

**RC Primary Purpose Questions from OG 12 (to be solved by Opinion, Tone, Contrast Words, and Word Justification)**

According to economic signaling theory, consumers may perceive the frequency with which an unfamiliar brand is advertised as a cue that the brand is of high quality. The notion that highly advertised brands are associated with high-quality products does have some empirical support. Marquardt and McGann found that heavily advertised products did indeed rank high on certain measures of product quality. Because large advertising expenditures represent a significant investment on the part of a manufacturer, only companies that expect to recoup these costs in the long run, through consumers' repeat purchases of the product, can afford to spend such amounts.

However, two studies by Kirmani have found that although consumers initially perceive expensive advertising as a signal of high brand quality, at some level of spending the manufacturer's advertising effort may be perceived as unreasonably high, implying low manufacturer confidence in product quality. If consumers perceive excessive advertising effort as a sign of a manufacturer's desperation, the result may be less favorable brand perceptions. In addition, a third study by Kirmani, of print advertisements, found that the use of color affected consumer perception of brand quality. Because consumers recognize that color advertisements are more expensive than black and white, the point at which repetition of an advertisement is perceived as excessive comes sooner for a color advertisement than for a black-and-white advertisement.

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

- A. present findings that contradict one explanation for the effects of a particular advertising practice
- B. argue that theoretical explanations about the effects of a particular advertising practice are of limited value without empirical evidence
- C. discuss how and why particular advertising practices may affect consumers' perceptions
- D. contrast the research methods used in two different studies of a particular advertising practice
- E. explain why a finding about consumer responses to a particular advertising practice was unexpected

The idea of the brain as an information processor—a machine manipulating blips of energy according to fathomable rules—has come to dominate neuroscience. However, one enemy of the brain-as-computer metaphor is John R. Searle, a philosopher who argues that since computers simply follow algorithms, they cannot deal with important aspects of human thought such as meaning and content. Computers are syntactic, rather than semantic, creatures. People, on the other hand, understand meaning because they have something Searle obscurely calls the causal powers of the brain.

Yet how would a brain work if not by reducing what it learns about the world to information—some kind of code that can be transmitted from neuron to neuron? What else could meaning and content be? If the code can be cracked, a computer should be able to simulate it, at least in principle. But even if a computer could simulate the workings of the mind, Searle would claim that the machine would not really be thinking; it would just be acting as if it were. His argument proceeds thus: if a computer were used to simulate a stomach, with the stomach's churnings faithfully reproduced on a video screen, the machine would not be digesting real food. It would just be blindly manipulating the symbols that generate the visual display.

Suppose, though, that a stomach were simulated using plastic tubes, a motor to do the churning, a supply of digestive juices, and a timing mechanism. If food went in one end of the device, what came out the other end would surely be digested food. Brains, unlike stomachs, are information processors, and if one information processor were made to simulate another information processor, it is hard to see how one and not the other could be said to think. Simulated thoughts and real thoughts are made of the same element: information. The representations of the world that humans carry around in their heads are already simulations. To accept Searle's argument, one would have to deny the most fundamental notion in psychology and neuroscience: that brains work by processing information.

**The main purpose of the passage is to**

- A. propose an experiment
- B. analyze a function
- C. refute an argument
- D. explain a contradiction
- E. simulate a process

Women's grassroots activism and their vision of a new civic consciousness lay at the heart of social reform in the United States throughout the Progressive Era, the period between the depression of 1893 and America's entry into the Second World War. Though largely disenfranchised except for school elections, white middle-class women reformers won a variety of victories, notably in the improvement of working conditions, especially for women and children. Ironically, though, child labor legislation pitted women of different classes against one another. To the reformers, child labor and industrial home work were equally inhumane practices that should be outlawed, but, as a number of women historians have recently observed, working-class mothers did not always share this view. Given the precarious finances of working-class families and the necessity of pooling the wages of as many family members as possible, working-class families viewed the passage and enforcement of stringent child labor statutes as a personal economic disaster and made strenuous efforts to circumvent child labor laws. Yet reformers rarely understood this resistance in terms of the desperate economic situation of working-class families, interpreting it instead as evidence of poor parenting. This is not to dispute women reformers' perception of child labor as a terribly exploitative practice, but their understanding of child labor and their legislative solutions for ending it failed to take account of the economic needs of working-class families.

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

- A. explain why women reformers of the Progressive Era failed to achieve their goals
- B. discuss the origins of child labor laws in the late nineteenth and early twentieth centuries
- C. compare the living conditions of working-class and middle-class women in the Progressive Era
- D. discuss an oversight on the part of women reformers of the Progressive Era
- E. revise a traditional view of the role played by women reformers in enacting Progressive Era reforms

Ecoefficiency (measures to minimize environmental impact through the reduction or elimination of waste from production processes) has become a goal for companies worldwide, with many realizing significant cost savings from such innovations. Peter Senge and Goran Carstedt see this development as laudable but suggest that simply adopting ecoefficiency innovations could actually worsen environmental stresses in the future. Such innovations reduce production waste but do not alter the number of products manufactured nor the waste generated from their use and discard; indeed, most companies invest in ecoefficiency improvements in order to increase profits and growth. Moreover, there is no guarantee that increased economic growth from ecoefficiency will come in similarly ecoefficient ways, since in today's global markets, greater profits may be turned into investment capital that could easily be reinvested in old-style eco-inefficient industries. Even a vastly more ecoefficient industrial system could, were it to grow much larger, generate more total waste and destroy more habitat and species than would a smaller, less ecoefficient economy. Senge and Carstedt argue that to preserve the global environment and sustain economic growth, businesses must develop a new systemic approach that reduces total material use and total accumulated waste. Focusing exclusively on ecoefficiency, which offers a compelling business case according to established thinking, may distract companies from pursuing radically different products and business models.

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

- A. explain why a particular business strategy has been less successful than was once anticipated
- B. propose an alternative to a particular business strategy that has inadvertently caused ecological damage
- C. present a concern about the possible consequences of pursuing a particular business strategy
- D. make a case for applying a particular business strategy on a larger scale than is currently practiced
- E. suggest several possible outcomes of companies' failure to understand the economic impact of a particular business strategy

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 overrepresented 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.

**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

In 1988 services moved ahead of manufacturing as the main product of the United States economy. But what is meant by "services"? Some economists define a service as something that is produced and consumed simultaneously, for example, a haircut. The broader, classical definition is that a service is an intangible something that cannot be touched or stored. Yet electric utilities can store energy, and computer programmers save information electronically. Thus, the classical definition is hard to sustain.

The United States government's definition is more practical: services are the residual category that includes everything that is not agriculture or industry. Under this definition, services include activities as diverse as engineering and driving a bus. However, besides lacking a strong conceptual framework, this definition fails to recognize the distinction between service industries and service occupations. It categorizes workers based on their company's final product rather than on the actual work the employees perform. Thus, the many service workers employed by manufacturers—bookkeepers or janitors, for example—would fall under the industrial rather than the services category. Such ambiguities reveal the arbitrariness of this definition and suggest that, although practical for government purposes, it does not accurately reflect the composition of the current United States economy.

**The author of the passage is primarily concerned with**

- A. discussing research data underlying several definitions
- B. arguing for the adoption of a particular definition
- C. exploring definitions of a concept
- D. comparing the advantages of several definitions
- E. clarifying some ambiguous definitions

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; non-experts who teach in related areas and are looking for writings for and by Asian Americans 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.

**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

In the seventeenth-century Florentine textile industry, women were employed primarily in low-paying, low-skill jobs. To explain this segregation of labor by gender, economists have relied on the useful theory of human capital. According to this theory, investment in human capital—the acquisition of difficult job-related skills—generally benefits individuals by making them eligible to engage in well-paid occupations. Women’s role as child bearers, however, results in interruptions in their participation in the job market (as compared with men’s) and thus reduces their opportunities to acquire training for highly skilled work. In addition, the human capital theory explains why there was a high concentration of women workers in certain low-skill jobs, such as weaving, but not in others, such as combing or carding, by positing that because of their primary responsibility in child rearing women took occupations that could be carried out in the home.

There were, however, differences in pay scales that cannot be explained by the human capital theory. For example, male construction workers were paid significantly higher wages than female taffeta weavers. The wage difference between these two low-skill occupations stems from the segregation of labor by gender: because a limited number of occupations were open to women, there was a large supply of workers in their fields, and this “overcrowding” resulted in women receiving lower wages and men receiving higher wages.

**The author of the passage would be most likely to describe the explanation provided by the human capital theory for the high concentration of women in certain occupations in the seventeenth-century Florentine textile industry as**

- A. well founded though incomplete
- B. difficult to articulate
- C. plausible but poorly substantiated
- D. seriously flawed
- E. contrary to recent research

(This passage was adapted from an article written in 1992.)

Some observers have attributed the dramatic growth in temporary employment that occurred in the United States during the 1980s to increased participation in the workforce by certain groups, such as first-time or reentering workers, who supposedly prefer such arrangements. However, statistical analyses reveal that demographic changes in the workforce did not correlate with variations in the total number of temporary workers. Instead, these analyses suggest that factors affecting employers account for the rise in temporary employment. One factor is product demand: temporary employment is favored by employers who are adapting to fluctuating demand for products while at the same time seeking to reduce overall labor costs. Another factor is labor’s reduced bargaining strength, which allows employers more control over the terms of employment. Given the analyses, which reveal that growth in temporary employment now far exceeds the level explainable by recent workforce entry rates of groups said to prefer temporary jobs, firms should be discouraged from creating excessive numbers of temporary positions. Government policymakers should consider mandating benefit coverage for temporary employees, promoting pay equity between temporary and permanent workers, assisting labor unions in organizing temporary workers, and encouraging firms to assign temporary jobs primarily to employees who explicitly indicate that preference.

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

- A. present the results of statistical analyses and propose further studies
- B. explain a recent development and predict its eventual consequences
- C. identify the reasons for a trend and recommend measures to address it
- D. outline several theories about a phenomenon and advocate one of them
- E. describe the potential consequences of implementing a new policy and argue in favor of that policy

In 1955 Maurice Duverger published *The Political Role of Women*, the first behavioralist, multinational comparison of women's electoral participation ever to use election data and survey data together. His study analyzed women's patterns of voting, political candidacy, and political activism in four European countries during the first half of the twentieth century. Duverger's research findings were that women voted somewhat less frequently than men (the difference narrowing the longer women had the vote) and were slightly more conservative.

Duverger's work set an early standard for the sensitive analysis of women's electoral activities. Moreover, to Duverger's credit, he placed his findings in the context of many of the historical processes that had shaped these activities. However, since these contexts have changed over time, Duverger's approach has proved more durable than his actual findings. In addition, Duverger's discussion of his findings was hampered by his failure to consider certain specific factors important to women's electoral participation at the time he collected his data: the influence of political regimes, the effects of economic factors, and the ramifications of political and social relations between women and men. Given this failure, Duverger's study foreshadowed the enduring limitations of the behavioralist approach to the multinational study of women's political participation.

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

- A. evaluate a research study
- B. summarize the history of a research area
- C. report new research findings
- D. reinterpret old research findings
- E. reconcile conflicting research findings

Frazier and Mosteller assert that medical research could be improved by a move toward larger, simpler clinical trials of medical treatments. Currently, researchers collect far more background information on patients than is strictly required for their trials—substantially more than hospitals collect—thereby escalating costs of data collection, storage, and analysis. Although limiting information collection could increase the risk that researchers will overlook facts relevant to a study, Frazier and Mosteller contend that such risk, never entirely eliminable from research, would still be small in most studies. Only in research on entirely new treatments are new and unexpected variables likely to arise.

Frazier and Mosteller propose not only that researchers limit data collection on individual patients but also that researchers enroll more patients in clinical trials, thereby obtaining a more representative sample of the total population with the disease under study. Often researchers restrict study participation to patients who have no ailments besides those being studied. A treatment judged successful under these ideal conditions can then be evaluated under normal conditions. Broadening the range of trial participants, Frazier and Mosteller suggest, would enable researchers to evaluate a treatment's efficacy for diverse patients under various conditions and to evaluate its effectiveness for different patient subgroups. For example, the value of a treatment for a progressive disease may vary according to a patient's stage of disease. Patients' ages may also affect a treatment's efficacy.

**The passage is primarily concerned with**

- A. identifying two practices in medical research that may affect the accuracy of clinical trials
- B. describing aspects of medical research that tend to drive up costs
- C. evaluating an analysis of certain shortcomings of current medical research practices
- D. describing proposed changes to the ways in which clinical trials are conducted
- E. explaining how medical researchers have traditionally conducted clinical trials and how such trials are likely to change

Two works published in 1984 demonstrate contrasting approaches to writing the history of United States women. Buel and Buel's biography of Mary Fish (1736–1818) makes little effort to place her story in the context of recent historiography on women. Lebsock, meanwhile, attempts not only to write the history of women in one southern community, but also to redirect two decades of historiographical debate as to whether women gained or lost status in the nineteenth century as compared with the eighteenth century. Although both books offer the reader the opportunity to assess this controversy regarding women's status, only Lebsock's deals with it directly. She examines several different aspects of women's status, helping to refine and resolve the issues. She concludes that while women gained autonomy in some areas, especially in the private sphere, they lost it in many aspects of the economic sphere. More importantly, she shows that the debate itself depends on frame of reference: in many respects, women lost power in relation to men, for example, as certain jobs (delivering babies, supervising schools) were taken over by men. Yet women also gained power in comparison with their previous status, owning a higher proportion of real estate, for example. In contrast, Buel and Buel's biography provides ample raw material for questioning the myth, fostered by some historians, of a colonial golden age in the eighteenth century but does not give the reader much guidance in analyzing the controversy over women's status.

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

- A. examine two sides of a historiographical debate
- B. call into question an author's approach to a historiographical debate
- C. examine one author's approach to a historiographical debate
- D. discuss two authors' works in relationship to a historiographical debate
- E. explain the prevalent perspective on a historiographical debate

According to a recent theory, Archean-age gold-quartz vein systems were formed more than two billion years ago from magmatic fluids that originated from molten granite-like bodies deep beneath the surface of the Earth. This theory is contrary to the widely held view that the systems were deposited from metamorphic fluids, that is, from fluids that formed during the dehydration of wet sedimentary rocks.

The recently developed theory has considerable practical importance. Most of the gold deposits discovered during the original gold rushes were exposed at the Earth's surface and were found because they had shed trails of alluvial gold that were easily traced by simple prospecting methods. Although these same methods still lead to an occasional discovery, most deposits not yet discovered have gone undetected because they are buried and have no surface expression.

The challenge in exploration is therefore to unravel the subsurface geology of an area and pinpoint the position of buried minerals. Methods widely used today include analysis of aerial images that yield a broad geological overview; geophysical techniques that provide data on the magnetic, electrical, and mineralogical properties of the rocks being investigated; and sensitive chemical tests that are able to detect the subtle chemical halos that often envelop mineralization. However, none of these high-technology methods are of any value if the sites to which they are applied have never mineralized, and to maximize the chances of discovery the explorer must therefore pay particular attention to selecting the ground formations most likely to be mineralized. Such ground selection relies to varying degrees on conceptual models, which take into account theoretical studies of relevant factors.

These models are constructed primarily from empirical observations of known mineral deposits and from theories of ore-forming processes. The explorer uses the models to identify those geological features that are critical to the formation of the mineralization being modeled, and then tries to select areas for exploration that exhibit as many of the critical features as possible.

**The author is primarily concerned with**

- A. advocating a return to an older methodology
- B. explaining the importance of a recent theory
- C. enumerating differences between two widely used methods
- D. describing events leading to a discovery
- E. challenging the assumptions on which a theory is based

Current feminist theory, in validating women's own stories of their experience, has encouraged scholars of women's history to view the use of women's oral narratives as the methodology, next to the use of women's written autobiography, that brings historians closest to the "reality" of women's lives. Such narratives, unlike most standard histories, represent experience from the perspective of women, affirm the importance of women's contributions, and furnish present-day women with historical continuity that is essential to their identity, individually and collectively.

Scholars of women's history should, however, be as cautious about accepting oral narratives at face value as they already are about written memories. Oral narratives are no more likely than are written narratives to provide a disinterested commentary on events or people. Moreover, the stories people tell to explain themselves are shaped by narrative devices and storytelling conventions, as well as by other cultural and historical factors, in ways that the storytellers may be unaware of. The political rhetoric of a particular era, for example, may influence women's interpretations of the significance of their experience. Thus a woman who views the Second World War as pivotal in increasing the social acceptance of women's paid work outside the home may reach that conclusion partly and unwittingly because of wartime rhetoric encouraging a positive view of women's participation in such work.

**The passage is primarily concerned with**

- A. contrasting the benefits of one methodology with the benefits of another
- B. describing the historical origins and inherent drawbacks of a particular methodology
- C. discussing the appeal of a particular methodology and some concerns about its use
- D. showing that some historians' adoption of a particular methodology has led to criticism of recent historical scholarship
- E. analyzing the influence of current feminist views on women's interpretations of their experience

**Which of the following best describes the function of the last sentence of the passage?**

- A. It describes an event that historians view as crucial in recent women's history.
- B. It provides an example of how political rhetoric may influence the interpretations of experience reported in women's oral narratives.
- C. It provides an example of an oral narrative that inaccurately describes women's experience during a particular historical period.
- D. It illustrates the point that some women are more aware than others of the social forces that shape their oral narratives.
- E. It identifies the historical conditions that led to the social acceptance of women's paid work outside the home.

After evidence was obtained in the 1920s that the universe is expanding, it became reasonable to ask: Will the universe continue to expand indefinitely, or is there enough mass in it for the mutual attraction of its constituents to bring this expansion to a halt? It can be calculated that the critical density of matter needed to brake the expansion and “close” the universe is equivalent to three hydrogen atoms per cubic meter. But the density of the observable universe—luminous matter in the form of galaxies—comes to only a fraction of this. If the expansion of the universe is to stop, there must be enough invisible matter in the universe to exceed the luminous matter in density by a factor of roughly 70.

Our contribution to the search for this “missing matter” has been to study the rotational velocity of galaxies at various distances from their center of rotation. It has been known for some time that outside the bright nucleus of a typical spiral galaxy luminosity falls off rapidly with distance from the center. If luminosity were a true indicator of mass, most of the mass would be concentrated toward the center. Outside the nucleus the rotational velocity would decrease geometrically with distance from the center, in conformity with Kepler’s law. Instead we have found that the rotational velocity in spiral galaxies either remains constant with increasing distance from the center or increases slightly. This unexpected result indicates that the falloff in luminous mass with distance from the center is balanced by an increase in non-luminous mass.

Our findings suggest that as much as 90 percent of the mass of the universe is not radiating at any wavelength with enough intensity to be detected on the Earth. Such dark matter could be in the form of extremely dim stars of low mass, of large planets like Jupiter, or of black holes, either small or massive. While it has not yet been determined whether this mass is sufficient to close the universe, some physicists consider it significant that estimates are converging on the critical value.

**The passage is primarily concerned with**

- |                                       |                                       |                                  |
|---------------------------------------|---------------------------------------|----------------------------------|
| A. defending a controversial approach | B. criticizing an accepted view       | C. summarizing research findings |
| D. contrasting competing theories     | E. describing an innovative technique |                                  |

In the two decades between 1910 and 1930, more than ten percent of the black population of the United States left the South, where the preponderance of the black population had been located, and migrated to northern states, with the largest number moving, it is claimed, between 1916 and 1918. It has been frequently assumed, but not proved, that the majority of the migrants in what has come to be called the Great Migration came from rural areas and were motivated by two concurrent factors: the collapse of the cotton industry following the boll weevil infestation, which began in 1898, and increased demand in the North for labor following the cessation of European immigration caused by the outbreak of the First World War in 1914. This assumption has led to the conclusion that the migrants’ subsequent lack of economic mobility in the North is tied to rural background, a background that implies unfamiliarity with urban living and a lack of industrial skills.

But the question of who actually left the South has never been rigorously investigated. Although numerous investigations document an exodus from rural southern areas to southern cities prior to the Great Migration, no one has considered whether the same migrants then moved on to northern cities. In 1910 more than 600,000 black workers, or ten percent of the black workforce, reported themselves to be engaged in “manufacturing and mechanical pursuits,” the federal census category roughly encompassing the entire industrial sector. The Great Migration could easily have been made up entirely of this group and their families. It is perhaps surprising to argue that an employed population could be enticed to move, but an explanation lies in the labor conditions then prevalent in the South.

About thirty-five percent of the urban black population in the South was engaged in skilled trades. Some were from the old artisan class of slavery—blacksmiths, masons, carpenters—which had had a monopoly of certain trades, but they were gradually being pushed out by competition, mechanization, and obsolescence. The remaining sixty-five percent, more recently urbanized, worked in newly developed industries—tobacco, lumber, coal and iron manufacture, and railroads. Wages in the South, however, were low, and black workers were aware, through labor recruiters and the black press, that they could earn more even as unskilled workers in the North than they could as artisans in the South. After the boll weevil infestation, urban black workers faced competition from the continuing influx of both black and white rural workers, who were driven to undercut the wages formerly paid for industrial jobs. Thus, a move north would be seen as advantageous to a group that was already urbanized and steadily employed, and the easy conclusion tying their subsequent economic problems in the North to their rural background comes into question.

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

- A. support an alternative to an accepted methodology
- B. present evidence that resolves a contradiction
- C. introduce a recently discovered source of information
- D. challenge a widely accepted explanation
- E. argue that a discarded theory deserves new attention

In *Winters v. United States* (1908), the Supreme Court held that the right to use waters flowing through or adjacent to the Fort Belknap Indian Reservation was reserved to American Indians by the treaty establishing the reservation. Although this treaty did not mention water rights, the Court ruled that the federal government, when it created the reservation, intended to deal fairly with American Indians by reserving for them the waters without which their lands would have been useless. Later decisions, citing *Winters*, established that courts can find federal rights to reserve water for particular purposes if (1) the land in question lies within an enclave under exclusive federal jurisdiction, (2) the land has been formally withdrawn from federal public lands—i.e., withdrawn from the stock of federal lands available for private use under federal land use laws—and set aside or reserved, and (3) the circumstances reveal the government intended to reserve water as well as land when establishing the reservation. Some American Indian tribes have also established water rights through the courts based on their traditional diversion and use of certain waters prior to the United States' acquisition of sovereignty. For example, the Rio Grande pueblos already existed when the United States acquired sovereignty over New Mexico in 1848. Although they at that time became part of the United States, the pueblo lands never formally constituted a part of federal public lands; in any event, no treaty, statute, or executive order has ever designated or withdrawn the pueblos from public lands as American Indian reservations. This fact, however, has not barred application of the *Winters* doctrine. What constitutes an American Indian reservation is a question of practice, not of legal definition, and the pueblos have always been treated as reservations by the United States. This pragmatic approach is buttressed by *Arizona v. California* (1963), wherein the Supreme Court indicated that the manner in which any type of federal reservation is created does not affect the application to it of the *Winters* doctrine. Therefore, the reserved water rights of Pueblo Indians have priority over other citizens' water rights as of 1848, the year in which pueblos must be considered to have become reservations.

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

- A. trace the development of laws establishing American Indian reservations
- B. explain the legal bases for the water rights of American Indian tribes
- C. question the legal criteria often used to determine the water rights of American Indian tribes
- D. discuss evidence establishing the earliest date at which the federal government recognized the water rights of American Indians
- E. point out a legal distinction between different types of American Indian reservations

Archaeology as a profession faces two major problems. First, it is the poorest of the poor. Only paltry sums are available for excavating and even less is available for publishing the results and preserving the sites once excavated. Yet archaeologists deal with priceless objects every day. Second, there is the problem of illegal excavation, resulting in museum-quality pieces being sold to the highest bidder.

I would like to make an outrageous suggestion that would at one stroke provide funds for archaeology and reduce the amount of illegal digging. I would propose that scientific archaeological expeditions and governmental authorities sell excavated artifacts on the open market. Such sales would provide substantial funds for the excavation and preservation of archaeological sites and the publication of results. At the same time, they would break the illegal excavator's grip on the market, thereby decreasing the inducement to engage in illegal activities.

You might object that professionals excavate to acquire knowledge, not money. Moreover, ancient artifacts are part of our global cultural heritage, which should be available for all to appreciate, not sold to the highest bidder. I agree. Sell nothing that has unique artistic merit or scientific value. But, you might reply, everything that comes out of the ground has scientific value. Here we part company. Theoretically, you may be correct in claiming that every artifact has potential scientific value. Practically, you are wrong.

I refer to the thousands of pottery vessels and ancient lamps that are essentially duplicates of one another. In one small excavation in Cyprus, archaeologists recently uncovered 2,000 virtually indistinguishable small jugs in a single courtyard. Even precious royal seal impressions known as *l'melekh* handles have been found in abundance—more than 4,000 examples so far. The basements of museums are simply not large enough to store the artifacts that are likely to be discovered in the future. There is not enough money even to catalog the finds; as a result, they cannot be found again and become as inaccessible as if they had never been discovered. Indeed, with the help of a computer, sold artifacts could be more accessible than are the pieces stored in bulging museum basements. Prior to sale, each could be photographed and the list of the purchasers could be maintained on the computer. A purchaser could even be required to agree to return the piece if it should become needed for scientific purposes.

It would be unrealistic to suggest that illegal digging would stop if artifacts were sold on the open market. But the demand for the clandestine product would be substantially reduced. Who would want an unmarked pot when another was available whose provenance was known, and that was dated stratigraphically by the professional archaeologist who excavated it?

**The primary purpose of the passage is to propose**

- A. an alternative to museum display of artifacts
- B. a way to curb illegal digging while benefiting the archaeological profession
- C. a way to distinguish artifacts with scientific value from those that have no such value
- D. the governmental regulation of archaeological sites
- E. a new system for cataloging duplicate artifacts

Traditionally, the first firm to commercialize a new technology has benefited from the unique opportunity to shape product definitions, forcing followers to adapt to a standard or invest in an unproven alternative. Today, however, the largest payoffs may go to companies that lead in developing integrated approaches for successful mass production and distribution.

Producers of the Beta format for videocassette recorders (VCRs), for example, were first to develop the VCR commercially in 1975, but producers of the rival VHS (Video Home System) format proved to be more successful at forming strategic alliances with other producers and distributors to manufacture and market their VCR format. Seeking to maintain exclusive control over VCR distribution, Beta producers were reluctant to form such alliances and eventually lost ground to VHS in the competition for the global VCR market.

Despite Beta's substantial technological head start and the fact that VHS was neither technically better nor cheaper than Beta, developers of VHS quickly turned a slight early lead in sales into a dominant position. Strategic alignments with producers of prerecorded tapes reinforced the VHS advantage. The perception among consumers that prerecorded tapes were more available in VHS format further expanded VHS's share of the market. By the end of the 1980s, Beta was no longer in production.

**The passage is primarily concerned with which of the following?**

- A. Evaluating two competing technologies
- B. Tracing the impact of a new technology by narrating a sequence of events
- C. Reinterpreting an event from contemporary business history
- D. Illustrating a business strategy by means of a case history
- E. Proposing an innovative approach to business planning

**Which of the following best describes the relation of the first paragraph to the passage as a whole?**

- A. It makes a general observation to be exemplified.
- B. It outlines a process to be analyzed.
- C. It poses a question to be answered.
- D. It advances an argument to be disputed.
- E. It introduces conflicting arguments to be reconciled.

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.

**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

**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



During the 1960s and 1970s, the primary economic development strategy of local governments in the United States was to attract manufacturing industries. Unfortunately, this strategy was usually implemented at another community's expense: many manufacturing facilities were lured away from their moorings elsewhere through tax incentives and slick promotional efforts. Through the transfer of jobs and related revenues that resulted from this practice, one town's triumph could become another town's tragedy.

In the 1980s the strategy shifted from this zero-sum game to one called "high-technology development," in which local governments competed to attract newly formed high-technology manufacturing firms. Although this approach was preferable to victimizing other geographical areas by taking their jobs, it also had its shortcomings: high-tech manufacturing firms employ only a specially trained fraction of the manufacturing workforce, and there simply are not enough high-tech firms to satisfy all geographic areas.

Recently, local governments have increasingly come to recognize the advantages of yet a third strategy: the promotion of homegrown small businesses. Small indigenous businesses are created by a nearly ubiquitous resource, local entrepreneurs. With roots in their communities, these individuals are less likely to be enticed away by incentives offered by another community. Indigenous industry and talent are kept at home, creating an environment that both provides jobs and fosters further entrepreneurship.

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

- A. advocate more effective strategies for encouraging the development of high technology enterprises in the United States
- B. contrast the incentives for economic development offered by local governments with those offered by the private sector
- C. acknowledge and counter adverse criticism of programs being used to stimulate local economic development
- D. define and explore promotional efforts used by local governments to attract new industry
- E. review and evaluate strategies and programs that have been used to stimulate economic development

**The tone of the passage suggests that the author is most optimistic about the economic development potential of which of the following groups?**

- A. Local governments
- B. High-technology promoters
- C. Local entrepreneurs
- D. Manufacturing industry managers
- E. Economic development strategists

Many United States companies have, unfortunately, made the search for legal protection from import competition into a major line of work. Since 1980 the United States International Trade Commission (ITC) has received about 280 complaints alleging damage from imports that benefit from subsidies by foreign governments. Another 340 charge that foreign companies "dumped" their products in the United States at "less than fair value." Even when no unfair practices are alleged, the simple claim that an industry has been injured by imports is sufficient grounds to seek relief.

Contrary to the general impression, this quest for import relief has hurt more companies than it has helped. As corporations begin to function globally, they develop an intricate web of marketing, production, and research relationships. The complexity of these relationships makes it unlikely that a system of import relief laws will meet the strategic needs of all the units under the same parent company.

Internationalization increases the danger that foreign companies will use import relief laws against the very companies the laws were designed to protect. Suppose a United States-owned company establishes an overseas plant to manufacture a product while its competitor makes the same product in the United States. If the competitor can prove injury from the imports—and that the United States company received a subsidy from a foreign government to build its plant abroad—the United States company's products will be uncompetitive in the United States, since they would be subject to duties.

Perhaps the most brazen case occurred when the ITC investigated allegations that Canadian companies were injuring the United States salt industry by dumping rock salt, used to de-ice roads. The bizarre aspect of the complaint was that a foreign conglomerate with United States operations was crying for help against a United States company with foreign operations. The "United States" company claiming injury was a subsidiary of a Dutch conglomerate, while the "Canadian" companies included a subsidiary of a Chicago firm that was the second-largest domestic producer of rock salt.

**The passage is chiefly concerned with**

- A. arguing against the increased internationalization of United States corporations
- B. warning that the application of laws affecting trade frequently has unintended consequences
- C. demonstrating that foreign-based firms receive more subsidies from their governments than United States firms receive from the United States government
- D. advocating the use of trade restrictions for "dumped" products but not for other imports
- E. recommending a uniform method for handling claims of unfair trade practices

**The last paragraph performs which of the following functions in the passage?**

- A. It summarizes the discussion thus far and suggests additional areas for research.
- B. It presents a recommendation based on the evidence presented earlier.
- C. It discusses an exceptional case in which the results expected by the author of the passage were not obtained.
- D. It introduces an additional area of concern not mentioned earlier.
- E. It cites a specific case that illustrates a problem presented more generally in the previous paragraph.

It was once believed that the brain was independent of metabolic processes occurring elsewhere in the body. In recent studies, however, we have discovered that the production and release in brain neurons of the neurotransmitter serotonin (neurotransmitters are compounds that neurons use to transmit signals to other cells) depend directly on the food that the body processes.

Our first studies sought to determine whether the increase in serotonin observed in rats given a large injection of the amino acid tryptophan might also occur after rats ate meals that change tryptophan levels in the blood. We found that, immediately after the rats began to eat, parallel elevations occurred in blood tryptophan, brain tryptophan, and brain serotonin levels. These findings suggested that the production and release of serotonin in brain neurons were normally coupled with blood-tryptophan increases. In later studies we found that injecting insulin into a rat's bloodstream also caused parallel elevations in blood and brain tryptophan levels and in serotonin levels. We then decided to see whether the secretion of the animal's own insulin similarly affected serotonin production. We gave the rats a carbohydrate-containing meal that we knew would elicit insulin secretion. As we had hypothesized, the blood tryptophan level and the concentrations of tryptophan and of serotonin in the brain increased after the meal.

Surprisingly, however, when we added a large amount of protein to the meal, brain tryptophan and serotonin levels fell. Since protein contains tryptophan, why should it depress brain tryptophan levels? The answer lies in the mechanism that provides blood tryptophan to the brain cells. This same mechanism also provides the brain cells with other amino acids found in protein, such as tyrosine and leucine. The consumption of protein increases blood concentration of the other amino acids much more, proportionately, than it does that of tryptophan. The more protein is in a meal, the lower is the ratio of the resulting blood-tryptophan concentration to the concentration of competing amino acids, and the more slowly is tryptophan provided to the brain. Thus the more protein in a meal, the less serotonin subsequently produced and released.

**Which of the following titles best summarizes the contents of the passage?**

- A. Neurotransmitters: Their Crucial Function in Cellular Communication
- B. Diet and Survival: An Old Relationship Reexamined
- C. The Blood Supply and the Brain: A Reciprocal Dependence
- D. Amino Acids and Neurotransmitters: The Connection between Serotonin Levels and Tyrosine
- E. The Effects of Food Intake on the Production and Release of Serotonin: Some Recent Findings

Milankovitch proposed in the early twentieth century that the ice ages were caused by variations in the Earth's orbit around the Sun. For some time this theory was considered untestable, largely because there was no sufficiently precise chronology of the ice ages with which the orbital variations could be matched.

To establish such a chronology it is necessary to determine the relative amounts of land ice that existed at various times in the Earth's past. A recent discovery makes such a determination possible: relative land-ice volume for a given period can be deduced from the ratio of two oxygen isotopes, 16 and 18, found in ocean sediments. Almost all the oxygen in water is oxygen 16, but a few molecules out of every thousand incorporate the heavier isotope 18. When an ice age begins, the continental ice sheets grow, steadily reducing the amount of water evaporated from the ocean that will eventually return to it. Because heavier isotopes tend to be left behind when water evaporates from the ocean surfaces, the remaining ocean water becomes progressively enriched in oxygen 18. The degree of enrichment can be determined by analyzing ocean sediments of the period, because these sediments are composed of calcium carbonate shells of marine organisms, shells that were constructed with oxygen atoms drawn from the surrounding ocean. The higher the ratio of oxygen 18 to oxygen 16 in a sedimentary specimen, the more land ice there was when the sediment was laid down.

As an indicator of shifts in the Earth's climate, the isotope record has two advantages. First, it is a global record: there is remarkably little variation in isotope ratios in sedimentary specimens taken from different continental locations. Second, it is a more continuous record than that taken from rocks on land. Because of these advantages, sedimentary evidence can be dated with sufficient accuracy by radiometric methods to establish a precise chronology of the ice ages. The dated isotope record shows that the fluctuations in global ice volume over the past several hundred thousand years have a pattern: an ice age occurs roughly once every 100,000 years. These data have established a strong connection between variations in the Earth's orbit and the periodicity of the ice ages.

However, it is important to note that other factors, such as volcanic particulates or variations in the amount of sunlight received by the Earth, could potentially have affected the climate. The advantage of the Milankovitch theory is that it is testable; changes in the Earth's orbit can be calculated and dated by applying Newton's laws of gravity to progressively earlier configurations of the bodies in the solar system. Yet the lack of information about other possible factors affecting global climate does not make them unimportant.

**In the passage, the author is primarily interested in**

- A. suggesting an alternative to an outdated research method
- B. introducing a new research method that calls an accepted theory into question
- C. emphasizing the instability of data gathered from the application of a new scientific method
- D. presenting a theory and describing a new method to test that theory
- E. initiating a debate about a widely accepted theory

Jon Clark's study of the effect of the modernization of a telephone exchange on exchange maintenance work and workers is a solid contribution to a debate that encompasses two lively issues in the history and sociology of technology: technological determinism and social constructivism.

Clark makes the point that the characteristics of a technology have a decisive influence on job skills and work organization. Put more strongly, technology can be a primary determinant of social and managerial organization. Clark believes this possibility has been obscured by the recent sociological fashion, exemplified by Braverman's analysis, that emphasizes the way machinery reflects social choices. For Braverman, the shape of a technological system is subordinate to the manager's desire to wrest control of the labor process from the workers. Technological change is construed as the outcome of negotiations among interested parties who seek to incorporate their own interests into the design and configuration of the machinery. This position represents the new mainstream called social constructivism.

The constructivists gain acceptance by misrepresenting technological determinism: technological determinists are supposed to believe, for example, that machinery imposes appropriate forms of order on society. The alternative to constructivism, in other words, is to view technology as existing outside society, capable of directly influencing skills and work organization.

Clark refutes the extremes of the constructivists by both theoretical and empirical arguments. Theoretically he defines "technology" in terms of relationships between social and technical variables. Attempts to reduce the meaning of technology to cold, hard metal are bound to fail, for machinery is just scrap unless it is organized functionally and supported by appropriate systems of operation and maintenance. At the empirical level Clark shows how a change at the telephone exchange from maintenance-intensive electromechanical switches to semi-electronic switching systems altered work tasks, skills, training opportunities, administration, and organization of workers. Some changes Clark attributes to the particular way management and labor unions negotiated the introduction of the technology, whereas others are seen as arising from the capabilities and nature of the technology itself. Thus Clark helps answer the question: "When is social choice decisive and when are the concrete characteristics of technology more important?"

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

- A. advocate a more positive attitude toward technological change
- B. discuss the implications for employees of the modernization of a telephone exchange
- C. consider a successful challenge to the constructivist view of technological change
- D. challenge the position of advocates of technological determinism
- E. suggest that the social causes of technological change should be studied in real situations