers to observations made of which of the following?
  - (A) FG Sagittae's apparent brightness in the sky and its temperature
  - (B) FG Sagittae's color and its temperature
  - (C) The amount of light FG Sagittae emits across all wavelengths and its pulsation period
  - (D) FG Sagittae's radius and its color
  - (E) The amount of light FG Sagittae emits across all wavelengths and the amount it emits at ultraviolet wavelengths

3. The author of the passage is primarily concerned with
  - (A) analyzing the effects of a particular phenomenon
  - (B) presenting evidence in favor of a given explanation
  - (C) reporting new data that undermines an accepted view
  - (D) evaluating the arguments in favor of a given hypothesis
  - (E) presenting an interesting sidelight on a complex phenomenon

**Passage 159**

In *American Genesis*, which covers the century of technological innovation in the United States beginning in 1876, Thomas Hughes assigns special prominence to Thomas Edison as archetype of the independent nineteenth-century inventor. However, Hughes virtually ignores Edison's famous contemporary and notorious adversary in the field of electric light and power, George Westinghouse. This comparative neglect of Westinghouse is consistent with other recent historians' works, although it marks an intriguing departure from the prevailing view during the inventors' lifetimes (and for decades afterward) of Edison and Westinghouse as the two "pioneer innovators" of the electrical industry.

My recent reevaluation of Westinghouse, facilitated by materials found in railroad archives, suggests that while Westinghouse and Edison shared important traits as inventors, they differed markedly in their approach to the business aspects of innovation. For Edison as an inventor, novelty was always paramount: the overriding goal of the business of innovation was simply to generate funding for new inventions. Edison therefore undertook just enough sales, product development, and manufacturing to accomplish this. Westinghouse, however, shared the attitudes of the railroads and other industries for whom he developed innovations: product development, standardization, system, and order were top priorities. Westinghouse thus better exemplifies the systematic approach to technological development that would become a hallmark of modern corporate research and development.

- 1) The primary purpose of the passage is to
  - (A) reevaluate a controversial theory
  - (B) identify the flaws in a study
  - (C) propose a new method of historical research
  - (D) compare two contrasting analyses
  - (E) provide a fresh perspective
  
- 2) According to the passage, Edison's chief concern as an inventor was the
  - (A) availability of a commercial market
  - (B) costs of developing a prototype
  - (C) originality of his inventions
  - (D) maintenance of high standards throughout production
  - (E) generation of enough profits to pay for continued marketing
  
- 3) The author of the passage implies that the shift away from the views of Westinghouse's contemporaries should be regarded as
  - (A) a natural outgrowth of the recent revival of interest in Edison
  - (B) a result of scholarship based on previously unknown documents
  - (C) reflective of modern neglect of the views of previous generations
  - (D) inevitable, given the changing trends in historical interpretations
  - (E) surprising, given the stature that Westinghouse once had

## Passage 160

One key to predicting a competitor's strategies is understanding how much that competitor resembles your company. Within a market, companies that resemble each other tend to pursue similar business strategies—called symmetric competition. Companies that have different assets, resources, capabilities, and positions within a market will likely also have different responses to market conditions—called asymmetric competition.

In the fast-food industry, for example, two players faced the same market trends, resulting from the public's concerns about high-fat diets, but responded in markedly different ways. The dominant player, as the target of consumer backlash, introduced a variety of foods it promoted as healthy. **The other**, foreseeing this move, saw an opportunity to find market share in the less health-conscious fast-food segment and so introduced high-fat, high-calorie sandwiches supported by aggressive, defiant ads.

Your company can anticipate competitors' actions by using a resource-based view of strategy: the idea that companies protect, extend, build, or acquire resources and capabilities that are valuable, rare, and successfully exploitable. Applying this view in a systematic way helps identify the options competitors will likely consider for any strategic issue. However, determining which options competitors are likeliest to choose also requires moving beyond resource analysis to understanding the personal perceptions and incentives of competitors' decision makers.

1)The passage refers to the public's concerns about high-fat diets primarily to  
A) provide an example of a type of market trend that affects some companies more than others  
B) suggest that these concerns have increased competition in the fast-food industry  
C) provide evidence that symmetric competition does not typically exist in the fast-food market  
D)help provide an example of how companies within an industry reacted to the same market trend  
E)suggest that market trends are sometimes altered by the marketing strategies of the companies reacting to them

2)The primary purpose of the passage is to  
A) take a stand on a debate regarding business competition  
B) offer recommendations on business strategies to company managers  
C) describe the reactions of two companies to a particular market trend  
D) analyze a type of business strategy used by companies  
E) call into question prevailing beliefs within the marketing industry

3)The passage suggests most strongly that the company mentioned in the highlighted text  
A) was less concerned with prevailing market trends than was its dominant competitor  
B) was in a position to take over the leading market position from its dominant competitor  
C) understood which strategy its dominant competitor was likely to follow  
D) received little negative feedback based on concerns about high-fat diets  
E) refrained from developing a comprehensive resource-based view of marketing strategy