

7.4 Practice Questions

Each of the reading comprehension questions is based on the content of a passage. After reading the passage answer all questions pertaining to it on the basis of what is stated or implied in the passage. For each question, select the best answer of the choices given.

Line Biologists have advanced two theories to explain why schooling of fish occurs in so many fish species. Because schooling is particularly widespread among species of small fish, both theories assume that

(5) schooling offers the advantage of some protection from predators.

Proponents of theory A dispute the assumption that a school of thousands of fish is highly visible. Experiments have shown that any fish can be seen,

(10) even in very clear water, only within a sphere of 200 meters in diameter. When fish are in a compact group, the spheres of visibility overlap. Thus the chance of a predator finding the school is only slightly greater than the chance of the predator finding a single fish

(15) swimming alone. Schooling is advantageous to the individual fish because a predator's chance of finding any particular fish swimming in the school is much smaller than its chance of finding at least one of the same group of fish if the fish were dispersed

(20) throughout an area.

However, critics of theory A point out that some fish form schools even in areas where predators are abundant and thus little possibility of escaping detection exists. They argue that the school continues

(25) to be of value to its members even after detection. They advocate theory B, the "confusion effect," which can be explained in two different ways.

Sometimes, proponents argue, predators simply cannot decide which fish to attack. This indecision

(30) supposedly results from a predator's preference for striking prey that is distinct from the rest of the school in appearance. In many schools the fish are almost identical in appearance, making it difficult for a predator to select one. The second explanation for

(35) the "confusion effect" has to do with the sensory confusion caused by a large number of prey moving around the predator. Even if the predator

makes the decision to attack a particular fish, the movement of other prey in the school can

(40) be distracting. The predator's difficulty can be compared to that of a tennis player trying to hit a tennis ball when two are approaching simultaneously.

Questions 405–408 refer to the passage.

405. According to the passage, theory B states that which of the following is a factor that enables a schooling fish to escape predators?

- (A) The tendency of fish to form compact groups
- (B) The movement of other fish within the school
- (C) The inability of predators to detect schools
- (D) The ability of fish to hide behind one another in a school
- (E) The great speed with which a school can disperse

406. According to the passage, both theory A and theory B have been developed to explain how

- (A) fish hide from predators by forming schools
- (B) forming schools functions to protect fish from predators
- (C) schooling among fish differs from other protective behaviors
- (D) small fish are able to make rapid decisions
- (E) small fish are able to survive in an environment densely populated by large predators

407. According to one explanation of the “confusion effect,” a fish that swims in a school will have greater advantages for survival if it

- (A) tends to be visible for no more than 200 meters
- (B) stays near either the front or the rear of a school
- (C) is part of a small school rather than a large school
- (D) is very similar in appearance to the other fish in the school
- (E) is medium-sized

408. The author is primarily concerned with

- (A) discussing different theories
- (B) analyzing different techniques
- (C) defending two hypotheses
- (D) refuting established beliefs
- (E) revealing new evidence

- Line Scientists long believed that two nerve clusters in the human hypothalamus, called suprachiasmatic nuclei (SCNs), were what controlled our circadian rhythms. Those rhythms are the biological cycles
- (5) that recur approximately every 24 hours in synchronization with the cycle of sunlight and darkness caused by Earth's rotation. Studies have demonstrated that in some animals, the SCNs control daily fluctuations in blood pressure, body
- (10) temperature, activity level, and alertness, as well as the nighttime release of the sleep-promoting agent melatonin. Furthermore, cells in the human retina dedicated to transmitting information about light levels to the SCNs have recently been discovered.
- (15) Four critical genes governing circadian cycles have been found to be active in every tissue, however, not just the SCNs, of flies, mice, and humans. In addition, when laboratory rats that usually ate at will were fed only once a day, peak
- (20) activity of a clock gene in their livers shifted by 12 hours, whereas the same clock gene in the SCNs remained synchronized with light cycles. While scientists do not dispute the role of the SCNs in controlling core functions such as the regulation of
- (25) body temperature and blood pressure, scientists now believe that circadian clocks in other organs and tissues may respond to external cues other than light—including temperature changes—that recur regularly every 24 hours.

Questions 409–411 refer to the passage.

409. The primary purpose of the passage is to
- (A) challenge recent findings that appear to contradict earlier findings
 - (B) present two sides of an ongoing scientific debate
 - (C) report answers to several questions that have long puzzled researchers
 - (D) discuss evidence that has caused a long-standing belief to be revised
 - (E) attempt to explain a commonly misunderstood biological phenomenon
410. The passage mentions each of the following as a function regulated by the SCNs in some animals EXCEPT
- (A) activity level
 - (B) blood pressure
 - (C) alertness
 - (D) vision
 - (E) temperature

411. The author of the passage would probably agree with which of the following statements about the SCNs?
- (A) The SCNs are found in other organs and tissues of the body besides the hypothalamus.
 - (B) The SCNs play a critical but not exclusive role in regulating circadian rhythms.
 - (C) The SCNs control clock genes in a number of tissues and organs throughout the body.
 - (D) The SCNs are a less significant factor in regulating blood pressure than scientists once believed.
 - (E) The SCNs are less strongly affected by changes in light levels than they are by other external cues.

- Line In their study of whether offering a guarantee of service quality will encourage customers to visit a particular restaurant, Tucci and Talaga have found that the effect of such guarantees is mixed. For
- (5) higher-priced restaurants, there is some evidence that offering a guarantee increases the likelihood of customer selection, probably reflecting the greater financial commitment involved in choosing an expensive restaurant. For lower-priced restaurants,
- (10) where one expects less assiduous service, Tucci and Talaga found that a guarantee could actually have a negative effect: a potential customer might think that a restaurant offering a guarantee is worried about its service. Moreover, since customers understand a restaurant's product and know what to anticipate in terms of service, they are empowered to question its quality. This is not generally true in the case of skilled activities such as electrical work, where, consequently, a guarantee might have greater customer appeal.
- (15) For restaurants generally, the main benefit of a service guarantee probably lies not so much in customer appeal as in managing and motivating staff. Staff members would know what service standards are expected of them and also know that the success
- (20) of the business relies on their adhering to those standards. Additionally, guarantees provide some basis for defining the skills needed for successful service in areas traditionally regarded as unskilled, such as waiting tables.
- (25)

Questions 412–414 refer to the passage.

412. The primary purpose of the passage is to
- (A) question the results of a study that examined the effect of service-quality guarantees in the restaurant industry
 - (B) discuss potential advantages and disadvantages of service-quality guarantees in the restaurant industry
 - (C) examine the conventional wisdom regarding the effect of service-quality guarantees in the restaurant industry
 - (D) argue that only certain restaurants would benefit from the implementation of service-quality guarantees
 - (E) consider the impact that service-quality guarantees can have on the service provided by a restaurant
413. It can be inferred that the author of the passage would agree with which of the following statements about the appeal of service guarantees to customers?
- (A) Such guarantees are likely to be somewhat more appealing to customers of restaurants than to customers of other businesses.
 - (B) Such guarantees are likely to be more appealing to customers who know what to anticipate in terms of service.
 - (C) Such guarantees are likely to have less appeal in situations where customers are knowledgeable about a business's product or service.
 - (D) In situations where a high level of financial commitment is involved, a service guarantee is not likely to be very appealing.
 - (E) In situations where customers expect a high level of customer service, a service guarantee is likely to make customers think that a business is worried about its service.

414. According to the passage, Tucci and Talaga found that service guarantees, when offered by lower-priced restaurants, can have which of the following effects?
- (A) Customers' developing unreasonably high expectations regarding service
 - (B) Customers' avoiding such restaurants because they fear that the service guarantee may not be fully honored
 - (C) Customers' interpreting the service guarantee as a sign that management is not confident about the quality of its service
 - (D) A restaurant's becoming concerned that its service will not be assiduous enough to satisfy customers
 - (E) A restaurant's becoming concerned that customers will be more emboldened to question the quality of the service they receive

- Line The argument for “monetizing”—or putting a monetary value on—ecosystem functions may be stated thus: Concern about the depletion of natural resources is widespread, but this concern, in the
- (5) absence of an economic argument for conservation, has not translated into significant conservational progress. Some critics blame this impasse on environmentalists, whom they believe fail to address the economic issues of environmental degradation.
- (10) Conservation can appear unprofitable when compared with the economic returns derived from converting natural assets (pristine coastlines, for example) into explicitly commercial ones (such as resort hotels). But according to David Pearce, that illusion stems
- (15) from the fact that “services” provided by ecological systems are not traded on the commodities market, and thus have no readily *quantifiable* value. To remedy this, says Pearce, one has to show that all ecosystems have economic value—indeed, that all
- (20) ecological services are economic services. Tourists visiting wildlife preserves, for example, create jobs and generate income for national economies; undisturbed forests and wetlands regulate water runoff and act as water-purifying systems, saving
- (25) millions of dollars worth of damage to property and to marine ecosystems. In Gretchen Daily’s view, monetization, while unpopular with many environmentalists, reflects the dominant role that economic considerations play in human behavior,
- (30) and the expression of economic value in a common currency helps inform environmental decision-making processes.

Questions 415–418 refer to the passage.

415. Information in the passage suggests that David Pearce would most readily endorse which of the following statements concerning monetization?
- (A) Monetization represents a strategy that is attractive to both environmentalists and their critics.
 - (B) Monetization is an untested strategy, but it is increasingly being embraced by environmentalists.
 - (C) Monetization should at present be restricted to ecological services and should only gradually be extended to such commercial endeavors as tourism and recreation.
 - (D) Monetization can serve as a means of representing persuasively the value of environmental conservation.
 - (E) Monetization should inform environmental decision-making processes only if it is accepted by environmentalist groups.
416. Which of the following most clearly represents an example of an “ecological service” as that term is used in line 20 ?
- (A) A resort hotel located in an area noted for its natural beauty
 - (B) A water-purifying plant that supplements natural processes with nontoxic chemicals
 - (C) A wildlife preserve that draws many international travelers
 - (D) A nonprofit firm that specializes in restoring previously damaged ecosystems
 - (E) A newsletter that keeps readers informed of ecological victories and setbacks

417. According to the passage, Daily sees monetization as an indication of which of the following?
- (A) The centrality of economic interests to people's actions
 - (B) The reluctance of the critics of environmentalism to acknowledge the importance of conservation
 - (C) The inability of financial interests and ecological interests to reach a common ideological ground
 - (D) The inevitability of environmental degradation
 - (E) The inevitability of the growth of ecological services in the future
418. Which of the following can be inferred from the passage concerning the environmentalists mentioned in line 8 ?
- (A) They are organized in opposition to the generation of income produced by the sale of ecological services.
 - (B) They are fewer in number but better organized and better connected to the media than their opponents.
 - (C) They have sometimes been charged with failing to use a particular strategy in their pursuit of conservational goals.
 - (D) They have been in the forefront of publicizing the extent of worldwide environmental degradation.
 - (E) They define environmental progress differently and more conservatively than do other organized groups of environmentalists.

- Line Much research has been devoted to investigating what motivates consumers to try new products. Previous consumer research suggests that both the price of a new product and the way it is advertised
- (5) affect consumers' perceptions of the product's performance risk (the possibility that the product will not function as consumers expect and/or will not provide the desired benefits). Some of this research has concluded that a relatively high price will reduce
- (10) a consumer's perception of the performance risk associated with purchasing a particular product, while other studies have reported that price has little or no effect on perceived performance risk. These conflicting findings may simply be due to the nature
- (15) of product advertisements: a recent study indicates that the presentation of an advertised message has a marked effect on the relationship between price and perceived performance risk.
- Researchers have identified consumers' perception
- (20) of the credibility of the source of an advertised message—i.e., the manufacturer—as another factor affecting perceived performance risk: one study found that the greater the source credibility, the lower the consumer's perception of the risk of purchasing
- (25) an advertised new product. However, past research suggests that the relationship between source credibility and perceived performance risk may be more complex: source credibility may interact with price in a subtle way to affect consumers' judgments
- (30) of the performance risk associated with an advertised product.

Questions 419–422 refer to the passage.

419. According to the passage, the studies referred to in line 12 reported which of the following about the effect of price on consumers' perception of the performance risk associated with a new product?
- (A) Although most consumers regard price as an important factor, their perception of the performance risk associated with a new product is ultimately determined by the manufacturer's reputation.
 - (B) Price interacts with the presentation of an advertised message to affect perceived performance risk.
 - (C) Price does not significantly affect consumers' perception of the performance risk associated with a new product.
 - (D) Consumers tend to regard price as more important than the manufacturer's credibility when they are buying from that manufacturer for the first time.
 - (E) Consumers are generally less concerned about a new product's performance risk when that product is relatively expensive.
420. The "past research" mentioned in line 25 suggests which of the following about perceived performance risk?
- (A) The more expensive a new product is, the more likely consumers may be to credit advertised claims about that product.
 - (B) The more familiar consumers are with a particular manufacturer, the more willing they may be to assume some risk in the purchase of a new product being advertised by that manufacturer.
 - (C) Consumers' perception of the performance risk associated with a new product being advertised may be influenced by an interplay between the product's price and the manufacturer's credibility.
 - (D) Consumers may be more likely to believe that a product will function as it is advertised to do when they have bought products from a particular manufacturer before.
 - (E) The price of a particular advertised product may have less impact than the manufacturer's credibility on consumers' assessment of the performance risk associated with that product.

421. The passage is primarily concerned with

- (A) challenging the implications of previous research into why consumers try new products
- (B) suggesting new marketing strategies for attracting consumers to new products
- (C) reconciling two different views about the effect of price on consumers' willingness to try new products
- (D) describing a new approach to researching why consumers try new products
- (E) discussing certain findings regarding why consumers try new products

422. Which of the following, if true, would most tend to weaken the conclusions drawn from "some of this research" (line 8)?

- (A) In a subsequent study, consumers who were asked to evaluate new products with relatively low prices had the same perception of the products' performance risk as did consumers who were shown the same products priced more expensively.
- (B) In a subsequent study, the quality of the advertising for the products that consumers perceived as having a lower performance risk was relatively high, while the quality of the advertising for the products that consumers perceived as having a higher performance risk was relatively poor.
- (C) In a subsequent study, the products that consumers perceived as having a lower performance risk were priced higher than the highest priced products in the previous research.
- (D) None of the consumers involved in this research had ever before bought products from the manufacturers involved in the research.
- (E) Researchers found that the higher the source credibility for a product, the more consumers were willing to pay for it.

Line Historians remain divided over the role of
banks in facilitating economic growth in the
United States in the late eighteenth and early
nineteenth centuries. Some scholars contend
(5) that banks played a minor role in the nation's
growing economy. Financial institutions, they
argue, appeared only after the economy had
begun to develop, and once organized, followed
conservative lending practices, providing aid to
(10) established commercial enterprises but
shunning those, such as manufacturing and
transportation projects, that were more
uncertain and capital-intensive (i.e., requiring
greater expenditures in the form of capital than in
(15) labor).

A growing number of historians argue, in
contrast, that banks were crucial in transforming
the early national economy. When state
legislatures began granting more bank charters
(20) in the 1790s and early 1800s, the supply of
credit rose accordingly. Unlike the earliest banks,
which had primarily provided short-term loans to
well-connected merchants, the banks of the early
nineteenth century issued credit widely. As Paul
(25) Gilje asserts, the expansion and democratization
of credit in the early nineteenth century became
the driving force of the American economy, as
banks began furnishing large amounts of capital
to transportation and industrial enterprises. The
(30) exception, such historians argue, was in the
South; here, the overwhelmingly agrarian nature
of the economy generated outright opposition
to banks, which were seen as monopolistic
institutions controlled by an elite group of
(35) planters.

Questions 423–427 refer to the passage.

423. The primary purpose of the passage is to

- (A) compare the economic role played by southern banks with the economic role played by banks in the rest of the United States during the late eighteenth and early nineteenth centuries
- (B) reevaluate a conventional interpretation of the role played by banks in the American economy during the late eighteenth and early nineteenth centuries
- (C) present different interpretations of the role played by banks in the American economy during the late eighteenth and early nineteenth centuries
- (D) analyze how the increasing number of banks in the late eighteenth and early nineteenth centuries affected the American economy
- (E) examine how scholarly opinion regarding the role played by banks in the American economy during the late eighteenth and early nineteenth centuries has changed over time

424. The passage suggests that the scholars mentioned in line 4 would argue that the reason banks tended not to fund manufacturing and transportation projects in the late eighteenth and early nineteenth centuries was that

- (A) these projects, being well established and well capitalized, did not need substantial long-term financing from banks
- (B) these projects entailed a level of risk that was too great for banks' conservative lending practices
- (C) banks preferred to invest in other, more speculative projects that offered the potential for higher returns
- (D) bank managers believed that these projects would be unlikely to contribute significantly to economic growth in the new country
- (E) bank managers believed funding these projects would result in credit being extended to too many borrowers

425. The passage suggests that Paul Gilje would be most likely to agree with which of the following claims about the lending practices of the “earliest banks” (see line 21)?
- (A) These lending practices were unlikely to generate substantial profits for banks.
 - (B) These lending practices only benefited a narrow sector of the economy.
 - (C) The restrictive nature of these lending practices generated significant opposition outside of the South.
 - (D) The restrictive nature of these lending practices forced state legislatures to begin granting more bank charters by the early nineteenth century.
 - (E) These lending practices were likely to be criticized by economic elites as being overly restrictive.
426. The passage suggests that the opposition to banks in the South in the early nineteenth century stemmed in part from the perception that banks
- (A) did not benefit more than a small minority of the people
 - (B) did not support the interests of elite planters
 - (C) were too closely tied to transportation and industrial interests
 - (D) were unwilling to issue the long-term loans required by agrarian interests
 - (E) were too willing to lend credit widely
427. Which of the following statements best describes the function of the last sentence of the passage?
- (A) It provides evidence tending to undermine the viewpoint of the scholars mentioned in line 5.
 - (B) It resolves a conflict over the role of banks summarized in the first paragraph.
 - (C) It clarifies some of the reasons state legislatures began granting more bank charters.
 - (D) It qualifies a claim made earlier in the passage about the impact of banks on the American economy in the early nineteenth century.
 - (E) It supports a claim made earlier in the passage about how the expansion of credit affected the economy.

- Line Io and Europa, the inner two of Jupiter's four largest moons, are about the size of Earth's moon and are composed mostly or entirely of rock and metal. Ganymede and Callisto are larger and roughly
- (5) half ice. Thus, these four moons are somewhat analogous to the planets of the solar system, in which the rock- and metal-rich inner planets are distinct from the much larger gas- and ice-rich outer planets. Jupiter's moons are, however, more "systematic":
- (10) many of their properties vary continuously with distance from Jupiter. For example, Io is ice-free, Europa has a surface shell of ice, and while Ganymede and Callisto are both ice-rich, outermost Callisto has more.
- (15) This compositional gradient has geological parallels. Io is extremely geologically active, Europa seems to be active on a more modest scale, and Ganymede has undergone bouts of activity in its geological past. Only Callisto reveals no geological
- (20) activity. In similar fashion, Callisto's surface is very heavily cratered from the impact of comets and asteroids; Ganymede, like Earth's moon, is heavily cratered in parts; Europa is very lightly cratered; and no craters have been detected on Io, even though
- (25) Jupiter's gravity attracts comets and asteroids passing near it, substantially increasing the bombardment rate of the inner moons compared to that of the outer ones. But because of Io's high degree of geological activity, its surface undergoes
- (30) more-or-less continuous volcanic resurfacing.

Questions 428–430 refer to the passage.

428. According to the passage, the difference in the amount of cratering on Callisto's and Io's respective surfaces can probably be explained by the difference between these two moons with respect to which of the following factors?
- (A) Size
 - (B) Ice content
 - (C) The rate of bombardment by comets and asteroids
 - (D) The influence of Jupiter's other moons
 - (E) The level of geological activity
429. Which of the following best describes the purpose of the second paragraph of the passage?
- (A) To provide further evidence of the systematic variation in the characteristics of Jupiter's four largest moons
 - (B) To present a comprehensive theory to explain the systematic variation in the characteristics of Jupiter's four largest moons
 - (C) To explain the significance of the systematic variation in the characteristics of Jupiter's four largest moons
 - (D) To introduce facts that contradict conventional assumptions about Jupiter's four largest moons
 - (E) To contrast the characteristics of Jupiter's four largest moons with the characteristics of the planets of the solar system

430. The author's reference to Jupiter's gravity in line 25 serves primarily to
- (A) indicate why the absence of craters on Io's surface is surprising
 - (B) explain the presence of craters on the surface of Jupiter's four largest moons
 - (C) provide an explanation for the lack of geological activity on Callisto
 - (D) contrast Jupiter's characteristics with the characteristics of its four largest moons
 - (E) illustrate the similarity between Jupiter's four largest moons and the planets of the solar system

Line In an effort to explain why business acquisitions often fail, scholars have begun to focus on the role of top executives of acquired companies. Acquired companies that retain their top executives tend to

(5) have more successful outcomes than those that do not. Furthermore, existing research suggests that retaining the highest-level top executives, such as the CEO (chief executive officer) and COO (chief operating officer), is related more positively to postacquisition

(10) success than retaining lower-ranked top executives. However, this explanation, while insightful, suffers from two limitations. First, the focus on positional rank does not recognize the variation in length of service that may exist in top executive posts across companies,

(15) nor does it address which particular top executives (with respect to length of service) should be retained to achieve a successful acquisition outcome. Second, the relationship between retained top executives and acquisition outcomes offered by existing research

(20) is subject to opposing theoretical explanations related to length of service. The resource-based view (RBV) suggests that keeping acquired company top executives with longer organizational tenure would lead to more successful outcomes, as those executives

(25) have idiosyncratic and nontransferable knowledge of the acquired company that would be valuable for the effective implementation of the acquisition. The opposing position, offered by the upper echelons perspective (UEP), suggests that retaining top

(30) executives having short organizational tenure would lead to more successful outcomes, as they would have the adaptability to manage most effectively during the uncertainty of the acquisition process.

Responding to these limitations, Bergh conducted

(35) a study of executive retention and acquisition outcome that focused on the organizational tenure of retained company top executives in 104 acquisitions, followed over 5 years. Bergh considered the acquisition successful if the acquired company was

(40) retained and unsuccessful if it was divested. Bergh's findings support the RBV position. Apparently, the benefits of long organizational tenure lead to more successful outcomes than the benefits of short organizational tenure. While longer tenured top

(45) executives may have trouble adapting to change, it appears that their perspectives and knowledge bases offer unique value after the acquisition. Although from the UEP position it seems sensible to retain less tenured executives and allow more tenured

(50) ones to leave, such a strategy appears to lower the probability of acquisition success.

Questions 431–434 refer to the passage.

431. According to the passage, the research mentioned in line 6 suggests which of the following about lower-ranked top executives and postacquisition success?

- (A) Given that these executives are unlikely to contribute to postacquisition success, little effort should be spent trying to retain them.
- (B) The shorter their length of service, the less likely it is that these executives will play a significant role in postacquisition success.
- (C) These executives are less important to postacquisition success than are more highly ranked top executives.
- (D) If they have long tenures, these executives may prove to be as important to postacquisition success as are more highly ranked top executives.
- (E) Postacquisition success is unlikely if these executives are retained.

432. The resource-based view, as described in the passage, is based on which of the following ideas?

- (A) The managerial skills of top executives become strongest after the first five years of their tenure.
- (B) Company-specific knowledge is an important factor in the success of an acquisition process.
- (C) The amount of nontransferable knowledge possessed by long-tenured top executives tends to be underestimated.
- (D) Effective implementation of an acquisition depends primarily on the ability of executives to adapt to change.
- (E) Short-tenured executives are likely to impede the implementation of a successful acquisition strategy.

433. The passage suggests that Bergh and a proponent of the upper echelons perspective would be most likely to disagree over which of the following?

- (A) Whether there is a positive correlation between short organizational tenure and managerial adaptability
- (B) Whether there is a positive correlation between long organizational tenure and the acquisition of idiosyncratic and nontransferable knowledge
- (C) Whether adaptability is a useful trait for an executive who is managing an acquisition process
- (D) Whether retaining less-tenured top executives of an acquired company is an optimal strategy for achieving postacquisition success
- (E) Whether retaining highest-level top executives of acquired companies is more important than retaining lower-ranked top executives

434. According to the passage, prior to Bergh's study, research on the role of top executives of acquired companies in business acquisition success was limited in which of the following ways?

- (A) It did not address how the organizational tenure of top executives affects postacquisition success.
- (B) It did not address why some companies have longer-tenured CEOs than others.
- (C) It did not consider strategies for retaining long-tenured top executives of acquired companies.
- (D) It failed to differentiate between the contribution of highest-level top executives to postacquisition success and that of lower-ranked top executives.
- (E) It underestimated the potential contribution that lower-level top executives can make to postacquisition success.

- Line When Jamaican-born social activist Marcus Garvey came to the United States in 1916, he arrived at precisely the right historical moment. What made the moment right was the return of
- (5) African American soldiers from the First World War in 1918, which created an ideal constituency for someone with Garvey's message of unity, pride, and improved conditions for African American communities.
- (10) Hoping to participate in the traditional American ethos of individual success, many African American people entered the armed forces with enthusiasm, only to find themselves segregated from white troops and subjected to numerous indignities. They
- (15) returned to a United States that was as segregated as it had been before the war. Considering similar experiences, anthropologist Anthony F. C. Wallace has argued that when a perceptible gap arises between a culture's expectations and the reality of
- (20) that culture, the resulting tension can inspire a revitalization movement: an organized, conscious effort to construct a culture that fulfills long-standing expectations.
- (25) Some scholars have argued that Garvey created the consciousness from which he built, in the 1920s, the largest revitalization movement in African American history. But such an argument only tends to obscure the consciousness of
- (30) identity, strength, and sense of history that already existed in the African American community. Garvey did not create this consciousness; rather, he gave this consciousness its political expression.

Questions 435–438 refer to the passage.

435. According to the passage, which of the following contributed to Marcus Garvey's success?
- (A) He introduced cultural and historical consciousness to the African American community.
 - (B) He believed enthusiastically in the traditional American success ethos.
 - (C) His audience had already formed a consciousness that made it receptive to his message.
 - (D) His message appealed to critics of African American support for United States military involvement in the First World War.
 - (E) He supported the movement to protest segregation that had emerged prior to his arrival in the United States.
436. The passage suggests that many African American people responded to their experiences in the armed forces in which of the following ways?
- (A) They maintained as civilians their enthusiastic allegiance to the armed forces.
 - (B) They questioned United States involvement in the First World War.
 - (C) They joined political organizations to protest the segregation of African American troops and the indignities they suffered in the military.
 - (D) They became aware of the gap between their expectations and the realities of American culture.
 - (E) They repudiated Garvey's message of pride and unity.

437. It can be inferred from the passage that the “scholars” mentioned in line 24 believe which of the following to be true?

- (A) Revitalization resulted from the political activism of returning African American soldiers following the First World War.
- (B) Marcus Garvey had to change a number of prevailing attitudes in order for his mass movement to find a foothold in the United States.
- (C) The prevailing sensibility of the African American community provided the foundation of Marcus Garvey’s political appeal.
- (D) Marcus Garvey hoped to revitalize consciousness of cultural and historical identity in the African American community.
- (E) The goal of the mass movement that Marcus Garvey helped bring into being was to build on the pride and unity among African Americans.

438. According to the passage, many African American people joined the armed forces during the First World War for which of the following reasons?

- (A) They wished to escape worsening economic conditions in African American communities.
- (B) They expected to fulfill ideals of personal attainment.
- (C) They sought to express their loyalty to the United States.
- (D) They hoped that joining the military would help advance the cause of desegregation.
- (E) They saw military service as an opportunity to fulfill Marcus Garvey’s political vision.

Line In the Sonoran Desert of northwestern Mexico and southern Arizona, the flowers of several species of columnar cacti—cardon, saguaro, and organ pipe—were once exclusively pollinated at night by

(5) nectar-feeding bats, as their close relatives in arid tropical regions of southern Mexico still are. In these tropical regions, diurnal (daytime) visitors to columnar cactus flowers are ineffective pollinators because, by sunrise, the flowers' stigmas become unreceptive

(10) or the flowers close. Yet the flowers of the Sonoran Desert cacti have evolved to remain open after sunrise, allowing pollination by such diurnal visitors as bees and birds. Why have these cacti expanded their range of pollinators by remaining open and receptive in daylight?

(15) This development at the northernmost range of columnar cacti may be due to a yearly variation in the abundance—and hence the reliability—of migratory nectar-feeding bats. Pollinators can be unreliable for several reasons. They can be dietary generalists

(20) whose fidelity to a particular species depends on the availability of alternative food sources. Or, they can be dietary specialists, but their abundance may vary widely from year to year, resulting in variable pollination of their preferred food species. Finally, they

(25) may be dietary specialists, but their abundance may be chronically low relative to the availability of flowers.

Recent data reveals that during spring in the Sonoran Desert, the nectar-feeding bats are specialists feeding on cardon, saguaro, and

(30) organpipe flowers. However, whereas cactus-flower abundance tends to be high during spring, bat population densities tend to be low except near maternity roosts. Moreover, in spring, diurnal cactus-pollinating birds are significantly more abundant in

(35) this region than are the nocturnal bats. Thus, with bats being unreliable cactus-flower pollinators, and daytime pollinators more abundant and therefore more reliable, selection favors the cactus flowers with traits that increase their range of pollinators. While data suggest

(40) that population densities of nectar-feeding bats are also low in tropical areas of southern Mexico, where bats are the exclusive pollinators of many species of columnar cacti, cactus-flower density and bat population density appear to be much more evenly

(45) balanced there: compared with the Sonoran Desert's cardon and saguaro, columnar cacti in southern Mexico produce far fewer flowers per night. Accordingly, despite their low population density, bats are able to pollinate nearly 100 percent of the available flowers.

Questions 439–441 refer to the passage.

439. The primary purpose of the passage is to

- (A) compare the adaptive responses of several species of columnar cacti in the Sonoran Desert with those in the arid tropical regions of southern Mexico
- (B) discuss some of the possible causes of the relatively low abundance of migratory nectar-feeding bats in the Sonoran Desert
- (C) provide a possible explanation for a particular evolutionary change in certain species of columnar cacti in the Sonoran Desert
- (D) present recent findings that challenge a particular theory as to why several species of columnar cacti in the Sonoran Desert have expanded their range of pollinators
- (E) compare the effectiveness of nocturnal and diurnal pollination for several different species of columnar cacti in the Sonoran Desert

440. According to the passage, which of the following types of nectar-feeding pollinators is likely to be an unreliable pollinator of a particular cactus flower?

- (A) A dietary specialist whose abundance is typically high in relation to that of the flower
- (B) A dietary specialist whose abundance is at times significantly lower than that of the flower
- (C) A dietary generalist for whom that flower's nectar is not a preferred food but is the most consistently available food
- (D) A dietary generalist for whom that flower's nectar is slightly preferred to other available foods
- (E) A dietary generalist that evolved from a species of dietary specialists

441. According to the passage, present-day columnar cacti in the Sonoran Desert differ from their close relatives in southern Mexico in that the Sonoran cacti

- (A) have flowers that remain open after sunset
- (B) are pollinated primarily by dietary specialists
- (C) can be pollinated by nectar-feeding bats
- (D) have stigmas that are unreceptive to pollination at night
- (E) are sometimes pollinated by diurnal pollinators

Line 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

(5) 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

(10) 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

(15) 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

(20) 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

(25) 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

(30) 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

(35) 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

(40) 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

(45) apparently improve the flow of venous blood returning to the heart.

Questions 442–449 refer to the passage.

442. 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.
443. 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
444. 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.

445. The author describes the behavior of the circulatory system of sea snakes when they are removed from the ocean (see lines 17–20) 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
446. 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 cannot effectively regulate their blood pressure when placed in seawater 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.
447. 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 midpoint 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
448. 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

449. 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

- Line 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
- (5) 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
- (10) 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.
- (15) 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
- (20) 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
- (25) 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.

Questions 450–455 refer to the passage.

450. 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
451. According to the passage, which of the following shapes the oral narratives of women storytellers?
- (A) The conventions for standard histories in the culture in which a woman storyteller lives
 - (B) The conventions of storytelling in the culture in which a woman storyteller lives
 - (C) A woman storyteller's experience with distinctive traditions of storytelling developed by the women in her family of origin
 - (D) The cultural expectations and experiences of those who listen to oral narratives
 - (E) A woman storyteller's familiarity with the stories that members of other groups in her culture tell to explain themselves

452. The author of the passage would be most likely to make which of the following recommendations to scholars of women's history?

- (A) They should take into account their own life experiences when interpreting the oral accounts of women's historical experiences.
- (B) They should assume that the observations made in women's oral narratives are believed by the intended audience of the story.
- (C) They should treat skeptically observations reported in oral narratives unless the observations can be confirmed in standard histories.
- (D) They should consider the cultural and historical context in which an oral narrative was created before arriving at an interpretation of such a narrative.
- (E) They should rely on information gathered from oral narratives only when equivalent information is not available in standard histories.

453. 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.

454. According to the passage, scholars of women's history should refrain from doing which of the following?

- (A) Relying on traditional historical sources when women's oral narratives are unavailable
- (B) Focusing on the influence of political rhetoric on women's perceptions to the exclusion of other equally important factors
- (C) Attempting to discover the cultural and historical factors that influence the stories women tell
- (D) Assuming that the conventions of women's written autobiographies are similar to the conventions of women's oral narratives
- (E) Accepting women's oral narratives less critically than they accept women's written histories

455. According to the passage, each of the following is a difference between women's oral narratives and most standard histories EXCEPT:

- (A) Women's oral histories validate the significance of women's achievements.
- (B) Women's oral histories depict experience from the point of view of women.
- (C) Women's oral histories acknowledge the influence of well-known women.
- (D) Women's oral histories present today's women with a sense of their historical relationship to women of the past.
- (E) Women's oral histories are crucial to the collective identity of today's women.

- Line Manufacturers have to do more than build large manufacturing plants to realize economies of scale. It is true that as the capacity of a manufacturing operation rises, costs per unit of output fall as plant
- (5) size approaches “minimum efficient scale,” where the cost per unit of output reaches a minimum, determined roughly by the state of existing technology and size of the potential market. However, minimum efficient scale cannot be fully realized unless a steady
- (10) “throughput” (the flow of materials through a plant) is attained. The throughput needed to maintain the optimal scale of production requires careful coordination not only of the flow of goods through the production process, but also of the flow of input from
- (15) suppliers and the flow of output to wholesalers and final consumers. If throughput falls below a critical point, unit costs rise sharply and profits disappear. A manufacturer’s fixed costs and “sunk costs” (original capital investment in the physical plant) do not
- (20) decrease when production declines due to inadequate supplies of raw materials, problems on the factory floor, or inefficient sales networks. Consequently, potential economies of scale are based on the physical and engineering characteristics of the
- (25) production facilities—that is, on tangible capital—but realized economies of scale are operational and organizational, and depend on knowledge, skills, experience, and teamwork—that is, on organized human capabilities, or intangible capital.
- (30) The importance of investing in intangible capital becomes obvious when one looks at what happens in new capital-intensive manufacturing industries. Such industries are quickly dominated, not by the first firms to acquire technologically sophisticated plants of
- (35) theoretically optimal size, but rather by the first to exploit the full potential of such plants. Once some firms achieve this, a market becomes extremely hard to enter. Challengers must construct comparable plants and do so after the first movers have already
- (40) worked out problems with suppliers or with new production processes. Challengers must create distribution networks and marketing systems in markets where first movers have all the contacts and know-how. And challengers must recruit management
- (45) teams to compete with those that have already mastered these functional and strategic activities.

Questions 456–460 refer to the passage.

456. The passage suggests that in order for a manufacturer in a capital-intensive industry to have a decisive advantage over competitors making similar products, the manufacturer must
- (A) be the first in the industry to build production facilities of theoretically optimal size
 - (B) make every effort to keep fixed and sunk costs as low as possible
 - (C) be one of the first to operate its manufacturing plants at minimum efficient scale
 - (D) produce goods of higher quality than those produced by direct competitors
 - (E) stockpile raw materials at production sites in order to ensure a steady flow of such materials
457. The passage suggests that which of the following is true of a manufacturer’s fixed and sunk costs?
- (A) The extent to which they are determined by market conditions for the goods being manufactured is frequently underestimated.
 - (B) If they are kept as low as possible, the manufacturer is very likely to realize significant profits.
 - (C) They are the primary factor that determines whether a manufacturer will realize economies of scale.
 - (D) They should be on a par with the fixed and sunk costs of the manufacturer’s competitors.
 - (E) They are not affected by fluctuations in a manufacturing plant’s throughput.
458. In the context of the passage as a whole, the second paragraph serves primarily to
- (A) provide an example to support the argument presented in the first paragraph
 - (B) evaluate various strategies discussed in the first paragraph
 - (C) introduce evidence that undermines the argument presented in the first paragraph
 - (D) anticipate possible objections to the argument presented in the first paragraph
 - (E) demonstrate the potential dangers of a commonly used strategy

459. The passage LEAST supports the inference that a manufacturer's throughput could be adversely affected by
- (A) a mistake in judgment regarding the selection of a wholesaler
 - (B) a breakdown in the factory's machinery
 - (C) a labor dispute on the factory floor
 - (D) an increase in the cost per unit of output
 - (E) a drop in the efficiency of the sales network
460. The primary purpose of the passage is to
- (A) point out the importance of intangible capital for realizing economies of scale in manufacturing
 - (B) show that manufacturers frequently gain a competitive advantage from investment in large manufacturing facilities
 - (C) argue that large manufacturing facilities often fail because of inadequate investment in both tangible and intangible capital
 - (D) suggest that most new industries are likely to be dominated by firms that build large manufacturing plants early
 - (E) explain why large manufacturing plants usually do not help manufacturers achieve economies of scale

Line 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
 (5) 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
 (10) 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
 (15) 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
 (20) 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
 (25) 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
 (30) 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
 (35) 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
 (40) 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
 (45) 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
 (50) and eleven years. Nuclear polyhedrosis viral infection is
 one factor these disparate species share.

Questions 461–466 refer to the passage.

461. 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
462. 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

463. 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.
464. 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
465. According to the passage, nuclear polyhedrosis viruses can remain virulent in the environment only when
- (A) the polyhedrin protein crystals dissolve
 - (B) caterpillar populations 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
466. 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

- Line Resin is a plant secretion that hardens when exposed to air; fossilized resin is called amber. Although Pliny in the first century recognized that amber was produced from “marrow discharged by
- (5) trees,” amber has been widely misunderstood to be a semiprecious gem and has even been described in mineralogy textbooks. Confusion also persists surrounding the term “resin,” which was defined before rigorous chemical analyses were available.
- (10) Resin is often confused with gum, a substance produced in plants in response to bacterial infections, and with sap, an aqueous solution transported through certain plant tissues. Resin differs from both gum and sap in that scientists have not determined a
- (15) physiological function for resin.
 In the 1950s, entomologists posited that resin may function to repel or attract insects. Fraenkel conjectured that plants initially produced resin in nonspecific chemical responses to insect attack
- (20) and that, over time, plants evolved that produced resin with specific repellent effects. But some insect species, he noted, might overcome the repellent effects, actually becoming attracted to the resin. This might induce the insects to feed on those
- (25) plants or aid them in securing a breeding site. Later researchers suggested that resin mediates the complex interdependence, or “coevolution,” of plants and insects over time. Such ideas led to the development of the specialized discipline of chemical
- (30) ecology, which is concerned with the role of plant chemicals in interactions with other organisms and with the evolution and ecology of plant antiherbivore chemistry (plants’ chemical defenses against attack by herbivores such as insects).

Questions 467–470 refer to the passage.

467. According to the passage, which of the following is true of plant antiherbivore chemistry?
- (A) Changes in a plant’s antiherbivore chemistry may affect insect feeding behavior.
 - (B) A plant’s repellent effects often involve interactions between gum and resin.
 - (C) A plant’s antiherbivore responses assist in combating bacterial infections.
 - (D) Plant antiherbivore chemistry plays only a minor role in the coevolution of plants and insects.
 - (E) Researchers first studied repellent effects in plants beginning in the 1950s.
468. Of the following topics, which would be most likely to be studied within the discipline of chemical ecology as it is described in the passage?
- (A) Seeds that become attached to certain insects, which in turn carry away the seeds and aid in the reproductive cycle of the plant species in question
 - (B) An insect species that feeds on weeds detrimental to crop health and yield, and how these insects might aid in agricultural production
 - (C) The effects of deforestation on the life cycles of subtropical carnivorous plants and the insect species on which the plants feed
 - (D) The growth patterns of a particular species of plant that has proved remarkably resistant to herbicides
 - (E) Insects that develop a tolerance for feeding on a plant that had previously been toxic to them, and the resultant changes within that plant species

469. The author refers to “bacterial infections” (see line 11) most likely in order to

- (A) describe the physiological function that gum performs in plants
- (B) demonstrate that sap is not the only substance that is transported through a plant’s tissues
- (C) explain how modern chemical analysis has been used to clarify the function of resin
- (D) show that gum cannot serve as an effective defense against herbivores
- (E) give an example of how confusion has arisen with regard to the nature of resin

470. The author of the passage refers to Pliny most probably in order to

- (A) give an example of how the nature of amber has been misunderstood in the past
- (B) show that confusion about amber has long been more pervasive than confusion about resin
- (C) make note of the first known reference to amber as a semiprecious gem
- (D) point out an exception to a generalization about the history of people’s understanding of amber
- (E) demonstrate that Pliny believed amber to be a mineral

- Line During the 1980s, many economic historians studying Latin America focused on the impact of the Great Depression of the 1930s. Most of these historians argued that although the Depression
- (5) began earlier in Latin America than in the United States, it was less severe in Latin America and did not significantly impede industrial growth there. The historians' argument was grounded in national government records concerning tax revenues and
- (10) exports and in government-sponsored industrial censuses, from which historians have drawn conclusions about total manufacturing output and profit levels across Latin America. However, economic statistics published by Latin American
- (15) governments in the early twentieth century are neither reliable nor consistent; this is especially true of manufacturing data, which were gathered from factory owners for taxation purposes and which therefore may well be distorted. Moreover,
- (20) one cannot assume a direct correlation between the output level and the profit level of a given industry as these variables often move in opposite directions. Finally, national and regional economies are composed of individual firms and industries,
- (25) and relying on general, sweeping economic indicators may mask substantial variations among these different enterprises. For example, recent analyses of previously unexamined data on textile manufacturing in Brazil and Mexico suggest that the
- (30) Great Depression had a more severe impact on this Latin American industry than scholars had recognized.

Questions 471–473 refer to the passage.

471. The primary purpose of the passage is to
- (A) compare the impact of the Great Depression on Latin America with its impact on the United States
 - (B) criticize a school of economic historians for failing to analyze the Great Depression in Latin America within a global context
 - (C) illustrate the risks inherent in comparing different types of economic enterprises to explain economic phenomena
 - (D) call into question certain scholars' views concerning the severity of the Great Depression in Latin America
 - (E) demonstrate that the Great Depression had a more severe impact on industry in Latin America than in certain other regions
472. Which of the following conclusions about the Great Depression is best supported by the passage?
- (A) It did not impede Latin American industrial growth as much as historians had previously thought.
 - (B) It had a more severe impact on the Brazilian and the Mexican textile industries than it had on Latin America as a region.
 - (C) It affected the Latin American textile industry more severely than it did any other industry in Latin America.
 - (D) The overall impact on Latin American industrial growth should be reevaluated by economic historians.
 - (E) Its impact on Latin America should not be compared with its impact on the United States.

473. Which of the following, if true, would most strengthen the author's assertion regarding economic indicators in lines 25–27 ?

- (A) During an economic depression, European textile manufacturers' profits rise while their industrial output remains steady.
- (B) During a national economic recession, United States microchips manufacturers' profits rise sharply while United States steel manufacturers' profits plunge.
- (C) During the years following a severe economic depression, textile manufacturers' output levels and profit levels increase in Brazil and Mexico but not in the rest of Latin America.
- (D) Although Japanese industry as a whole recovers after an economic recession, it does not regain its previously high levels of production.
- (E) While European industrial output increases in the years following an economic depression, total output remains below that of Japan or the United States.

- Line Among the myths taken as fact by the
environmental managers of most corporations is
the belief that environmental regulations affect all
competitors in a given industry uniformly. In reality,
- (5) regulatory costs—and therefore compliance—
fall unevenly, economically disadvantaging some
companies and benefiting others. For example, a
plant situated near a number of larger
noncompliant competitors is less likely to attract
- (10) the attention of local regulators than is an isolated
plant, and less attention means lower costs.
Additionally, large plants can spread compliance
costs such as waste treatment across a larger
revenue base; on the other hand, some smaller
- (15) plants may not even be subject to certain
provisions such as permit or reporting
requirements by virtue of their size. Finally, older
production technologies often continue to generate
toxic wastes that were not regulated when the
- (20) technology was first adopted. New regulations
have imposed extensive compliance costs on
companies still using older industrial coal-fired
burners that generate high sulfur dioxide and
nitrogen oxide outputs, for example, whereas new
- (25) facilities generally avoid processes that would
create such waste products. By realizing that they
have discretion and that not all industries are
affected equally by environmental regulation,
environmental managers can help their companies
- (30) to achieve a competitive edge by anticipating
regulatory pressure and exploring all possibilities for
addressing how changing regulations will affect their
companies specifically.

Questions 474–477 refer to the passage.

474. It can be inferred from the passage that a large plant might have to spend more than a similar but smaller plant on environmental compliance because the larger plant is
- (A) more likely to attract attention from local regulators
 - (B) less likely to be exempt from permit and reporting requirements
 - (C) less likely to have regulatory costs passed on to it by companies that supply its raw materials
 - (D) more likely to employ older production technologies
 - (E) more likely to generate wastes that are more environmentally damaging than those generated by smaller plants
475. According to the passage, which of the following statements about sulfur dioxide and nitrogen oxide outputs is true?
- (A) Older production technologies cannot be adapted so as to reduce production of these outputs as waste products.
 - (B) Under the most recent environmental regulations, industrial plants are no longer permitted to produce these outputs.
 - (C) Although these outputs are environmentally hazardous, some plants still generate them as waste products despite the high compliance costs they impose.
 - (D) Many older plants have developed innovative technological processes that reduce the amounts of these outputs generated as waste products.
 - (E) Since the production processes that generate these outputs are less costly than alternative processes, these less expensive processes are sometimes adopted despite their acknowledged environmental hazards.

476. Which of the following best describes the relationship of the statement about large plants (lines 12–17) to the passage as a whole?
- (A) It presents a hypothesis that is disproved later in the passage.
 - (B) It highlights an opposition between two ideas mentioned in the passage.
 - (C) It provides examples to support a claim made earlier in the passage.
 - (D) It exemplifies a misconception mentioned earlier in the passage.
 - (E) It draws an analogy between two situations described in the passage.
477. The primary purpose of the passage is to
- (A) address a widespread environmental management problem and suggest possible solutions
 - (B) illustrate varying levels of compliance with environmental regulation among different corporations
 - (C) describe the various alternatives to traditional methods of environmental management
 - (D) advocate increased corporate compliance with environmental regulation
 - (E) correct a common misconception about the impact of environmental regulations

Line 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

(5) 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

(10) 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.

(15) 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

(20) 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

(25) 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

(30) 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

(35) 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

(40) 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

(45) 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

(50) 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

(55) 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.

Questions 478–483 refer to the passage.

478. 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

479. The author of the passage would be most likely to agree with which of the following statements about the Milankovitch theory?

- (A) It is the only possible explanation for the ice ages.
- (B) It is too limited to provide a plausible explanation for the ice ages, despite recent research findings.
- (C) It cannot be tested and confirmed until further research on volcanic activity is done.
- (D) It is one plausible explanation, though not the only one, for the ice ages.
- (E) It is not a plausible explanation for the ice ages, although it has opened up promising possibilities for future research.

480. It can be inferred from the passage that the isotope record taken from ocean sediments would be less useful to researchers if which of the following were true?
- (A) It indicated that lighter isotopes of oxygen predominated at certain times.
 - (B) It had far more gaps in its sequence than the record taken from rocks on land.
 - (C) It indicated that climate shifts did not occur every 100,000 years.
 - (D) It indicated that the ratios of oxygen 16 and oxygen 18 in ocean water were not consistent with those found in fresh water.
 - (E) It stretched back for only a million years.
481. According to the passage, which of the following is true of the ratios of oxygen isotopes in ocean sediments?
- (A) They indicate that sediments found during an ice age contain more calcium carbonate than sediments formed at other times.
 - (B) They are less reliable than the evidence from rocks on land in determining the volume of land ice.
 - (C) They can be used to deduce the relative volume of land ice that was present when the sediment was laid down.
 - (D) They are more unpredictable during an ice age than in other climatic conditions.
 - (E) They can be used to determine atmospheric conditions at various times in the past.
482. It can be inferred from the passage that precipitation formed from evaporated ocean water has
- (A) the same isotopic ratio as ocean water
 - (B) less oxygen 18 than does ocean water
 - (C) less oxygen 18 than has the ice contained in continental ice sheets
 - (D) a different isotopic composition than has precipitation formed from water on land
 - (E) more oxygen 16 than has precipitation formed from fresh water
483. It can be inferred from the passage that calcium carbonate shells
- (A) are not as susceptible to deterioration as rocks
 - (B) are less common in sediments formed during an ice age
 - (C) are found only in areas that were once covered by land ice
 - (D) contain radioactive material that can be used to determine a sediment's isotopic composition
 - (E) reflect the isotopic composition of the water at the time the shells were formed

Line 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

(5) place her story in the context of recent historiography on women. Lebsack, 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

(10) 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 Lebsack's deals with

(15) 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

(20) 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

(25) 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

(30) 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.

Questions 484–489 refer to the passage.

484. 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
485. The author of the passage mentions the supervision of schools primarily in order to
- (A) remind readers of the role education played in the cultural changes of the nineteenth century in the United States
 - (B) suggest an area in which nineteenth-century American women were relatively free to exercise power
 - (C) provide an example of an occupation for which accurate data about women's participation are difficult to obtain
 - (D) speculate about which occupations were considered suitable for United States women of the nineteenth century
 - (E) illustrate how the answers to questions about women's status depend on particular contexts

486. With which of the following characterizations of Lebsock's contribution to the controversy concerning women's status in the nineteenth-century United States would the author of the passage be most likely to agree?
- (A) Lebsock has studied women from a formerly neglected region and time period.
 - (B) Lebsock has demonstrated the importance of frame of reference in answering questions about women's status.
 - (C) Lebsock has addressed the controversy by using women's current status as a frame of reference.
 - (D) Lebsock has analyzed statistics about occupations and property that were previously ignored.
 - (E) Lebsock has applied recent historiographical methods to the biography of a nineteenth-century woman.
487. According to the passage, Lebsock's work differs from Buel and Buel's work in that Lebsock's work
- (A) uses a large number of primary sources
 - (B) ignores issues of women's legal status
 - (C) refuses to take a position on women's status in the eighteenth century
 - (D) addresses larger historiographical issues
 - (E) fails to provide sufficient material to support its claims
488. The passage suggests that Lebsock believes that compared to nineteenth-century American women, eighteenth-century American women were
- (A) in many respects less powerful in relation to men
 - (B) more likely to own real estate
 - (C) generally more economically independent
 - (D) more independent in conducting their private lives
 - (E) less likely to work as school superintendents
489. The passage suggests that Buel and Buel's biography of Mary Fish provides evidence for which of the following views of women's history?
- (A) Women have lost power in relation to men since the colonial era.
 - (B) Women of the colonial era were not as likely to be concerned with their status as were women in the nineteenth century.
 - (C) The colonial era was not as favorable for women as some historians have believed.
 - (D) Women had more economic autonomy in the colonial era than in the nineteenth century.
 - (E) Women's occupations were generally more respected in the colonial era than in the nineteenth century.

- Line Acting on the recommendation of a British government committee investigating the high incidence in white lead factories of illness among employees, most of whom were women, the Home
- (5) Secretary proposed in 1895 that Parliament enact legislation that would prohibit women from holding most jobs in white lead factories. Although the Women's Industrial Defence Committee (WIDC), formed in 1892 in response to earlier legislative
- (10) attempts to restrict women's labor, did not discount the white lead trade's potential health dangers, it opposed the proposal, viewing it as yet another instance of limiting women's work opportunities.
- Also opposing the proposal was the Society for
- (15) Promoting the Employment of Women (SPEW), which attempted to challenge it by investigating the causes of illness in white lead factories. SPEW contended, and WIDC concurred, that controllable conditions in such factories were responsible for
- (20) the development of lead poisoning. SPEW provided convincing evidence that lead poisoning could be avoided if workers were careful and clean and if already extant workplace safety regulations were stringently enforced. However, the Women's Trade
- (25) Union League (WTUL), which had ceased in the late 1880s to oppose restrictions on women's labor, supported the eventually enacted proposal, in part because safety regulations were generally not being enforced in white lead factories, where there were
- (30) no unions (and little prospect of any) to pressure employers to comply with safety regulations.

Questions 490–492 refer to the passage.

490. The passage suggests that WIDC differed from WTUL in which of the following ways?
- (A) WIDC believed that the existing safety regulations were adequate to protect women's health, whereas WTUL believed that such regulations needed to be strengthened.
- (B) WIDC believed that unions could not succeed in pressuring employers to comply with such regulations, whereas WTUL believed that unions could succeed in doing so.
- (C) WIDC believed that lead poisoning in white lead factories could be avoided by controlling conditions there, whereas WTUL believed that lead poisoning in such factories could not be avoided no matter how stringently safety regulations were enforced.
- (D) At the time that the legislation concerning white lead factories was proposed, WIDC was primarily concerned with addressing health conditions in white lead factories, whereas WTUL was concerned with improving working conditions in all types of factories.
- (E) At the time that WIDC was opposing legislative attempts to restrict women's labor, WTUL had already ceased to do so.

491. Which of the following, if true, would most clearly support the contention attributed to SPEW in lines 17–20 ?

- (A) Those white lead factories that most strongly enforced regulations concerning worker safety and hygiene had the lowest incidences of lead poisoning among employees.
- (B) The incidence of lead poisoning was much higher among women who worked in white lead factories than among women who worked in other types of factories.
- (C) There were many household sources of lead that could have contributed to the incidence of lead poisoning among women who also worked outside the home in the late nineteenth century.
- (D) White lead factories were more stringent than were certain other types of factories in their enforcement of workplace safety regulations.
- (E) Even brief exposure to the conditions typically found in white lead factories could cause lead poisoning among factory workers.

492. The passage is primarily concerned with

- (A) presenting various groups' views of the motives of those proposing certain legislation
- (B) contrasting the reasoning of various groups concerning their positions on certain proposed legislation
- (C) tracing the process whereby certain proposed legislation was eventually enacted
- (D) assessing the success of tactics adopted by various groups with respect to certain proposed legislation
- (E) evaluating the arguments of various groups concerning certain proposed legislation

Line It is an odd but indisputable fact that the
 seventeenth-century English women who are
 generally regarded as among the forerunners of
 modern feminism are almost all identified with the
 (5) Royalist side in the conflict between Royalists and
 Parliamentarians known as the English Civil Wars.
 Since Royalist ideology is often associated with the
 radical patriarchalism of seventeenth-century
 political theorist Robert Filmer—a patriarchalism
 (10) that equates family and kingdom and asserts the
 divinely ordained absolute power of the king and,
 by analogy, of the male head of the household—
 historians have been understandably puzzled by the
 fact that Royalist women wrote the earliest
 (15) extended criticisms of the absolute subordination
 of women in marriage and the earliest systematic
 assertions of women's rational and moral equality
 with men. Some historians have questioned the
 facile equation of Royalist ideology with Filmerian
 (20) patriarchalism; and indeed, there may have been
 no consistent differences between Royalists and
 Parliamentarians on issues of family organization
 and women's political rights, but in that case one
 would expect early feminists to be equally divided
 (25) between the two sides.

Catherine Gallagher argues that Royalism
 engendered feminism because the ideology of
 absolute monarchy provided a transition to an
 ideology of the absolute self. She cites the example
 (30) of the notoriously eccentric author Margaret
 Cavendish (1626–1673), duchess of Newcastle.
 Cavendish claimed to be as ambitious as any
 woman could be, but knowing that as a woman she
 was excluded from the pursuit of power in the real
 (35) world, she resolved to be mistress of her own
 world, the “immaterial world” that any person can
 create within her own mind—and, as a writer, on
 paper. In proclaiming what she called her
 “singularity,” Cavendish insisted that she was a
 (40) self-sufficient being within her mental empire, the
 center of her own subjective universe rather than a
 satellite orbiting a dominant male planet. In
 justifying this absolute singularity, Cavendish
 repeatedly invoked the model of the absolute
 (45) monarch, a figure that became a metaphor for the
 self-enclosed, autonomous nature of the individual
 person. Cavendish's successors among early
 feminists retained her notion of woman's sovereign
 self, but they also sought to break free from the
 (50) complete political and social isolation that her
 absolute singularity entailed.

Questions 493–498 refer to the passage.

493. The author of the passage refers to Robert Filmer (see line 9) primarily in order to
- (A) show that Royalist ideology was somewhat more radical than most historians appear to realize
 - (B) qualify the claim that patriarchalism formed the basis of Royalist ideology
 - (C) question the view that most early feminists were associated with the Royalist faction
 - (D) highlight an apparent tension between Royalist ideology and the ideas of early feminists
 - (E) argue that Royalists held conflicting opinions on issues of family organization and women's political rights

494. The passage suggests which of the following about the seventeenth-century English women mentioned in line 2 ?
- (A) Their status as forerunners of modern feminism is not entirely justified.
 - (B) They did not openly challenge the radical patriarchalism of Royalist Filmerian ideology.
 - (C) Cavendish was the first among these women to criticize women's subordination in marriage and assert women's equality with men.
 - (D) Their views on family organization and women's political rights were diametrically opposed to those of both Royalist and Parliamentary ideology.
 - (E) Historians would be less puzzled if more of them were identified with the Parliamentary side in the English Civil Wars.
495. The passage suggests that Margaret Cavendish's decision to become an author was motivated, at least in part, by a desire to
- (A) justify her support for the Royalist cause
 - (B) encourage her readers to work toward eradicating Filmerian patriarchalism
 - (C) persuade other women to break free from their political and social isolation
 - (D) analyze the causes for women's exclusion from the pursuit of power
 - (E) create a world over which she could exercise total control
496. The phrase "a satellite orbiting a dominant male planet" (lines 41–42) refers most directly to
- (A) Cavendish's concept that each woman is a sovereign self
 - (B) the complete political and social isolation of absolute singularity
 - (C) the immaterial world that a writer can create on paper
 - (D) the absolute subordination of women in a patriarchal society
 - (E) the metaphorical figure of the absolute monarch
497. The primary purpose of the passage is to
- (A) trace the historical roots of a modern sociopolitical movement
 - (B) present one scholar's explanation for a puzzling historical phenomenon
 - (C) contrast two interpretations of the ideological origins of a political conflict
 - (D) establish a link between the ideology of an influential political theorist and that of a notoriously eccentric writer
 - (E) call attention to some points of agreement between opposing sides in an ideological debate
498. Which of the following, if true, would most clearly undermine Gallagher's explanation of the link between Royalism and feminism?
- (A) Because of their privileged backgrounds, Royalist women were generally better educated than were their Parliamentary counterparts.
 - (B) Filmer himself had read some of Cavendish's early writings and was highly critical of her ideas.
 - (C) Cavendish's views were highly individual and were not shared by the other Royalist women who wrote early feminist works.
 - (D) The Royalist and Parliamentary ideologies were largely in agreement on issues of family organization and women's political rights.
 - (E) The Royalist side included a sizable minority faction that was opposed to the more radical tendencies of Filmerian patriarchalism.

- Line 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
- (5) 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
- (10) 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.
- (15) 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
- (20) 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
- (25) 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
- (30) 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.

Questions 499–503 refer to the passage.

499. 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
500. Which of the following can be inferred from the passage about a study of the category of patients referred to in lines 20–22 ?
- (A) Its findings might have limited applicability.
 - (B) It would be prohibitively expensive in its attempt to create ideal conditions.
 - (C) It would be the best way to sample the total population of potential patients.
 - (D) It would allow researchers to limit information collection without increasing the risk that important variables could be overlooked.
 - (E) Its findings would be more accurate if it concerned treatments for a progressive disease than if it concerned treatments for a nonprogressive disease.

501. It can be inferred from the passage that a study limited to patients like those mentioned in lines 20–22 would have which of the following advantages over the kind of study proposed by Frazier and Mosteller?
- (A) It would yield more data and its findings would be more accurate.
 - (B) It would cost less in the long term, though it would be more expensive in its initial stages.
 - (C) It would limit the number of variables researchers would need to consider when evaluating the treatment under study.
 - (D) It would help researchers to identify subgroups of patients with secondary conditions that might also be treatable.
 - (E) It would enable researchers to assess the value of an experimental treatment for the average patient.
502. The author mentions patients' ages (line 32) primarily in order to
- (A) identify the most critical variable differentiating subgroups of patients
 - (B) cast doubt on the advisability of implementing Frazier and Mosteller's proposals about medical research
 - (C) indicate why progressive diseases may require different treatments at different stages
 - (D) illustrate a point about the value of enrolling a wide range of patients in clinical trials
 - (E) substantiate an argument about the problems inherent in enrolling large numbers of patients in clinical trials
503. According to the passage, which of the following describes a result of the way in which researchers generally conduct clinical trials?
- (A) They expend resources on the storage of information likely to be irrelevant to the study they are conducting.
 - (B) They sometimes compromise the accuracy of their findings by collecting and analyzing more information than is strictly required for their trials.
 - (C) They avoid the risk of overlooking variables that might affect their findings, even though doing so raises their research costs.
 - (D) Because they attempt to analyze too much information, they overlook facts that could emerge as relevant to their studies.
 - (E) In order to approximate the conditions typical of medical treatment, they base their methods of information collection on those used by hospitals.

- Line There are recent reports of apparently drastic declines in amphibian populations and of extinctions of a number of the world's endangered amphibian species. These declines, if real, may be signs of a
- (5) general trend toward extinction, and many environmentalists have claimed that immediate environmental action is necessary to remedy this "amphibian crisis," which, in their view, is an indicator of general and catastrophic environmental
- (10) degradation due to human activity.
- To evaluate these claims, it is useful to make a preliminary distinction that is far too often ignored. A declining population should not be confused with an endangered one. An endangered population is
- (15) always rare, almost always small, and, by definition, under constant threat of extinction even without a proximate cause in human activities. Its disappearance, however unfortunate, should come as no great surprise. Moreover, chance events—which may
- (20) indicate nothing about the direction of trends in population size—may lead to its extinction. The probability of extinction due to such random factors depends on the population size and is independent of the prevailing direction of change in that size.
- (25) For biologists, population declines are potentially more worrisome than extinctions. Persistent declines, especially in large populations, indicate a changed ecological context. Even here, distinctions must again be made among declines that are only
- (30) apparent (in the sense that they are part of habitual cycles or of normal fluctuations), declines that take a population to some lower but still acceptable level, and those that threaten extinction (e.g., by taking the number of individuals below the minimum
- (35) viable population). Anecdotal reports of population decreases cannot distinguish among these possibilities, and some amphibian populations have shown strong fluctuations in the past.
- It is indisputably true that there is simply not
- (40) enough long-term scientific data on amphibian populations to enable researchers to identify real declines in amphibian populations. Many fairly common amphibian species declared all but extinct after severe declines in the 1950s and 1960s
- (45) have subsequently recovered, and so might the apparently declining populations that have generated the current appearance of an amphibian crisis. Unfortunately, long-term data will not soon be forthcoming, and postponing environmental
- (50) action while we wait for it may doom species and whole ecosystems to extinction.

Questions 504–509 refer to the passage.

504. The primary purpose of the passage is to
- (A) assess the validity of a certain view
- (B) distinguish between two phenomena
- (C) identify the causes of a problem
- (D) describe a disturbing trend
- (E) allay concern about a particular phenomenon
505. It can be inferred from the passage that the author believes which of the following to be true of the environmentalists mentioned in lines 5–6 ?
- (A) They have wrongly chosen to focus on anecdotal reports rather than on the long-term data that are currently available concerning amphibians.
- (B) Their recommendations are flawed because their research focuses too narrowly on a single category of animal species.
- (C) Their certainty that population declines in general are caused by environmental degradation is not warranted.
- (D) They have drawn premature conclusions concerning a crisis in amphibian populations from recent reports of declines.
- (E) They have overestimated the effects of chance events on trends in amphibian populations.
506. It can be inferred from the passage that the author believes which of the following to be true of the amphibian extinctions that have recently been reported?
- (A) They have resulted primarily from human activities causing environmental degradation.
- (B) They could probably have been prevented if timely action had been taken to protect the habitats of amphibian species.
- (C) They should not come as a surprise, because amphibian populations generally have been declining for a number of years.
- (D) They have probably been caused by a combination of chance events.
- (E) They do not clearly constitute evidence of general environmental degradation.

507. According to the passage, each of the following is true of endangered amphibian species EXCEPT:

- (A) They are among the rarest kinds of amphibians.
- (B) They generally have populations that are small in size.
- (C) They are in constant danger of extinction.
- (D) Those with decreasing populations are the most likely candidates for immediate extinction.
- (E) They are in danger of extinction due to events that sometimes have nothing to do with human activities.

508. Which of the following most accurately describes the organization of the passage?

- (A) A question is raised, a distinction regarding it is made, and the question is answered.
- (B) An interpretation is presented, its soundness is examined, and a warning is given.
- (C) A situation is described, its consequences are analyzed, and a prediction is made.
- (D) Two interpretations of a phenomenon are described, and one of them is rejected as invalid.
- (E) Two methods for analyzing a phenomenon are compared, and further study of the phenomenon is recommended.

509. Which of the following best describes the function of the sentence in lines 35–38 ?

- (A) To give an example of a particular kind of study
- (B) To cast doubt on an assertion made in the previous sentence
- (C) To raise an objection to a view presented in the first paragraph
- (D) To provide support for a view presented in the first paragraph
- (E) To introduce an idea that will be countered in the following paragraph

- Line 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).

Questions 510–513 refer to the passage.

510. 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*
511. 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.

512. Which of the following, if true, would most clearly support the argument about keystone status advanced in the last sentence of the passage (lines 24–31) ?

- (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.

513. 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.

Line Conodonts, the spiky phosphatic remains (bones and teeth composed of calcium phosphate) of tiny marine animals that probably appeared about 520 million years ago, were once among the most

(5) controversial of fossils. Both the nature of the organism to which the remains belonged and the function of the remains were unknown. However, since the 1981 discovery of fossils preserving not just the phosphatic elements but also other remains

(10) of the tiny soft-bodied animals (also called conodonts) that bore them, scientists' reconstructions of the animals' anatomy have had important implications for hypotheses concerning the development of the vertebrate skeleton.

(15) The vertebrate skeleton had traditionally been regarded as a defensive development, champions of this view postulating that it was only with the much later evolution of jaws that vertebrates became predators. The first vertebrates, which were soft-

(20) bodied, would have been easy prey for numerous invertebrate carnivores, especially if these early vertebrates were sedentary suspension feeders. Thus, traditionalists argued, these animals developed coverings of bony scales or plates, and teeth were

(25) secondary features, adapted from the protective bony scales. Indeed, external skeletons of this type are common among the well-known fossils of ostracoderms, jawless vertebrates that existed from approximately 500 to 400 million years ago.

(30) However, other paleontologists argued that many of the definitive characteristics of vertebrates, such as paired eyes and muscular and skeletal adaptations for active life, would not have evolved unless the first vertebrates were predatory. Teeth were more

(35) primitive than external armor according to this view, and the earliest vertebrates were predators.

The stiffening notochord along the back of the body, V-shaped muscle blocks along the sides, and posterior tail fins help to identify conodonts as

(40) among the most primitive of vertebrates. The lack of any mineralized structures apart from the elements in the mouth indicates that conodonts were more primitive than the armored jawless fishes such as the ostracoderms. It now appears that the hard parts that

(45) first evolved in the mouth of an animal improved its efficiency as a predator, and that aggression rather than protection was the driving force behind the origin of the vertebrate skeleton.

Questions 514–516 refer to the passage.

514. According to the passage, the anatomical evidence provided by the preserved soft bodies of conodonts led scientists to conclude that

- (A) conodonts had actually been invertebrate carnivores
- (B) conodonts' teeth were adapted from protective bony scales
- (C) conodonts were primitive vertebrate suspension feeders
- (D) primitive vertebrates with teeth appeared earlier than armored vertebrates
- (E) scientists' original observations concerning the phosphatic remains of conodonts were essentially correct

515. The second paragraph in the passage serves primarily to

- (A) outline the significance of the 1981 discovery of conodont remains to the debate concerning the development of the vertebrate skeleton
- (B) contrast the traditional view of the development of the vertebrate skeleton with a view derived from the 1981 discovery of conodont remains
- (C) contrast the characteristics of the ostracoderms with the characteristics of earlier soft-bodied vertebrates
- (D) explain the importance of the development of teeth among the earliest vertebrate predators
- (E) present the two sides of the debate concerning the development of the vertebrate skeleton

516. It can be inferred that on the basis of the 1981 discovery of conodont remains, paleontologists could draw which of the following conclusions?

- (A) The earliest vertebrates were sedentary suspension feeders.
- (B) Ostracoderms were not the earliest vertebrates.
- (C) Defensive armor preceded jaws among vertebrates.
- (D) Paired eyes and adaptations for activity are definitive characteristics of vertebrates.
- (E) Conodonts were unlikely to have been predators.

Line 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
(5) 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
(10) 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
(15) 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
(20) 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:
(25) 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
(30) 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.
(35) 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
(40) a change at the telephone exchange from
maintenance-intensive electromechanical switches
to semielectronic switching systems altered work
tasks, skills, training opportunities, administration,
and organization of workers. Some changes Clark
(45) 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
(50) social choice decisive and when are the concrete
characteristics of technology more important?"

Questions 517–524 refer to the passage.

517. 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

518. Which of the following statements about the modernization of the telephone exchange is supported by information in the passage?

- (A) The new technology reduced the role of managers in labor negotiations.
- (B) The modernization was implemented without the consent of the employees directly affected by it.
- (C) The modernization had an impact that went significantly beyond maintenance routines.
- (D) Some of the maintenance workers felt victimized by the new technology.
- (E) The modernization gave credence to the view of advocates of social constructivism.

519. Which of the following most accurately describes Clark's opinion of Braverman's position?

- (A) He respects its wide-ranging popularity.
- (B) He disapproves of its misplaced emphasis on the influence of managers.
- (C) He admires the consideration it gives to the attitudes of the workers affected.
- (D) He is concerned about its potential to impede the implementation of new technologies.
- (E) He is sympathetic to its concern about the impact of modern technology on workers.

520. The information in the passage suggests that which of the following statements from hypothetical sociological studies of change in industry most clearly exemplifies the social constructivists' version of technological determinism?
- (A) It is the available technology that determines workers' skills, rather than workers' skills influencing the application of technology.
 - (B) All progress in industrial technology grows out of a continuing negotiation between technological possibility and human need.
 - (C) Some organizational change is caused by people; some is caused by computer chips.
 - (D) Most major technological advances in industry have been generated through research and development.
 - (E) Some industrial technology eliminates jobs, but educated workers can create whole new skills areas by the adaptation of the technology.
521. The information in the passage suggests that Clark believes that which of the following would be true if social constructivism had not gained widespread acceptance?
- (A) Businesses would be more likely to modernize without considering the social consequences of their actions.
 - (B) There would be greater understanding of the role played by technology in producing social change.
 - (C) Businesses would be less likely to understand the attitudes of employees affected by modernization.
 - (D) Modernization would have occurred at a slower rate.
 - (E) Technology would have played a greater part in determining the role of business in society.
522. According to the passage, constructivists employed which of the following to promote their argument?
- (A) Empirical studies of business situations involving technological change
 - (B) Citation of managers supportive of their position
 - (C) Construction of hypothetical situations that support their view
 - (D) Contrasts of their view with a misstatement of an opposing view
 - (E) Descriptions of the breadth of impact of technological change
523. The author of the passage uses the expression "are supposed to" in line 25 primarily in order to
- (A) suggest that a contention made by constructivists regarding determinists is inaccurate
 - (B) define the generally accepted position of determinists regarding the implementation of technology
 - (C) engage in speculation about the motivation of determinists
 - (D) lend support to a comment critical of the position of determinists
 - (E) contrast the historical position of determinists with their position regarding the exchange modernization
524. Which of the following statements about Clark's study of the telephone exchange can be inferred from information in the passage?
- (A) Clark's reason for undertaking the study was to undermine Braverman's analysis of the function of technology.
 - (B) Clark's study suggests that the implementation of technology should be discussed in the context of conflict between labor and management.
 - (C) Clark examined the impact of changes in the technology of switching at the exchange in terms of overall operations and organization.
 - (D) Clark concluded that the implementation of new switching technology was equally beneficial to management and labor.
 - (E) Clark's analysis of the change in switching systems applies only narrowly to the situation at the particular exchange that he studied.

- Line Because the framers of the United States Constitution (written in 1787) believed that protecting property rights relating to inventions would encourage the new nation's economic growth, they gave
- (5) Congress—the national legislature—a constitutional mandate to grant patents for inventions. The resulting patent system has served as a model for those in other nations. Recently, however, scholars have questioned whether the American system helped
- (10) achieve the framers' goals. These scholars have contended that from 1794 to roughly 1830, American inventors were unable to enforce property rights because judges were “antipatent” and routinely invalidated patents for arbitrary reasons. This
- (15) argument is based partly on examination of court decisions in cases where patent holders (“patentees”) brought suit alleging infringement of their patent rights. In the 1820s, for instance, 75 percent of verdicts were decided against the patentee.
- (20) The proportion of verdicts for the patentee began to increase in the 1830s, suggesting to these scholars that judicial attitudes toward patent rights began shifting then.
- Not all patent disputes in the early nineteenth century were litigated, however, and litigated
- (25) cases were not drawn randomly from the population of disputes. Therefore the rate of verdicts in favor of patentees cannot be used by itself to gauge changes in judicial attitudes
- (30) or enforceability of patent rights. If early judicial decisions were prejudiced against patentees, one might expect that subsequent courts—allegedly more supportive of patent rights—would reject the former legal precedents. But pre-1830
- (35) cases have been cited as frequently as later decisions, and they continue to be cited today, suggesting that the early decisions, many of which clearly declared that patent rights were a just recompense for inventive ingenuity,
- (40) provided a lasting foundation for patent law. The proportion of judicial decisions in favor of patentees began to increase during the 1830s because of a change in the underlying population of cases brought to trial. This change was partly
- (45) due to an 1836 revision to the patent system: an examination procedure, still in use today, was instituted in which each application is scrutinized for its adherence to patent law. Previously, patents were automatically granted upon payment
- (50) of a \$30 fee.

Questions 525–529 refer to the passage.

525. The passage implies that which of the following was a reason that the proportion of verdicts in favor of patentees began to increase in the 1830s ?
- (A) Patent applications approved after 1836 were more likely to adhere closely to patent law.
- (B) Patent laws enacted during the 1830s better defined patent rights.
- (C) Judges became less prejudiced against patentees during the 1830s.
- (D) After 1836, litigated cases became less representative of the population of patent disputes.
- (E) The proportion of patent disputes brought to trial began to increase after 1836.
526. The passage implies that the scholars mentioned in line 8 would agree with which of the following criticisms of the American patent system before 1830 ?
- (A) Its definition of property rights relating to inventions was too vague to be useful.
- (B) Its criteria for the granting of patents were not clear.
- (C) It made it excessively difficult for inventors to receive patents.
- (D) It led to excessive numbers of patent-infringement suits.
- (E) It failed to encourage national economic growth.
527. It can be inferred from the passage that the frequency with which pre-1830 cases have been cited in court decisions is an indication that
- (A) judicial support for patent rights was strongest in the period before 1830
- (B) judicial support for patent rights did not increase after 1830
- (C) courts have returned to judicial standards that prevailed before 1830
- (D) verdicts favoring patentees in patent-infringement suits did not increase after 1830
- (E) judicial bias against patentees persisted after 1830

528. It can be inferred from the passage that the author and the scholars referred to in line 21 disagree about which of the following aspects of the patents defended in patent-infringement suits before 1830 ?

- (A) Whether the patents were granted for inventions that were genuinely useful
- (B) Whether the patents were actually relevant to the growth of the United States economy
- (C) Whether the patents were particularly likely to be annulled by judges
- (D) Whether the patents were routinely invalidated for reasons that were arbitrary
- (E) Whether the patents were vindicated at a significantly lower rate than patents in later suits

529. The author of the passage cites which of the following as evidence challenging the argument referred to in lines 14–15 ?

- (A) The proportion of cases that were decided against patentees in the 1820s
- (B) The total number of patent disputes that were litigated from 1794 to 1830
- (C) The fact that later courts drew upon the legal precedents set in pre-1830 patent cases
- (D) The fact that the proportion of judicial decisions in favor of patentees began to increase during the 1830s
- (E) The constitutional rationale for the 1836 revision of the patent system

Line Jacob Burckhardt's view that Renaissance European women "stood on a footing of perfect equality" with Renaissance men has been repeatedly cited by feminist scholars as a prelude to their presentation of rich historical evidence of women's inequality. In striking contrast to Burckhardt, Joan Kelly in her famous 1977 essay, "Did Women Have a Renaissance?" argued that the Renaissance was a period of economic and social decline for women relative both to Renaissance men and to medieval women. Recently, however, a significant trend among feminist scholars has entailed a rejection of both Kelly's dark vision of the Renaissance and Burckhardt's rosy one. Many recent works by these scholars stress the ways in which differences among Renaissance women—especially in terms of social status and religion—work to complicate the kinds of generalizations both Burckhardt and Kelly made on the basis of their observations about upper-class Italian women.

The trend is also evident, however, in works focusing on those middle- and upper-class European women whose ability to write gives them disproportionate representation in the historical record. Such women were, simply by virtue of their literacy, members of a tiny minority of the population, so it is risky to take their descriptions of their experiences as typical of "female experience" in any general sense. Tina Krontiris, for example, in her fascinating study of six Renaissance women writers, does tend at times to conflate "women" and "women writers," assuming that women's gender, irrespective of other social differences, including literacy, allows us to view women as a homogeneous social group and make that group an object of analysis. Nonetheless, Krontiris makes a significant contribution to the field and is representative of those authors who offer what might be called a cautiously optimistic assessment of Renaissance women's achievements, although she also stresses the social obstacles Renaissance women faced when they sought to raise their "oppositional voices." Krontiris is concerned to show women intentionally negotiating some power for themselves

- (45) (at least in the realm of public discourse) against potentially constraining ideologies, but in her sober and thoughtful concluding remarks, she suggests that such verbal opposition to cultural stereotypes was highly circumscribed; women seldom attacked the basic assumptions in the ideologies that oppressed them.

Questions 530–536 refer to the passage.

530. The author of the passage discusses Krontiris primarily to provide an example of a writer who
- (A) is highly critical of the writings of certain Renaissance women
 - (B) supports Kelly's view of women's status during the Renaissance
 - (C) has misinterpreted the works of certain Renaissance women
 - (D) has rejected the views of both Burckhardt and Kelly
 - (E) has studied Renaissance women in a wide variety of social and religious contexts
531. According to the passage, Krontiris's work differs from that of the scholars mentioned in line 12 in which of the following ways?
- (A) Krontiris's work stresses the achievements of Renaissance women rather than the obstacles to their success.
 - (B) Krontiris's work is based on a reinterpretation of the work of earlier scholars.
 - (C) Krontiris's views are at odds with those of both Kelly and Burckhardt.
 - (D) Krontiris's work focuses on the place of women in Renaissance society.
 - (E) Krontiris's views are based exclusively on the study of a privileged group of women.

532. According to the passage, feminist scholars cite Burckhardt's view of Renaissance women primarily for which of the following reasons?
- (A) Burckhardt's view forms the basis for most arguments refuting Kelly's point of view.
 - (B) Burckhardt's view has been discredited by Kelly.
 - (C) Burckhardt's view is one that many feminist scholars wish to refute.
 - (D) Burckhardt's work provides rich historical evidence of inequality between Renaissance women and men.
 - (E) Burckhardt's work includes historical research supporting the arguments of the feminist scholars.
533. It can be inferred that both Burckhardt and Kelly have been criticized by the scholars mentioned in line 12 for which of the following?
- (A) Assuming that women writers of the Renaissance are representative of Renaissance women in general
 - (B) Drawing conclusions that are based on the study of an atypical group of women
 - (C) Failing to describe clearly the relationship between social status and literacy among Renaissance women
 - (D) Failing to acknowledge the role played by Renaissance women in opposing cultural stereotypes
 - (E) Failing to acknowledge the ways in which social status affected the creative activities of Renaissance women
534. The author of the passage suggests that Krontiris incorrectly assumes that
- (A) social differences among Renaissance women are less important than the fact that they were women
 - (B) literacy among Renaissance women was more prevalent than most scholars today acknowledge
 - (C) during the Renaissance, women were able to successfully oppose cultural stereotypes relating to gender
 - (D) Renaissance women did not face many difficult social obstacles relating to their gender
 - (E) in order to attain power, Renaissance women attacked basic assumptions in the ideologies that oppressed them
535. The last sentence in the passage serves primarily to
- (A) suggest that Krontiris's work is not representative of recent trends among feminist scholars
 - (B) undermine the argument that literate women of the Renaissance sought to oppose social constraints imposed on them
 - (C) show a way in which Krontiris's work illustrates a "cautiously optimistic" assessment of Renaissance women's achievements
 - (D) summarize Krontiris's view of the effect of literacy on the lives of upper- and middle-class Renaissance women
 - (E) illustrate the way in which Krontiris's study differs from the studies done by Burckhardt and Kelly
536. The author of the passage implies that the women studied by Krontiris are unusual in which of the following ways?
- (A) They faced obstacles less formidable than those faced by other Renaissance women.
 - (B) They have been seen by historians as more interesting than other Renaissance women.
 - (C) They were more concerned about recording history accurately than were other Renaissance women.
 - (D) Their perceptions are more likely to be accessible to historians than are those of most other Renaissance women.
 - (E) Their concerns are likely to be of greater interest to feminist scholars than are the ideas of most other Renaissance women.

- Line When asteroids collide, some collisions cause an asteroid to spin faster; others slow it down. If asteroids are all monoliths—single rocks—undergoing random collisions, a graph of their rotation rates
- (5) should show a bell-shaped distribution with statistical “tails” of very fast and very slow rotators. If asteroids are rubble piles, however, the tail representing the very fast rotators would be missing, because any loose aggregate spinning faster than once every few
- (10) hours (depending on the asteroid’s bulk density) would fly apart. Researchers have discovered that all but five observed asteroids obey a strict limit on rate of rotation. The exceptions are all smaller than 200 meters in diameter, with an abrupt cutoff for
- (15) asteroids larger than that.
- The evident conclusion—that asteroids larger than 200 meters across are multicomponent structures or rubble piles—agrees with recent computer modeling of collisions, which also finds a transition at that
- (20) diameter. A collision can blast a large asteroid to bits, but after the collision those bits will usually move slower than their mutual escape velocity. Over several hours, gravity will reassemble all but the fastest pieces into a rubble pile. Because collisions among
- (25) asteroids are relatively frequent, most large bodies have already suffered this fate. Conversely, most small asteroids should be monolithic, because impact fragments easily escape their feeble gravity.

Questions 537–540 refer to the passage.

537. The passage implies which of the following about the five asteroids mentioned in line 12 ?
- (A) Their rotation rates are approximately the same.
 - (B) They have undergone approximately the same number of collisions.
 - (C) They are monoliths.
 - (D) They are composed of fragments that have escaped the gravity of larger asteroids.
 - (E) They were detected only recently.
538. The discovery of which of the following would call into question the conclusion mentioned in line 16 ?
- (A) An asteroid 100 meters in diameter rotating at a rate of once per week
 - (B) An asteroid 150 meters in diameter rotating at a rate of 20 times per hour
 - (C) An asteroid 250 meters in diameter rotating at a rate of once per week
 - (D) An asteroid 500 meters in diameter rotating at a rate of once per hour
 - (E) An asteroid 1,000 meters in diameter rotating at a rate of once every 24 hours

539. According to the passage, which of the following is a prediction that is based on the strength of the gravitational attraction of small asteroids?
- (A) Small asteroids will be few in number.
 - (B) Small asteroids will be monoliths.
 - (C) Small asteroids will collide with other asteroids very rarely.
 - (D) Most small asteroids will have very fast rotation rates.
 - (E) Almost no small asteroids will have very slow rotation rates.
540. The author of the passage mentions “escape velocity” (see line 22) in order to help explain which of the following?
- (A) The tendency for asteroids to become smaller rather than larger over time
 - (B) The speed with which impact fragments reassemble when they do not escape an asteroid’s gravitational attraction after a collision
 - (C) The frequency with which collisions among asteroids occur
 - (D) The rotation rates of asteroids smaller than 200 meters in diameter
 - (E) The tendency for large asteroids to persist after collisions

- Line Most attempts by physicists to send particles faster than the speed of light involve a remarkable phenomenon called quantum tunneling, in which particles travel through solid barriers that appear to be impenetrable. If you throw a ball at a wall, you expect it to bounce back, not to pass straight through it. Yet subatomic particles perform the equivalent feat. Quantum theory says that there is a distinct, albeit small, probability that such a particle will tunnel its way through a barrier; the probability declines exponentially as the thickness of the barrier increases. Though the extreme rapidity of quantum tunneling was noted as early as 1932, not until 1955 was it hypothesized—by Wigner and Eisenbud—that tunneling particles sometimes travel faster than light. Their grounds were calculations that suggested that the time it takes a particle to tunnel through a barrier increases with the thickness of the barrier until tunneling time reaches a maximum; beyond that maximum, tunneling time stays the same regardless of barrier thickness. This would imply that once maximum tunneling time is reached, tunneling speed will increase without limit as barrier thickness increases. Several recent experiments have supported this hypothesis that tunneling particles sometimes reach superluminal speed. According to measurements performed by Raymond Chiao and colleagues, for example, photons can pass through an optical filter at 1.7 times the speed of light.

Questions 541–543 refer to the passage.

541. The author of the passage mentions calculations about tunneling time and barrier thickness in order to
- (A) suggest that tunneling time is unrelated to barrier thickness
 - (B) explain the evidence by which Wigner and Eisenbud discovered the phenomenon of tunneling
 - (C) describe data recently challenged by Raymond Chiao and colleagues
 - (D) question why particles engaged in quantum tunneling rarely achieve extremely high speeds
 - (E) explain the basis for Wigner and Eisenbud's hypothesis
542. The passage implies that if tunneling time reached no maximum in increasing with barrier thickness, then
- (A) tunneling speed would increase with barrier thickness
 - (B) tunneling speed would decline with barrier thickness
 - (C) tunneling speed would vary with barrier thickness
 - (D) tunneling speed would not be expected to increase without limit
 - (E) successful tunneling would occur even less frequently than it does
543. Which of the following statements about the earliest scientific investigators of quantum tunneling can be inferred from the passage?
- (A) They found it difficult to increase barrier thickness continually.
 - (B) They anticipated the later results of Chiao and his colleagues.
 - (C) They did not suppose that tunneling particles could travel faster than light.
 - (D) They were unable to observe instances of successful tunneling.
 - (E) They made use of photons to study the phenomenon of tunneling.

8.4 Practice Questions

Each of the critical reasoning questions is based on a short argument, a set of statements, or a plan of action. For each question, select the best answer of the choices given.

544. Neuroscientist: Memory evolved to help animals react appropriately to situations they encounter by drawing on the past experience of similar situations. But this does not require that animals perfectly recall every detail of all their experiences. Instead, to function well, memory should generalize from past experiences that are similar to the current one.

The neuroscientist's statements, if true, most strongly support which of the following conclusions?

- (A) At least some animals perfectly recall every detail of at least some past experiences.
- (B) Perfectly recalling every detail of all their past experiences could help at least some animals react more appropriately than they otherwise would to new situations they encounter.
- (C) Generalizing from past experiences requires clear memories of most if not all the details of those experiences.
- (D) Recalling every detail of all past experiences would be incompatible with any ability to generalize from those experiences.
- (E) Animals can often react more appropriately than they otherwise would to situations they encounter if they draw on generalizations from past experiences of similar situations.

545. Astronomer: Most stars are born in groups of thousands, each star in a group forming from the same parent cloud of gas. Each cloud has a unique, homogeneous chemical composition. Therefore, whenever two stars have the same chemical composition as each other, they must have originated from the same cloud of gas.

Which of the following, if true, would most strengthen the astronomer's argument?

- (A) In some groups of stars, not every star originated from the same parent cloud of gas.
- (B) Clouds of gas of similar or identical chemical composition may be remote from each other.
- (C) Whenever a star forms, it inherits the chemical composition of its parent cloud of gas.
- (D) Many stars in vastly different parts of the universe are quite similar in their chemical compositions.
- (E) Astronomers can at least sometimes precisely determine whether a star has the same chemical composition as its parent cloud of gas.

546. With employer-paid training, workers have the potential to become more productive not only in their present employment but also in any number of jobs with different employers. To increase the productivity of their workforce, many firms are planning to maintain or even increase their investments in worker training. But some training experts object that if a trained worker is hired away by another firm, the employer that paid for the training has merely subsidized a competitor. They note that such hiring has been on the rise in recent years.

Which of the following would, if true, contribute most to defeating the training experts' objection to the firms' strategy?

- (A) Firms that promise opportunities for advancement to their employees get, on average, somewhat larger numbers of job applications from untrained workers than do firms that make no such promise.

- (B) In many industries, employees who take continuing-education courses are more competitive in the job market.
- (C) More and more educational and training institutions are offering reduced tuition fees to firms that subsidize worker training.
- (D) Research shows that workers whose training is wholly or partially subsidized by their employer tend to get at least as much training as do workers who pay for all their own training.
- (E) For most firms that invest in training their employees, the value added by that investment in employees who stay exceeds the value lost through other employees' leaving to work for other companies.

547. Candle Corporation's television stations are likely to have more income from advertisers than previously. This is because advertisers prefer to reach people in the 18- to 49-year-old age group and the number of people in that group watching Candle television is increasing. Furthermore, among Candle viewers, the percentage of viewers 18 to 49 years old is increasing.

Which of the following, if true, would most strengthen the argument that Candle Corporation will receive more income from advertisers?

- (A) Advertisers carefully monitor the demographic characteristics of television audiences and purchase advertising time to reach the audiences they prefer to reach.
- (B) Among people over 49 years old, fewer viewers of Candle stations buy products advertised on television than do viewers of other stations.
- (C) There will be increasingly more advertisements on television that are directed at viewers who are over 49 years old.
- (D) Candle stations plan to show reruns of television shows during hours when other stations run shows for the first time.
- (E) People 18 to 49 years old generally have less disposable income to spend than do people over 49 years old.

548. A provincial government plans to raise the gasoline tax to give people an incentive to drive less, reducing traffic congestion in the long term. However, skeptics point out that most people in the province live in areas where cars are the only viable transportation to jobs and stores and therefore cannot greatly change their driving habits in response to higher gasoline prices.

In light of the skeptics' objection, which of the following, if true, would most logically support the prediction that the government's plan will achieve its goal of reducing traffic congestion?

- (A) The revenue from the tax will be used to make public transportation a viable means of transportation to jobs and stores for far more people.
- (B) The tax will encourage many residents to switch to more fuel-efficient cars, reducing air pollution and other problems.
- (C) Because gasoline has been underpriced for decades, the province has many neighborhoods where cars are the only viable means of transportation.
- (D) Most residents who cannot greatly change their driving habits could compensate for high gasoline prices by reducing other expenses.
- (E) Traffic congestion is an especially serious problem for people for whom cars are the only viable means of transportation.

549. Editorial: The roof of Northtown's municipal equipment-storage building collapsed under the weight of last week's heavy snowfall. The building was constructed recently and met local building-safety codes in every particular, except that the nails used for attaching roof supports to the building's columns were of a smaller size than the codes specify for this purpose. Clearly, this collapse exemplifies how even a single, apparently insignificant departure from safety standards can have severe consequences.

Which of the following, if true, most seriously weakens the editorial's argument?

- (A) The only other buildings to suffer roof collapses from the weight of the snowfall were older buildings constructed according to less exacting standards than those in the codes.
- (B) The amount of snow that accumulated on the roof of the equipment-storage building was greater than the predicted maximum that was used in drawing up the safety codes.
- (C) Because the equipment-storage building was not intended for human occupation, some safety-code provisions that would have applied to an office building did not apply to it.
- (D) The municipality of Northtown itself has the responsibility for ensuring that buildings constructed within its boundaries meet the provisions of the building-safety codes.
- (E) Because the equipment-storage building was used for storing snow-removal equipment, the building was almost completely empty when the roof collapsed.

550. Political theorist: Even with the best spies, area experts, and satellite surveillance, foreign policy assessments can still lack important information. In such circumstances intuitive judgment is vital. A national leader with such judgment can make good decisions about foreign policy even when current information is incomplete, since _____.

Which of the following, if true, most logically completes the argument?

- (A) the central reason for failure in foreign policy decision making is the absence of critical information

- (B) those leaders whose foreign policy decisions have been highly ranked have also been found to have good intuitive judgment
- (C) both intuitive judgment and good information are required for sound decision making
- (D) good foreign policy decisions often lead to improved methods of gathering information
- (E) intuitive judgment can produce good decisions based on past experience, even when there are important gaps in current information

551. During the earliest period of industrialization in Britain, steam engines were more expensive to build and operate than either windmills or water mills, the other practicable sources of power for factories. Yet despite their significant cost disadvantage, steam-powered factories were built in large numbers well before technical improvements brought their cost down. Furthermore, they were built even in regions where geographical conditions permitted the construction of wind- and water-powered factories close to major markets.

Which of the following, if true, most helps to explain the proliferation of steam-powered factories during the earliest period of industrialization in Britain?

- (A) In many areas of Britain, there were fewer steam-powered factories than wind- or water-powered factories in the earliest period of industrialization.
- (B) Unlike wind- or water-powered factories, steam-powered factories were fueled with coal, which sometimes had to be transported significant distances from the mine to the site of the factory.
- (C) It was both difficult and expensive to convert a factory from wind power or water power to steam power.
- (D) In the early period of industrialization, many goods sold in towns and cities could not be mass-produced in factories.
- (E) In Britain, the number of sites where a wind- or water-powered factory could be built was insufficient to provide for all of the demand for factory-produced goods at the time.

552. Snowmaking machines work by spraying a mist that freezes immediately on contact with cold air. Because the sudden freezing kills bacteria, QuickFreeze is planning to market a wastewater purification system

that works on the same principle. The process works only when temperatures are cold, however, so municipalities using it will still need to maintain a conventional system.

Which of the following, if true, provides the strongest grounds for a prediction that municipalities will buy QuickFreeze's purification system despite the need to maintain a conventional purification system as well?

- (A) Bacteria are not the only impurities that must be removed from wastewater.
- (B) Many municipalities have old wastewater purification systems that need to be replaced.
- (C) Conventional wastewater purification systems have not been fully successful in killing bacteria at cold temperatures.
- (D) During times of warm weather, when it is not in use, QuickFreeze's purification system requires relatively little maintenance.
- (E) Places where the winters are cold rarely have a problem of water shortage.

553. Suncorp, a new corporation with limited funds, has been clearing large sections of the tropical Amazon forest for cattle ranching. This practice continues even though greater profits can be made from rubber tapping, which does not destroy the forest, than from cattle ranching, which does destroy the forest.

Which of the following, if true, most helps to explain why Suncorp has been pursuing the less profitable of the two economic activities mentioned above?

- (A) The soil of the Amazon forest is very rich in nutrients that are important in the development of grazing lands.
- (B) Cattle-ranching operations that are located in tropical climates are more profitable than cattle-ranching operations that are located in cold-weather climates.
- (C) In certain districts, profits made from cattle ranching are more heavily taxed than profits made from any other industry.
- (D) Some of the cattle that are raised on land cleared in the Amazon are killed by wildcats.
- (E) The amount of money required to begin a rubber-tapping operation is twice as high as the amount needed to begin a cattle ranch.

554. Archaeologists use technology to analyze ancient sites. It is likely that this technology will advance considerably in the near future, allowing archaeologists to gather more information than is currently possible. If they study certain sites now, they risk contaminating or compromising them for future studies. Therefore, in order to maximize the potential for gathering knowledge in the long run, a team of archaeologists plans to delay the examination of a newly excavated site.

Which of the following would be most useful to investigate for the purpose of evaluating the plan's prospects for achieving its goal?

- (A) Whether any of the contents of the site will significantly deteriorate before the anticipated technology is available
- (B) Whether there will continue to be improvements on the relevant technology
- (C) Whether the team can study a site other than the newly excavated site for the time being
- (D) Whether the site was inhabited by a very ancient culture
- (E) Whether the anticipated technology will damage objects under study

555. A newly discovered painting seems to be the work of one of two seventeenth-century artists, either the northern German Johannes Drechen or the Frenchman Louis Birelle, who sometimes painted in the same style as Drechen. Analysis of the carved picture frame, which has been identified as the painting's original seventeenth-century frame, showed that it is made of wood found widely in northern Germany at the time, but rare in the part of France where Birelle lived. This shows that the painting is most likely the work of Drechen.

Which of the following is an assumption that the argument requires?

- (A) The frame was made from wood local to the region where the picture was painted.
- (B) Drechen is unlikely to have ever visited the home region of Birelle in France.
- (C) Sometimes a painting so resembles others of its era that no expert is able to confidently decide who painted it.
- (D) The painter of the picture chose the frame for the picture.
- (E) The carving style of the picture frame is not typical of any specific region of Europe.

556. Beginning in 1966 all new cars sold in Morodia were required to have safety belts and power steering. Previously, most cars in Morodia were without these features. Safety belts help to prevent injuries in collisions, and power steering helps to avoid collisions in the first place. But even though in 1966 one-seventh of the cars in Morodia were replaced with new cars, the number of car collisions and collision-related injuries did not decline.

Which of the following, if true about Morodia, most helps to explain why the number of collisions and collision-related injuries in Morodia failed to decline in 1966?

- (A) Because of a driver-education campaign, most drivers and passengers in cars that did have safety belts used them in 1966.
- (B) Most of the new cars bought in 1966 were bought in the months of January and February.
- (C) In 1965, substantially more than one-seventh of the cars in Morodia were replaced with new cars.
- (D) An excessive reliance on the new safety features led many owners of new cars to drive less cautiously in 1966 than before.
- (E) The seat belts and power steering put into new cars sold in 1966 had to undergo strict quality-control inspections by manufacturers, whether the cars were manufactured in Morodia or not.

557. In order to reduce the number of items damaged while in transit to customers, packaging consultants recommended that the TrueSave mail-order company increase the amount of packing material so as to fill any empty spaces in its cartons. Accordingly, TrueSave officials instructed the company's packers to use more packing material than before, and the packers zealously acted on these instructions and used as much as they could. Nevertheless, customer reports of damaged items rose somewhat.

Which of the following, if true, most helps to explain why acting on the consultants' recommendation failed to achieve its goal?

- (A) The change in packing policy led to an increase in expenditure on packing material and labor.
- (B) When packing material is compressed too densely, it loses some of its capacity to absorb shock.
- (C) The amount of packing material used in a carton does not significantly influence the ease with which a customer can unpack the package.

- (D) Most of the goods that TrueSave ships are electronic products that are highly vulnerable to being damaged in transit.
- (E) TrueSave has lost some of its regular customers as a result of the high number of damaged items they received.

558. Parland's alligator population has been declining in recent years, primarily because of hunting. Alligators prey heavily on a species of freshwater fish that is highly valued as food by Parlanders, who had hoped that the decline in the alligator population would lead to an increase in the numbers of these fish available for human consumption. Yet the population of this fish species has also declined, even though the annual number caught for human consumption has not increased.

Which of the following, if true, most helps to explain the decline in the population of the fish species?

- (A) The decline in the alligator population has meant that fishers can work in some parts of lakes and rivers that were formerly too dangerous.
- (B) Over the last few years, Parland's commercial fishing enterprises have increased the number of fishing boats they use.
- (C) The main predator of these fish is another species of fish on which alligators also prey.
- (D) Many Parlanders who hunt alligators do so because of the high market price of alligator skins, not because of the threat alligators pose to the fish population.
- (E) In several neighboring countries through which Parland's rivers also flow, alligators are at risk of extinction as a result of extensive hunting.

559. A certain automaker aims to increase its market share by deeply discounting its vehicles' prices for the next several months. The discounts will cut into profits, but because they will be heavily advertised the manufacturer hopes that they will attract buyers away from rival manufacturers' cars. In the longer term, the automaker envisions that customers initially attracted by the discounts may become loyal customers.

In assessing the plan's chances of achieving its aim, it would be most useful to know which of the following?

- (A) Whether the automaker's competitors are likely to respond by offering deep discounts on their own products

- (B) Whether the advertisements will be created by the manufacturer's current advertising agency
- (C) Whether some of the automaker's models will be more deeply discounted than others
- (D) Whether the automaker will be able to cut costs sufficiently to maintain profit margins even when the discounts are in effect
- (E) Whether an alternative strategy might enable the automaker to enhance its profitability while holding a constant or diminishing share of the market

560. In virtually any industry, technological improvements increase labor productivity, which is the output of goods and services per person-hour worked. In Parland's industries, labor productivity is significantly higher than it is in Vergia's industries. Clearly, therefore, Parland's industries must, on the whole, be further advanced technologically than Vergia's are.

The argument is most vulnerable to which of the following criticisms?

- (A) It offers a conclusion that is no more than a paraphrase of one of the pieces of information provided in its support.
- (B) It presents as evidence in support of a claim information that is inconsistent with other evidence presented in support of the same claim.
- (C) It takes one possible cause of a condition to be the actual cause of that condition without considering any other possible causes.
- (D) It takes a condition to be the effect of something that happened only after the condition already existed.
- (E) It makes a distinction that presupposes the truth of the conclusion that is to be established.

561. Chaco Canyon, a settlement of the ancient Anasazi culture in North America, had massive buildings.
It must have been a major Anasazi center.
 Analysis of wood samples shows that some of the timber for the buildings came from the Chuska and San Mateo mountains, 50 miles from Chaco Canyon.
Only a major cultural center would have the organizational power to import timber from 50 miles away.

In the argument given, the two portions in boldface play which of the following roles?

- (A) The first is a premise used to support the argument's main conclusion; the second is the argument's main conclusion.
- (B) The first is the argument's main conclusion; the second is a premise used to support that conclusion.
- (C) The first is one of two premises used to support the argument's main conclusion; the second is the other of those two premises.
- (D) The first is a premise used to support the argument's main conclusion; the second is a premise used to support another conclusion drawn in the argument.
- (E) The first is inferred from another statement in the argument; the second is inferred from the first.

562. The Maxilux car company's design for its new luxury model, the Max 100, included a special design for the tires that was intended to complement the model's image. The winning bid for supplying these tires was submitted by Rubco. Analysts concluded that the bid would only just cover Rubco's costs on the tires, but Rubco executives claim that winning the bid will actually make a profit for the company.

Which of the following, if true, most strongly justifies the claim made by Rubco's executives?

- (A) In any Maxilux model, the spare tire is exactly the same make and model as the tires that are mounted on the wheels.
- (B) Rubco holds exclusive contracts to supply Maxilux with the tires for a number of other models made by Maxilux.
- (C) The production facilities for the Max 100 and those for the tires to be supplied by Rubco are located very near each other.
- (D) When people who have purchased a carefully designed luxury automobile need to replace a worn part of it, they almost invariably replace it with a part of exactly the same make and type.
- (E) When Maxilux awarded the tire contract to Rubco, the only criterion on which Rubco's bid was clearly ahead of its competitors' bids was price.

563. Which of the following most logically completes the passage?

Most bicycle helmets provide good protection for the top and back of the head, but little or no protection for the temple regions on the sides of the head. A study of head injuries resulting from bicycle accidents showed that a large proportion were caused by blows to the temple area. Therefore, if bicycle helmets protected this area, the risk of serious head injury in bicycle accidents would be greatly reduced, especially since _____.

- (A) among the bicyclists included in the study's sample of head injuries, only a very small proportion had been wearing a helmet at the time of their accident
- (B) even those bicyclists who regularly wear helmets have a poor understanding of the degree and kind of protection that helmets afford
- (C) a helmet that included protection for the temples would have to be somewhat larger and heavier than current helmets
- (D) the bone in the temple area is relatively thin and impacts in that area are thus very likely to cause brain injury
- (E) bicyclists generally land on their arm or shoulder when they fall to the side, which reduces the likelihood of severe impacts on the side of the head

564. Which of the following most logically completes the argument?

In a typical year, Innovair's airplanes are involved in 35 collisions while parked or being towed in airports, with a resulting yearly cost of \$1,000,000 for repairs.

To reduce the frequency of ground collisions, Innovair will begin giving its ground crews additional training, at an annual cost of \$500,000. Although this will cut the number of ground collisions by about half at best, the drop in repair costs can be expected to be much greater, since _____.

- (A) most ground collisions happen when ground crews are rushing to minimize the time a delayed airplane spends on the ground
- (B) a ground collision typically occurs when there are no passengers on the airplane
- (C) the additional training will focus on helping ground crews avoid those kinds of ground collisions that cause the most costly damage

- (D) the \$500,000 cost figure for the additional training of ground crews includes the wages that those crews will earn during the time spent in actual training
- (E) most ground collisions have been caused by the least experienced ground-crew members

565. Hunter: **Many people blame hunters alone for the decline in Greenrock National Forest's deer population over the past ten years.** Yet clearly, black bears have also played an important role in this decline. In the past ten years, the forest's protected black bear population has risen sharply, and examination of black bears found dead in the forest during the deer hunting season showed that a number of them had recently fed on deer.

In the hunter's argument, the portion in boldface plays which of the following roles?

- (A) It is the main conclusion of the argument.
- (B) It is a finding that the argument seeks to explain.
- (C) It is an explanation that the argument concludes is correct.
- (D) It provides evidence in support of the main conclusion of the argument.
- (E) It introduces a judgment that the argument opposes.

566. Many agriculturally intensive areas of the world are beginning to encounter water scarcity problems. As a result, many farmers in these areas are likely to reduce their output as the water supply they need in order to maintain production shrinks. However, one group of farmers in such a region plans to increase their production by implementing techniques for water conservation.

Which of the following, if true, would most strongly support the prediction that the group's plan will succeed?

- (A) Farmers that can gain a larger share of the food market in their regions will be better positioned to control more water resources.
- (B) Most agricultural practices in areas with water shortages are water-intensive.
- (C) Other regions of the world not facing water shortages are likely to make up for the reduction in agricultural output.

- (D) Demand for agricultural products in the group's region is not expected to decline.
- (E) More than half the water used for agriculture in the farmers' region is lost to evaporation or leakage from irrigation channels.

567. Physician: The hormone melatonin has shown promise as a medication for sleep disorders when taken in synthesized form. Because the long-term side effects of synthetic melatonin are unknown, however, I cannot recommend its use at this time.

Patient: Your position is inconsistent with your usual practice. You prescribe many medications that you know have serious side effects, so concern about side effects cannot be the real reason you will not prescribe melatonin.

The patient's argument is flawed because it fails to consider that

- (A) the side effects of synthetic melatonin might be different from those of naturally produced melatonin
- (B) it is possible that the physician does not believe that melatonin has been conclusively shown to be effective
- (C) sleep disorders, if left untreated, might lead to serious medical complications
- (D) the side effects of a medication can take some time to manifest themselves
- (E) known risks can be weighed against known benefits, but unknown risks cannot

568. Hollywood restaurant is replacing some of its standard tables with tall tables and stools. The restaurant already fills every available seat during its operating hours, and the change in seating arrangements will not result in an increase in the restaurant's seating capacity. Nonetheless, the restaurant's management expects revenue to increase as a result of the seating change without any concurrent change in menu, prices, or operating hours.

Which of the following, if true, provides the best reason for the expectation?

- (A) One of the taller tables takes up less floor space than one of the standard tables.
- (B) Diners seated on stools typically do not linger over dinner as long as diners seated at standard tables.
- (C) Since the restaurant will replace only some of its standard tables, it can continue to accommodate customers who do not care for the taller tables.
- (D) Few diners are likely to avoid the restaurant because of the new seating arrangement.
- (E) The standard tables being replaced by tall tables would otherwise have to be replaced with new standard tables at a greater expense.

569. A major network news organization experienced a drop in viewership in the week following the airing of a controversial report on the economy. The network also received a very large number of complaints regarding the report. The network, however, maintains that negative reactions to the report had nothing to do with its loss of viewers.

Which of the following, if true, most strongly supports the network's position?

- (A) The other major network news organizations reported similar reductions in viewership during the same week.
- (B) The viewers who registered complaints with the network were regular viewers of the news organization's programs.
- (C) Major network news organizations publicly attribute drops in viewership to their own reports only when they receive complaints about those reports.
- (D) This was not the first time that this network news organization has aired a controversial report on the economy that has inspired viewers to complain to the network.
- (E) Most network news viewers rely on network news broadcasts as their primary source of information regarding the economy.

570. Only a reduction of 10 percent in the number of scheduled flights using Greentown's airport will allow the delays that are so common there to be avoided. Hevelia airstrip, 40 miles away, would, if upgraded and expanded, be an attractive alternative for fully 20 percent of the passengers using Greentown airport. Nevertheless, experts reject the claim that turning Hevelia into a full-service airport would end the chronic delays at Greentown.

Which of the following, if true, most helps to justify the experts' position?

- (A) Turning Hevelia into a full-service airport would require not only substantial construction at the airport itself, but also the construction of new access highways.
- (B) A second largely undeveloped airstrip close to Greentown airport would be a more attractive alternative than Hevelia for many passengers who now use Greentown.
- (C) Hevelia airstrip lies in a relatively undeveloped area but would, if it became a full-service airport, be a magnet for commercial and residential development.
- (D) If an airplane has to wait to land, the extra jet fuel required adds significantly to the airline's costs.
- (E) Several airlines use Greentown as a regional hub, so that most flights landing at Greentown have many passengers who then take different flights to reach their final destinations.

571. For similar cars and comparable drivers, automobile insurance for collision damage has always cost more in Greatport than in Fairmont. Police studies, however, show that cars owned by Greatport residents are, on average, slightly less likely to be involved in a collision than cars in Fairmont. Clearly, therefore, insurance companies are making a greater profit on collision-damage insurance in Greatport than in Fairmont.

In evaluating the argument, it would be most useful to compare

- (A) the level of traffic congestion in Greatport with the level of traffic congestion in Fairmont
- (B) the cost of repairing collision damage in Greatport with the cost of repairing collision damage in Fairmont

- (C) the rates Greatport residents pay for other forms of insurance with the rates paid for similar insurance by residents of Fairmont
- (D) the condition of Greatport's roads and streets with the condition of Fairmont's roads and streets
- (E) the cost of collision-damage insurance in Greatport and Fairmont with that in other cities

572. The air quality board recently informed Coffee Roast, a small coffee roasting firm, of a complaint regarding the smoke from its roaster. Recently enacted air quality regulations require machines roasting more than 10 pounds of coffee to be equipped with expensive smoke-dissipating afterburners. The firm, however, roasts only 8 pounds of coffee at a time. Nevertheless, the company has decided to purchase and install an afterburner.

Which of the following, if true, most strongly supports the firm's decision?

- (A) Until settling on the new air quality regulations, the board had debated whether to require afterburners for machines roasting more than 5 pounds of coffee at a time.
- (B) Coffee roasted in a machine equipped with an afterburner has its flavor subtly altered.
- (C) The cost to the firm of an afterburner is less than the cost of replacing its roaster with a smaller one.
- (D) Fewer complaints are reported in areas that maintain strict rules regarding afterburners.
- (E) The firm has reason to fear that negative publicity regarding the complaints could result in lost sales.

573. The tulu, a popular ornamental plant, does not reproduce naturally, and is only bred and sold by specialized horticultural companies. Unfortunately, the tulu is easily devastated by a contagious fungal rot. The government ministry plans to reassure worried gardeners by requiring all tulu plants to be tested for fungal rot before being sold. However, infected plants less than 30 weeks old have generally not built up enough fungal rot in their systems to be detected reliably. And many tulu plants are sold before they are 24 weeks old.

Which of the following, if performed by the government ministry, could logically be expected to overcome the problem with their plan to test for the fungal rot?

- (A) Releasing a general announcement that tulu plants less than 30 weeks old cannot be effectively tested for fungal rot
- (B) Requiring all tulu plants less than 30 weeks old to be labeled as such
- (C) Researching possible ways to test tulu plants less than 24 weeks old for fungal rot
- (D) Ensuring that tulu plants not be sold before they are 30 weeks old
- (E) Quarantining all tulu plants from horticultural companies at which any case of fungal rot has been detected until those tulu plants can be tested for fungal rot

574. People who do regular volunteer work tend to live longer, on average, than people who do not. It has been found that “doing good,” a category that certainly includes volunteer work, releases endorphins, the brain’s natural opiates, which induce in people a feeling of well-being. Clearly, there is a connection: Regular releases of endorphins must in some way help to extend people’s lives.

Which of the following, if true, most seriously undermines the force of the evidence given as support for the hypothesis that endorphins promote longevity?

- (A) People who do regular volunteer work are only somewhat more likely than others to characterize the work they do for a living as “doing good.”
- (B) Although extremely high levels of endorphins could be harmful to health, such levels are never reached as a result of the natural release of endorphins.
- (C) There are many people who have done some volunteer work but who do not do such work regularly.
- (D) People tend not to become involved in regular volunteer work unless they are healthy and energetic to begin with.
- (E) Releases of endorphins are responsible for the sense of well-being experienced by many long-distance runners while running.

575. In Mernia commercial fossil hunters often sell important fossils they have found, not to universities or museums, but to individual collectors, who pay much better but generally do not allow researchers access to their collections. To increase the number of fossils

available for research, some legislators propose requiring all fossils that are found in Mernia to be sold only to universities or museums.

Which of the following, if true, most strongly indicates that the legislators’ proposal will fail to achieve its goal?

- (A) Some fossil hunters in Mernia are not commercial fossil hunters, but rather are amateurs who keep the fossils that they find.
- (B) Most fossils found in Mernia are common types that have little scientific interest.
- (C) Commercial fossil hunters in Mernia currently sell some of the fossils they find to universities and museums.
- (D) Many universities in Mernia do not engage in fossil research.
- (E) Most fossils are found by commercial fossil hunters, and they would give up looking for fossils if they were no longer allowed to sell to individual collectors.

576. The Eurasian ruffe, a fish species inadvertently introduced into North America’s Great Lakes in recent years, feeds on the eggs of lake whitefish, a native species, thus threatening the lakes’ natural ecosystem. To help track the ruffe’s spread, government agencies have produced wallet-sized cards about the ruffe. The cards contain pictures of the ruffe and explain the danger they pose; the cards also request anglers to report any ruffe they catch.

Which of the following, if true, would provide most support for the prediction that the agencies’ action will have its intended effect?

- (A) The ruffe has spiny fins that make it unattractive as prey.
- (B) Ruffe generally feed at night, but most recreational fishing on the Great Lakes is done during daytime hours.
- (C) Most people who fish recreationally on the Great Lakes are interested in the preservation of the lake whitefish because it is a highly prized game fish.
- (D) The ruffe is one of several nonnative species in the Great Lakes whose existence threatens the survival of lake whitefish populations there.
- (E) The bait that most people use when fishing for whitefish on the Great Lakes is not attractive to ruffe.

577. Which of the following most logically completes the argument below?

Although the number of large artificial satellites orbiting the Earth is small compared to the number of small pieces of debris in orbit, the large satellites interfere more seriously with telescope observations because of the strong reflections they produce. Because many of those large satellites have ceased to function, the proposal has recently been made to eliminate interference from nonfunctioning satellites by exploding them in space. This proposal, however, is ill conceived, since _____.

- (A) many nonfunctioning satellites remain in orbit for years
- (B) for satellites that have ceased to function, repairing them while they are in orbit would be prohibitively expensive
- (C) there are no known previous instances of satellites' having been exploded on purpose
- (D) the only way to make telescope observations without any interference from debris in orbit is to use telescopes launched into extremely high orbits around the Earth
- (E) a greatly increased number of small particles in Earth's orbit would result in a blanket of reflections that would make certain valuable telescope observations impossible

578. Thyrian lawmaker: Thyria's Cheese Importation Board inspects all cheese shipments to Thyria and rejects shipments not meeting specified standards. Yet only 1 percent is ever rejected. Therefore, since the health consequences and associated economic costs of not rejecting that 1 percent are negligible, whereas the board's operating costs are considerable, for economic reasons alone the board should be disbanded.

Consultant: I disagree. The threat of having their shipments rejected deters many cheese exporters from shipping substandard product.

The consultant responds to the lawmaker's argument by

- (A) rejecting the lawmaker's argument while proposing that the standards according to which the board inspects imported cheese should be raised
- (B) providing evidence that the lawmaker's argument has significantly overestimated the cost of maintaining the board

- (C) objecting to the lawmaker's introducing into the discussion factors that are not strictly economic
- (D) pointing out a benefit of maintaining the board, which the lawmaker's argument has failed to consider
- (E) shifting the discussion from the argument at hand to an attack on the integrity of the cheese inspectors

579. The growing popularity of computer-based activities was widely expected to result in a decline in television viewing, since it had been assumed that people lack sufficient free time to maintain current television viewing levels while spending increasing amounts of free time on the computer. That assumption, however, is evidently false: In a recent mail survey concerning media use, a very large majority of respondents who report increasing time spent per week using computers report no change in time spent watching television.

Which of the following would it be most useful to determine in order to evaluate the argument?

- (A) Whether a large majority of the survey respondents reported watching television regularly
- (B) Whether the amount of time spent watching television is declining among people who report that they rarely or never use computers
- (C) Whether the type of television programs a person watches tends to change as the amount of time spent per week using computers increases
- (D) Whether a large majority of the computer owners in the survey reported spending increasing amounts of time per week using computers
- (E) Whether the survey respondents' reports of time spent using computers included time spent using computers at work

580. Although the school would receive financial benefits if it had soft drink vending machines in the cafeteria, we should not allow them. Allowing soft drink machines there would not be in our students' interest. If our students start drinking more soft drinks, they will be less healthy.

The argument depends on which of the following?

- (A) If the soft drink vending machines were placed in the cafeteria, students would consume more soft drinks as a result.
- (B) The amount of soft drinks that most students at the school currently drink is not detrimental to their health.

- (C) Students are apt to be healthier if they do not drink soft drinks at all than if they just drink small amounts occasionally.
- (D) Students will not simply bring soft drinks from home if the soft drink vending machines are not placed in the cafeteria.
- (E) The school's primary concern should be to promote good health among its students.

581. Many athletes inhale pure oxygen after exercise in an attempt to increase muscular reabsorption of oxygen. Measured continuously after exercise, however, the blood lactate levels of athletes who inhale pure oxygen are practically identical, on average, to those of athletes who breathe normal air. The lower the blood lactate level is, the higher the muscular reabsorption of oxygen is.

If the statements above are all true, they most strongly support which of the following conclusions?

- (A) Athletes' muscular reabsorption of oxygen is not increased when they inhale pure oxygen instead of normal air.
- (B) High blood lactate levels cannot be reduced.
- (C) Blood lactate levels are a poor measure of oxygen reabsorption by muscles.
- (D) The amount of oxygen reabsorbed by an athlete's muscles always remains constant.
- (E) The inhaling of pure oxygen has no legitimate role in athletics.

582. Which of the following most logically completes the argument?

Sviatovin is a medieval Moringian text whose author and exact date of composition are unknown. However, the events in the life of Prince Sviatov that the text describes occurred in 1165, and in the diagram of Sviatov's family that accompanies the text his father, who died in 1167, is identified as still living. Thus *Sviatovin* must have been written between 1165 and 1167, assuming that _____.

- (A) the life of Prince Sviatov is not the subject of any other medieval Moringian texts
- (B) the author of *Sviatovin* intended it to provide as accurate a report about Prince Sviatov's exploits as possible
- (C) the diagram accurately represents the composition of Sviatov's family at the time *Sviatovin* was written
- (D) *Sviatovin* is the earliest Moringian text whose composition can be dated to within a few years
- (E) *Sviatovin* was not written by Sviatov's father himself

583. A study of ticket sales at a summer theater festival found that people who bought tickets to individual plays had a no-show rate of less than 1 percent, while those who paid in advance for all ten plays being performed that summer had a no-show rate of nearly 30 percent. This may be at least in part because the greater the awareness customers retain about the cost of an item, the more likely they are to use it.

Which of the following would, if true, best serve as an alternative explanation of the results of the study?

- (A) The price per ticket was slightly cheaper for those who bought all ten tickets in advance.
- (B) Many people who attended the theater festival believed strongly that they should support it financially.
- (C) Those who attended all ten plays became eligible for a partial refund.
- (D) Usually, people who bought tickets to individual plays did so immediately prior to each performance that they attended.
- (E) People who arrived just before the performance began could not be assured of obtaining seats in a preferred location.

584. Although there is no record of poet Edmund Spenser's parentage, we do know that as a youth Spenser attended the Merchant Tailors' School in London for a period between 1560 and 1570. Records from this time indicate that the Merchant Tailors' Guild then had only three members named Spenser: Robert Spenser, listed as a gentleman; Nicholas Spenser, elected the Guild's Warden in 1568; and John Spenser, listed as a "journeyman cloth-maker." Of these, the last was likely the least affluent of the three—and most likely Edmund's father, since school accounting records list Edmund as a scholar who attended the school at a reduced fee.

Which of the following is an assumption on which the argument depends?

- (A) Anybody in sixteenth-century London who made clothing professionally would have had to be a member of the Merchant Tailors' Guild.
- (B) The fact that Edmund Spenser attended the Merchant Tailors' School did not necessarily mean that he planned to become a tailor.
- (C) No member of the Guild could become Guild warden in sixteenth-century London unless he was a gentleman.
- (D) Most of those whose fathers were members of the Merchant Tailors' Guild were students at the Merchant Tailors' School.
- (E) The Merchant Tailors' School did not reduce its fees for the children of the more affluent Guild members.

585. Trancorp currently transports all its goods to Burland Island by truck. The only bridge over the channel separating Burland from the mainland is congested, and trucks typically spend hours in traffic. Trains can reach the channel more quickly than trucks, and freight cars can be transported to Burland by barges that typically cross the channel in an hour. Therefore, to reduce shipping time, Trancorp plans to switch to trains and barges to transport goods to Burland.

Which of the following would be most important to know in determining whether Trancorp's plan, if implemented, is likely to achieve its goal?

- (A) Whether transportation by train and barge would be substantially less expensive than transportation by truck
- (B) Whether there are boats that can make the trip between the mainland and Burland faster than barges can

- (C) Whether loading the freight cars onto barges is very time consuming
- (D) Whether the average number of vehicles traveling over the bridge into Burland has been relatively constant in recent years
- (E) Whether most trucks transporting goods into Burland return to the mainland empty

586. Rainwater contains hydrogen of a heavy form called deuterium. The deuterium content of wood reflects the deuterium content of rainwater available to trees during their growth. Wood from trees that grew between 16,000 and 24,000 years ago in North America contains significantly more deuterium than wood from trees growing today. But water trapped in several North American caves that formed during that same early period contains significantly less deuterium than rainwater in North America contains today.

Which of the following, if true, most helps to reconcile the two findings?

- (A) There is little deuterium in the North American caves other than the deuterium in the water trapped there.
- (B) Exposure to water after a tree has died does not change the deuterium content of the wood.
- (C) Industrialization in North America over the past 100 years has altered the deuterium content of rain.
- (D) Trees draw on shallow groundwater from rain that falls during their growth, whereas water trapped in caves may have fallen as rainwater thousands of years before the caves formed.
- (E) Wood with a high deuterium content is no more likely to remain preserved for long periods than is wood with a low deuterium content.

587. Which of the choices most logically completes the following argument?

NowNews, although still the most popular magazine covering cultural events in Kalopolis, has recently suffered a significant drop in advertising revenue because of falling circulation. Many readers have begun buying a competing magazine that, at 50 cents per copy, costs less than *NowNews* at \$1.50 per copy. In order to boost circulation and thus increase advertising revenue, *NowNews's* publisher

has proposed making it available at no charge. However, this proposal has a serious drawback, since _____.

- (A) those Kalopolis residents with the greatest interest in cultural events are regular readers of both magazines.
- (B) one reason *NowNews*'s circulation fell was that its competitor's reporting on cultural events was superior.
- (C) the newsstands and stores that currently sell *NowNews* will no longer carry it if it is being given away for free.
- (D) at present, 10 percent of the total number of copies of each issue of *NowNews* are distributed free to students on college campuses in the Kalopolis area.
- (E) *NowNews*'s competitor would begin to lose large amounts of money if it were forced to lower its cover price.

588. Archaeologist: Researchers excavating a burial site in Cyprus found a feline skeleton lying near a human skeleton. Both skeletons were in the same sediment at the same depth and equally well-preserved, suggesting that the feline and human were buried together about 9,500 years ago. This shows that felines were domesticated around the time farming began, when they would have been useful in protecting stores of grain from mice.

Which of the following, if true, would most seriously weaken the archaeologist's argument?

- (A) Archaeologists have not found any remains of stores of grain in the immediate vicinity of the burial site.
- (B) The burial site in Cyprus is substantially older than any other known burial site in which a feline skeleton and a human skeleton appear to have been buried together.
- (C) Paintings found near the burial site seem to show people keeping felines as domestic companions, but do not show felines hunting mice.

- (D) In Cyprus, there are many burial sites dating from around 9,500 years ago in which the remains of wild animals appear to have been buried alongside human remains.
- (E) Before felines were domesticated, early farmers had no effective way to protect stores of grain from mice.

589. The heavy traffic in Masana is a growing drain on the city's economy—the clogging of the streets of the central business district alone cost the economy more than \$1.2 billion over the past year. In order to address this problem, officials plan to introduce congestion pricing, by which drivers would pay to enter the city's most heavily trafficked areas during the busiest times of the day.

Which of the following, if true, would most strongly indicate that the plan will be a success?

- (A) Approximately one-fifth of the vehicles in the central business district are in transit from one side of the city to the other.
- (B) Planners expect that, without congestion pricing, traffic in Masana is likely to grow by 6 percent in the next five years.
- (C) In other urban areas, congestion pricing has strongly encouraged carpooling (sharing of rides by private commuters).
- (D) Several studies have shown that a reduction in traffic of 15 percent in Masana could result in 5,500 or more new jobs.
- (E) Over 30 percent of the vehicles in the city's center are occupied by more than one person.

590. Economist: The most economically efficient way to reduce emissions of air pollutants is to tax them in proportion to the damage they are likely to cause. But in Country Y, many serious pollutants are untaxed and unregulated, and policy makers strongly oppose new taxes. Therefore, the best way to achieve a reduction in air pollutant emissions in Country Y would be to institute fixed upper limits on them.

Which of the following is an assumption of the economist's argument?

- (A) Policy makers in Country Y oppose all new taxes equally strongly, regardless of any benefits they may provide.
- (B) Country Y's air pollutant emissions would not fall significantly if they were taxed in proportion to the damage they are likely to cause.
- (C) Policy makers in Country Y strongly favor reductions in air pollutant emissions.
- (D) Country Y's policy makers believe that air pollutant emissions should be reduced with maximum economic efficiency.
- (E) Policy makers in Country Y do not oppose setting fixed upper limits on air pollutant emissions as strongly as they oppose new taxes.

591. Humans get Lyme disease from infected ticks. Ticks get infected by feeding on animals with Lyme disease, but the ease of transmission from host animal to tick varies. With most species of host animal, transmission of Lyme disease to ticks is extremely rare, but white-footed mice are an exception, readily passing Lyme disease to ticks. And white-footed mouse populations greatly expand, becoming the main food source for ticks, in areas where biodiversity is in decline.

The information in the passage most strongly supports which of the following?

- (A) In areas where many humans are infected with Lyme disease, the proportion of ticks infected with Lyme disease is especially high.
- (B) Very few animals that live in areas where there are no white-footed mice are infected with Lyme disease.
- (C) Humans are less at risk of contracting Lyme disease in areas where biodiversity is high.

- (D) Ticks feed on white-footed mice only when other host species are not available to them.
- (E) The greater the biodiversity of an area, the more likely any given host animal in that area is to pass Lyme disease to ticks.

592. Many industrialized nations are trying to reduce atmospheric concentrations of carbon dioxide, a gas released by the burning of fossil fuels. One proposal is to replace conventional cement, which is made with calcium carbonate, by a new "eco-cement." This new cement, made with magnesium carbonate, absorbs large amounts of carbon dioxide when exposed to the atmosphere. Therefore, using eco-cement for new concrete building projects will significantly help reduce atmospheric concentrations of carbon dioxide.

Which of the following, if true, most strengthens the argument?

- (A) The cost of magnesium carbonate, currently greater than the cost of calcium carbonate, probably will fall as more magnesium carbonate is used in cement manufacture.
- (B) Eco-cement is strengthened when absorbed carbon dioxide reacts with the cement.
- (C) Before the development of eco-cement, magnesium-based cement was considered too susceptible to water erosion to be of practical use.
- (D) The manufacture of eco-cement uses considerably less fossil fuel per unit of cement than the manufacture of conventional cement does.
- (E) Most building-industry groups are unaware of the development or availability of eco-cement.

593. Which of the following most logically completes the argument below?

Davison River farmers are currently deciding between planting winter wheat this fall or spring wheat next spring. Winter wheat and spring wheat are usually about equally profitable. Because of new government restrictions on the use of Davison River water for irrigation, per acre yields for winter wheat, though not for spring wheat, would be much lower than average. Therefore, planting spring wheat will be more profitable than planting winter wheat, since _____.

- (A) the smaller-than-average size of a winter wheat harvest this year would not be compensated for by higher winter wheat prices
- (B) new crops of spring wheat must be planted earlier than the time at which standing crops of winter wheat are ready to be harvested
- (C) the spring wheat that farmers in the Davison River region plant is well adapted to the soil of the region
- (D) spring wheat has uses that are different from those of winter wheat
- (E) planting spring wheat is more profitable than planting certain other crops, such as rye

594. Advertisement: When your car's engine is running at its normal operating temperature, any major brand of motor oil will protect it about as well as Tuff does. When the engine is cold, it is a different story: Tuff motor oil flows better at lower temperatures than its major competitors do. So, if you want your car's engine to have maximum protection, you should use Tuff.

Which of the following, if true, most strengthens the argument in the advertisement?

- (A) Tuff motor oil provides above-average protection for engines that happen to overheat.
- (B) Tuff motor oil is periodically supplied free of charge to automobile manufacturers to use in factory-new cars.
- (C) Tuff motor oil's share of the engine oil market peaked three years ago.
- (D) Tuff motor oil, like any motor oil, is thicker and flows less freely at cold temperatures than at hot temperatures.
- (E) Tuff motor oil is manufactured at only one refinery and shipped from there to all markets.

595. *The Testament of William Thorpe* was published around 1530 as an appendix to Thorpe's longer *Examination*. Many scholars, however, doubt the attribution of the *Testament* to Thorpe because, whereas the *Examination* is dated 1406, the *Testament* is dated 1460. One scholar has recently argued that the 1460 date be amended to 1409, based on the observation that when these numbers are expressed as Roman numerals, MCCCCLX and MCCCCIX, it becomes easy to see how the dates might have become confused through scribal error.

Which of the following, if true, would most support the scholar's hypothesis concerning the date of the *Testament*?

- (A) The sole evidence that historians have had that William Thorpe died no earlier than 1460 was the presumed date of publication of the *Testament*.
- (B) In the preface to the 1530 publication, the editor attributes both works to William Thorpe.
- (C) Few writers in fifteenth-century England marked dates in their works using only Roman numerals.
- (D) The *Testament* alludes to a date, "Friday, September 20," as apparently contemporaneous with the writing of the *Testament*, and September 20 fell on a Friday in 1409 but not in 1460.
- (E) The *Testament* contains few references to historical events that occurred later than 1406.

596. To reduce productivity losses from employees calling in sick, Corporation X implemented a new policy requiring employees to come into work unless they were so sick that they had to go to a doctor. But a year after the policy was implemented, a study found that Corporation X's overall productivity losses due to reported employee illnesses had increased.

Which of the following, if true, would best explain why the policy produced the reverse of its intended effect?

- (A) After the policy was implemented, employees more frequently went to the doctor when they felt sick.
- (B) Before the policy was implemented, employees who were not sick at all often called in sick.
- (C) Employees coming into work when sick often infect many of their coworkers.
- (D) Unusually few employees became genuinely sick during the year after the policy was implemented.
- (E) There are many other factors besides employee illness that can adversely affect productivity.

597. Advertising by mail has become much less effective, with fewer consumers responding. Because consumers are increasingly overwhelmed by the sheer amount of junk mail they receive, most discard almost all offers without considering them. Thus, an effective way for corporations to improve response rates would be to more carefully target the individuals to whom they mail advertising, thereby cutting down on the amount of junk mail each consumer receives.

Which of the following, if true, would most support the recommendation above?

- (A) There are cost-effective means by which corporations that currently advertise by mail could improve response rates.
- (B) Many successful corporations are already carefully targeting the individuals to whom they mail advertising.
- (C) Any consumer who, immediately after receiving an advertisement by mail, merely glances at it, is very likely to discard it.
- (D) Improvements in the quality of the advertising materials used in mail that is carefully targeted to individuals can improve the response rate for such mail.
- (E) Response rates to carefully targeted advertisements by mail are considerably higher, on average, than response rates to most other forms of advertising.

598. Petrochemical industry officials have said that the extreme pressure exerted on plant managers during the last five years to improve profits by cutting costs has done nothing to impair the industry's ability to operate safely. However, environmentalists contend that the recent rash of serious oil spills and accidents at petrochemical plants is traceable to cost-cutting measures.

Which of the following, if true, would provide the strongest support for the position held by industry officials?

- (A) The petrochemical industry benefits if accidents do not occur, since accidents involve risk of employee injury as well as loss of equipment and product.
- (B) Petrochemical industry unions recently demanded that additional money be spent on safety and environmental protection measures, but the unions readily abandoned those demands in exchange for job security.

- (C) Despite major cutbacks in most other areas of operation, the petrochemical industry has devoted more of its resources to environmental and safety measures in the last five years than in the preceding five years.
- (D) There is evidence that the most damaging of the recent oil spills would have been prevented had cost-cutting measures not been instituted.
- (E) Both the large fines and the adverse publicity generated by the most recent oil spill have prompted the petrochemical industry to increase the resources devoted to oil-spill prevention.

599. Economist: The price of tap water in our region should be raised drastically. **Supplies in local freshwater reservoirs have been declining for years** because water is being used faster than it can be replenished. Since the price of tap water has been low, **few users have bothered to adopt even easy conservation measures**.

The two sections in boldface play which of the following roles in the economist's argument?

- (A) The first is a conclusion for which support is provided, and which in turn supports the main conclusion; the second is the main conclusion.
- (B) The first is an observation for which the second provides an explanation; the second is the main conclusion but not the only conclusion.
- (C) The first is a premise supporting the argument's main conclusion; so is the second.
- (D) The first is the only conclusion; the second provides an explanation for the first.
- (E) The first is the main conclusion; the second is a conclusion for which support is provided, and which in turn supports the first.

600. Politician: Hybrid cars use significantly less fuel per kilometer than nonhybrids. And fuel produces air pollution, which contributes to a number of environmental problems. Motorists can save money by driving cars that are more fuel efficient, and they will be encouraged to drive hybrid cars if we make them aware of that fact. Therefore, we can help reduce the total amount of pollution emitted by cars in this country by highlighting this advantage of hybrid cars.

Which of the following, if true, would most indicate a vulnerability of the politician's argument?

- (A) People with more fuel-efficient cars typically drive more than do those with less fuel-efficient cars.
- (B) Not all air pollution originates from automobiles.
- (C) Hybrid cars have already begun to gain popularity.
- (D) Fuel-efficient alternatives to hybrid cars will likely become available in the future.
- (E) The future cost of gasoline and other fuel cannot be predicted with absolute precision or certainty.

601. Which of the following most logically completes the passage?

A recent government study links the high rates of respiratory ailments in Groverston to airborne pollutants released by the Woodco plywood manufacturing plant there. To address the problem, the government imposed strict regulations on emissions which will go into effect in four years.

Although Woodco plans to cut its emissions in half two years ahead of schedule, it is unlikely that the rate of respiratory ailments will decline before the regulations go into effect, since _____.

- (A) the number of facilities capable of treating respiratory ailments is not likely to increase
- (B) reducing emissions even further than planned would necessitate decreasing production at Woodco
- (C) it is difficult to make accurate, long-term predictions about emissions
- (D) not all respiratory ailments are caused by airborne pollutants
- (E) three new plywood manufacturing plants are about to go into production in Groverston

602. One summer, floods covered low-lying garlic fields situated in a region with a large mosquito population. Since mosquitoes lay their eggs in standing water, flooded fields would normally attract mosquitoes, yet no mosquitoes were found in the fields. Diallyl sulfide, a major component of garlic, is known to repel several species of insects, including mosquitoes, so it is likely that diallyl sulfide from the garlic repelled the mosquitoes.

Which of the following, if true, most strengthens the argument?

- (A) Diallyl sulfide is also found in onions but at concentrations lower than in garlic.
- (B) The mosquito population of the region as a whole was significantly smaller during the year in which the flooding took place than it had been in previous years.
- (C) By the end of the summer, most of the garlic plants in the flooded fields had been killed by waterborne fungi.
- (D) Many insect species not repelled by diallyl sulfide were found in the flooded garlic fields throughout the summer.
- (E) Mosquitoes are known to be susceptible to toxins in plants other than garlic, such as marigolds.

603. Which of the following most logically completes the passage?

Pecan growers get a high price for their crop when pecans are comparatively scarce, but the price drops sharply when pecans are abundant. Thus, in high-yield years, growers often hold back part of their crop in refrigerated warehouses for one or two years, hoping for higher prices in the future. This year's pecan crop was the smallest in five years. It is nonetheless quite possible that a portion of this year's crop will be held back, since _____.

- (A) each of the last two years produced recordbreaking pecan yields
- (B) the quality of this year's pecan crop is no worse than the quality of the pecan crops of the previous five years
- (C) pecan prices have not been subject to sharp fluctuations in recent years
- (D) for some pecan growers, this year's crop was no smaller than last year's
- (E) the practice of holding back part of one year's crop had not yet become widespread the last time the pecan crop was as small as it was this year

604. Coffee shop owner: A large number of customers will pay at least the fair market value for a cup of coffee, even if there is no formal charge. Some will pay more than this out of appreciation of the trust that is placed in them. And our total number of customers is likely to increase. We could therefore improve our net cash flow by implementing an honor system in which customers pay what they wish for coffee by depositing money in a can.

Manager: We're likely to lose money on this plan. Many customers would cheat the system, paying a very small sum or nothing at all.

Which of the following, if true, would best support the owner's plan, in light of the manager's concern?

- (A) The new system, if implemented, would increase the number of customers.
- (B) By roasting its own coffee, the shop has managed to reduce the difficulties (and cost) of maintaining an inventory of freshly roasted coffee.
- (C) Many customers stay in the cafe for long stretches of time.
- (D) The shop makes a substantial profit from pastries and other food bought by the coffee drinkers.
- (E) No other coffee shop in the area has such a system.

605. Which of the following most logically completes the argument?

By competing with rodents for seeds, black ants help control rodent populations that pose a public health risk. However, a very aggressive species of black ant, the Loma ant, which has recently invaded a certain region, has a venomous sting that is often fatal to humans. Therefore, the planned introduction into that region of ant flies, which prey on Loma ants, would benefit public health, since _____.

- (A) ant flies do not attack black ants other than Loma ants
- (B) Loma ants are less effective than many bird species in competing with rodents for seeds
- (C) certain other species of black ants are more effective than Loma ants in competing with rodents for seeds
- (D) the sting of Loma ants can also be fatal to rodents
- (E) some pesticides that could be used to control Loma ants are harmful to the environment

606. Journalist: In physics journals, the number of articles reporting the results of experiments involving particle accelerators was lower last year than it had been in previous years. Several of the particle accelerators at major research institutions were out of service the year before last for repairs, so it is likely that the low number of articles was due to the decline in availability of particle accelerators.

Which of the following, if true, most seriously undermines the journalist's argument?

- (A) Every article based on experiments with particle accelerators that was submitted for publication last year actually was published.
- (B) The average time scientists must wait for access to a particle accelerator has declined over the last several years.
- (C) The number of physics journals was the same last year as in previous years.
- (D) Particle accelerators can be used for more than one group of experiments in any given year.
- (E) Recent changes in the editorial policies of several physics journals have decreased the likelihood that articles concerning particle-accelerator research will be accepted for publication.

607. Birds have been said to be descended from certain birdlike dinosaur species with which they share distinctive structural features. The fossil record, however, shows that this cannot be so, since there are bird fossils that are much older than the earliest birdlike dinosaur fossils that have been found.

Which of the following is an assumption on which the argument relies?

- (A) The birdlike dinosaurs have no living descendants.
- (B) There are no flightless dinosaur species that have the distinctive structural features shared by birds and birdlike dinosaurs.
- (C) There are no birdlike dinosaur fossils that are older than the bird fossils but have not yet been unearthed.
- (D) It could not have been the case that some birds were descended from one of the birdlike dinosaur species and other birds from another.
- (E) Birds cannot have been descended from dinosaur species with which the birds do not share the distinctive structural features.

608. City council member: Demand for electricity has been increasing by 1.5 percent a year, and there simply is no more space to build additional power plants to meet future demand increases. We must therefore begin to curtail usage, which is why I propose passing ordinances requiring energy-conservation measures in all city departments.

The city council member's proposal assumes which of the following?

- (A) Existing power plants do not have the capacity to handle all of the projected increase in demand for electricity.
- (B) No city departments have implemented energy-conservation measures voluntarily.
- (C) Passing ordinances designed to curtail electricity usage will not have negative economic consequences for the city.
- (D) Residential consumers are not responsible for the recent increases in demand for electricity.
- (E) City departments that successfully conserve energy will set a good example for residential and industrial consumers of electricity.

609. Which of the following most logically completes the argument below?

Using broad-spectrum weed killers on weeds that are competing with crops for sunlight, water, and nutrients presents a difficulty: how to keep the crop from being killed along with the weeds. For at least some food crops, specially treated seed that produces plants resistant to weed killers is under development. This resistance wears off as the plants mature. Therefore, the special seed treatment will be especially useful for plants that _____.

- (A) produce their crop over an extended period of time, as summer squash does
- (B) produce large seeds that are easy to treat individually, as corn and beans do
- (C) provide, as they approach maturity, shade dense enough to keep weeds from growing

- (D) are typically grown in large tracts devoted to a single crop
- (E) are cultivated specifically for the seed they produce rather than for their leaves or roots

610. Previously, Autoco designed all of its cars itself and then contracted with specialized parts suppliers to build parts according to its specifications. Now it plans to include its suppliers in designing the parts they are to build. Since many parts suppliers have more designers with specialized experience than Autoco has, Autoco expects this shift to reduce the overall time and cost of the design of its next new car.

Which of the following, if true, most strongly supports Autoco's expectation?

- (A) When suppliers provide their own designs, Autoco often needs to modify its overall design.
- (B) In order to provide designs for Autoco, several of the parts suppliers will have to add to their existing staffs of designers.
- (C) Parts and services provided by outside suppliers account for more than 50 percent of Autoco's total costs.
- (D) When suppliers built parts according to specifications provided by Autoco, the suppliers competed to win contracts.
- (E) Most of Autoco's suppliers have on hand a wide range of previously prepared parts designs that can readily be modified for a new car.

611. In Stenland, many workers have been complaining that they cannot survive on minimum wage, the lowest wage an employer is permitted to pay. The government is proposing to raise the minimum wage. Many employers who pay their workers the current minimum wage argue that if it is raised, unemployment will increase because they will no longer be able to afford to employ as many workers.

Which of the following, if true in Stenland, most strongly supports the claim that raising the minimum wage there will not have the effects that the employers predict?

- (A) For any position with wages below a living wage, the difficulty of finding and retaining employees adds as much to employment costs as would raising wages.
- (B) Raising the minimum wage does not also increase the amount employers have to contribute in employee benefits.
- (C) When inflation is taken into account, the proposed new minimum wage is not as high as the current one was when it was introduced.
- (D) Many employees currently being paid wages at the level of the proposed new minimum wage will demand significant wage increases.
- (E) Many employers who pay some workers only the minimum wage also pay other workers wages that are much higher than the minimum.

612. Which of the following most logically completes the argument?

The attribution of the choral work *Lacrimae* to the composer Pescard (1400–1474) has been regarded as tentative, since it was based on a single treatise from the early 1500s that named Pescard as the composer. Recently, several musical treatises from the late 1500s have come to light, all of which name Pescard as the composer of *Lacrimae*. Unfortunately, these newly discovered treatises lend no support to the attribution of *Lacrimae* to Pescard, since _____.

- (A) the treatise from the early 1500s misidentifies the composers of some of the musical works it considers
- (B) the author of the treatise from the early 1500s had no very strong evidence on which to base the identification of Pescard as the composer of *Lacrimae*

- (C) there are works that can conclusively be attributed to Pescard that are not even mentioned in the treatise from the early 1500s
- (D) the later treatises probably had no source for their attribution other than the earlier treatise
- (E) no known treatises from the 1600s identify Pescard as the composer of *Lacrimae*

613. When trying to identify new technologies that promise to transform the marketplace, market researchers survey the managers of those companies that are developing new technologies. Such managers have an enormous stake in succeeding, so they invariably overstate the potential of their new technologies. Surprisingly, however, market researchers typically do not survey a new technology's potential buyers, even though it is the buyers—not the producers—who will ultimately determine a technology's commercial success.

Which of the following, if true, best accounts for the typical survey practices among market researchers?

- (A) If a new technology succeeds, the commercial benefits accrue largely to the producers, not to the buyers, of that technology.
- (B) People who promote the virtues of a new technology typically fail to consider that the old technology that is currently in use continues to be improved, often substantially.
- (C) Investors are unlikely to invest substantial amounts of capital in a company whose own managers are skeptical about the commercial prospects of a new technology they are developing.
- (D) The potential buyers for not-yet-available technologies can seldom be reliably identified.
- (E) The developers of a new technology are generally no better positioned than its potential buyers to gauge how rapidly the new technology can be efficiently mass-produced.

614. Infotek, a computer manufacturer in Katrovia, has just introduced a new personal computer model that sells for significantly less than any other model. Market research shows, however, that very few Katrovian households without personal computers would buy a computer, regardless of its price. Therefore, introducing the new model is unlikely to increase the number of computers in Katrovian homes.

Which of the following is an assumption on which the argument depends?

- (A) Infotek achieved the lower price of the new model by using components of lower quality than those used by other manufacturers.
- (B) The main reason cited by consumers in Katrovia for replacing a personal computer is the desire to have an improved model.
- (C) Katrovians in households that already have computers are unlikely to purchase the new Infotek model as an additional computer for home use.
- (D) The price of other personal computers in Katrovia is unlikely to drop below the price of Infotek's new model in the near future.
- (E) Most personal computers purchased in Katrovia are intended for home use.

615. Fast-food restaurants make up 45 percent of all restaurants in Canatria. Customers at these restaurants tend to be young; in fact, studies have shown that the older people get, the less likely they are to eat in fast-food restaurants. Since the average age of the Canatryan population is gradually rising and will continue to do so, the number of fast-food restaurants is likely to decrease.

Which of the following, if true, most seriously weakens the argument?

- (A) Fast-food restaurants in Canatria are getting bigger, so each one can serve more customers.
- (B) Some older people eat at fast-food restaurants more frequently than the average young person.
- (C) Many people who rarely eat in fast-food restaurants nevertheless eat regularly in restaurants.
- (D) The overall population of Canatria is growing steadily.
- (E) As the population of Canatria gets older, more people are eating at home.

616. In order to withstand tidal currents, juvenile horseshoe crabs frequently burrow in the sand. Such burrowing discourages barnacles from clinging to their shells. When fully grown, however, the crabs can readily withstand tidal currents without burrowing, and thus they acquire substantial populations of barnacles. Surprisingly, in areas where tidal currents are very weak, juvenile horseshoe crabs are found not to have significant barnacle populations, even though they seldom burrow.

Which of the following, if true, most helps to explain the surprising finding?

- (A) Tidal currents do not themselves dislodge barnacles from the shells of horseshoe crabs.
- (B) Barnacles most readily attach themselves to horseshoe crabs in areas where tidal currents are weakest.
- (C) The strength of the tidal currents in a given location varies widely over the course of a day.
- (D) A very large barnacle population can significantly decrease the ability of a horseshoe crab to find food.
- (E) Until they are fully grown, horseshoe crabs shed their shells and grow new ones several times a year.

617. Last year a chain of fast-food restaurants, whose menu had always centered on hamburgers, added its first vegetarian sandwich, much lower in fat than the chain's other offerings. Despite heavy marketing, the new sandwich accounts for a very small proportion of the chain's sales. The sandwich's sales would have to quadruple to cover the costs associated with including it on the menu. Since such an increase is unlikely, the chain would be more profitable if it dropped the sandwich.

Which of the following, if true, most seriously weakens the argument?

- (A) Although many of the chain's customers have never tried the vegetarian sandwich, in a market research survey most of those who had tried it reported that they were very satisfied with it.
- (B) Many of the people who eat at the chain's restaurants also eat at the restaurants of competing chains and report no strong preference among the competitors.
- (C) Among fast-food chains in general, there has been little or no growth in hamburger sales over the past several years as the range of competing offerings at other restaurants has grown.
- (D) When even one member of a group of diners is a vegetarian or has a preference for low-fat food, the group tends to avoid restaurants that lack vegetarian or low-fat menu options.
- (E) An attempt by the chain to introduce a lower-fat hamburger failed several years ago, since it attracted few new customers and most of the chain's regular customers greatly preferred the taste of the regular hamburgers.

618. Transportation expenses accounted for a large portion of the total dollar amount spent on trips for pleasure by residents of the United States in 1997, and about half of the total dollar amount spent on transportation was for airfare. However, the large majority of United States residents who took trips for pleasure in 1997 did not travel by airplane but used other means of transportation.

If the statements above are true, which of the following must also be true about United States residents who took trips for pleasure in 1997?

- (A) Most of those who traveled by airplane did so because the airfare to their destination was lower than the cost of other available means of transportation.
 - (B) Most of those who traveled by airplane did so because other means of transportation to their destination were unavailable.
 - (C) Per mile traveled, those who traveled by airplane tended to spend more on transportation to their destination than did those who used other means of transportation.
 - (D) Overall, people who did not travel by airplane had lower average transportation expenses than people who did.
 - (E) Those who traveled by airplane spent about as much, on average, on other means of transportation as they did on airfare.
619. Voters commonly condemn politicians for being insincere, but politicians often must disguise their true feelings when they make public statements. If they expressed their honest views—about, say, their party's policies—then achieving politically necessary compromises would be much more difficult. Clearly, the very insincerity that people decry shows that our government is functioning well.

Which of the following, if true, most seriously undermines this reasoning?

- (A) Achieving political compromises is not all that is necessary for the proper functioning of a government.
- (B) Some political compromises are not in the best long-term interest of the government.
- (C) Voters often judge politicians by criteria other than the sincerity with which they express their views.
- (D) A political party's policies could turn out to be detrimental to the functioning of a government.

- (E) Some of the public statements made by politicians about their party's policies could in fact be sincere.

620. To reduce waste of raw materials, the government of Sperland is considering requiring household appliances to be broken down for salvage when discarded. To cover the cost of salvage, the government is planning to charge a fee, which would be imposed when the appliance is first sold. Imposing the fee at the time of salvage would reduce waste more effectively, however, because consumers tend to keep old appliances longer if they are faced with a fee for discarding them.

Which of the following, if true, most seriously weakens the argument?

- (A) Increasing the cost of disposing of an appliance properly increases the incentive to dispose of it improperly.
 - (B) The fee provides manufacturers with no incentive to produce appliances that are more durable.
 - (C) For people who have bought new appliances recently, the salvage fee would not need to be paid for a number of years.
 - (D) People who sell their used, working appliances to others would not need to pay the salvage fee.
 - (E) Many nonfunctioning appliances that are currently discarded could be repaired at relatively little expense.
621. When there is less rainfall than normal, the water level of Australian rivers falls and the rivers flow more slowly. Because algae whose habitat is river water grow best in slow-moving water, the amount of algae per unit of water generally increases when there has been little rain. By contrast, however, following a period of extreme drought, algae levels are low even in very slow-moving river water.

Which of the following, if true, does most to explain the contrast described above?

- (A) During periods of extreme drought, the populations of some of the species that feed on algae tend to fall.
- (B) The more slowly water moves, the more conducive its temperature is to the growth of algae.
- (C) When algae populations reach very high levels, conditions within the river can become toxic for some of the other species that normally live there.

- (D) Australian rivers dry up completely for short intervals in periods of extreme drought.
- (E) Except during periods of extreme drought, algae levels tend to be higher in rivers in which the flow has been controlled by damming than in rivers that flow freely.

622. Increased use of incineration is sometimes advocated as a safe way to dispose of chemical waste. But opponents of incineration point to the 40 incidents involving unexpected releases of dangerous chemical agents that were reported just last year at two existing incinerators commissioned to destroy a quantity of chemical waste material. Since designs for proposed new incinerators include no additional means of preventing such releases, leaks will only become more prevalent if use of incineration increases.

Which of the following, if true, most seriously weakens the argument?

- (A) At the two incinerators at which leaks were reported, staff had had only cursory training on the proper procedures for incinerating chemical waste.
- (B) Other means of disposing of chemical waste, such as chemical neutralization processes, have not been proven safer than incineration.
- (C) The capacity of existing incinerators is sufficient to allow for increased incineration of chemical waste without any need for new incinerators.
- (D) The frequency of reports of unexpected releases of chemical agents at newly built incinerators is about the same as the frequency at older incinerators.
- (E) In only three of the reported incidents of unexpected chemical leaks did the releases extend outside the property on which the incinerators were located.

623. Public health expert: **Increasing the urgency of a public health message may be counterproductive.** In addition to irritating the majority who already behave responsibly, **it may undermine all government pronouncements on health by convincing people that such messages are overly cautious.** And there is no reason to believe that those who ignore measured voices will listen to shouting.

The two sections in boldface play which of the following roles in the public health expert's argument?

- (A) The first is a conclusion for which support is provided, but is not the argument's main conclusion; the second is an unsupported premise supporting the argument's main conclusion.
- (B) The first is a premise supporting the only explicit conclusion; so is the second.
- (C) The first is the argument's main conclusion; the second supports that conclusion and is itself a conclusion for which support is provided.
- (D) The first is a premise supporting the argument's only conclusion; the second is that conclusion.
- (E) The first is the argument's only explicit conclusion; the second is a premise supporting that conclusion.

624. Several industries have recently switched at least partly from older technologies powered by fossil fuels to new technologies powered by electricity. It is thus evident that less fossil fuel is being used as a result of the operations of these industries than would have been used if these industries had retained their older technologies.

Which of the following, if true, most strengthens the argument above?

- (A) Many of the industries that have switched at least partly to the new technologies have increased their output.
- (B) Less fossil fuel was used to manufacture the machinery employed in the new technologies than was originally used to manufacture the machinery employed in the older technologies.
- (C) More electricity is used by those industries that have switched at least partly to the new technologies than by those industries that have not switched.
- (D) Some of the industries that have switched at least partly to the new technologies still use primarily technologies that are powered by fossil fuels.
- (E) The amount of fossil fuel used to generate the electricity needed to power the new technologies is less than the amount that would have been used to power the older technologies.

625. The difference in average annual income in favor of employees who have college degrees, compared with those who do not have such degrees, doubled between 1980 and 1990. Some analysts have hypothesized that increased competition between employers for employees with college degrees drove up income for such employees.

Which of the following, if true, most seriously undermines the explanation described above?

- (A) During the 1980s a growing percentage of college graduates, unable to find jobs requiring a college degree, took unskilled jobs.
- (B) The average age of all employees increased slightly during the 1980s.
- (C) The unemployment rate changed very little throughout most of the 1980s.
- (D) From 1980 to 1990 the difference in average income between employees with advanced degrees and those with bachelor's degrees also increased.
- (E) During the 1980s there were some employees with no college degree who earned incomes comparable to the top incomes earned by employees with a college degree.

626. Which of the following most logically completes the passage?

According to the last pre-election poll in Whippleton, most voters believe that the three problems government needs to address, in order of importance, are pollution, crime, and unemployment. Yet in the election, candidates from parties perceived as strongly against pollution were defeated, while those elected were all from parties with a history of opposing legislation designed to reduce pollution. These results should not be taken to indicate that the poll was inaccurate, however, since _____.

- (A) some voters in Whippleton do not believe that pollution needs to be reduced
- (B) every candidate who was defeated had a strong antipollution record
- (C) there were no issues other than crime, unemployment, and pollution on which the candidates had significant differences of opinion

- (D) all the candidates who were elected were perceived as being stronger against both crime and unemployment than the candidates who were defeated
- (E) many of the people who voted in the election refused to participate in the poll

627. Manufacturing plants in Arundia have recently been acquired in substantial numbers by investors from abroad. Arundian politicians are proposing legislative action to stop such investment, justifying the proposal by arguing that foreign investors, opportunistically exploiting a recent fall in the value of the Arundian currency, were able to buy Arundian assets at less than their true value.

Which of the following, if true, casts the most serious doubt on the adequacy of the Arundian politicians' justification for the proposed legislation?

- (A) The Arundian government originally welcomed the fall in the value of the Arundian currency because the fall made Arundian exports more competitive on international markets.
- (B) Foreign investors who acquired Arundian manufacturing plants generally did so with no intention of keeping and running those plants over the long term.
- (C) Without the recent fall in the value of the Arundian currency, many of the Arundian assets bought by foreign investors would have been beyond the financial reach of those investors.
- (D) In Concordia, a country broadly similar to Arundia, the share of manufacturing assets that is foreign-controlled is 60 percent higher than it is in Arundia.
- (E) The true value of an investment is determined by the value of the profits from it, and the low value of the Arundian currency has depressed the value of any profits earned by foreign investors from Arundian assets.

628. Proposed new safety rules for Beach City airport would lengthen considerably the minimum time between takeoffs from the airport. In consequence, the airport would be able to accommodate 10 percent fewer flights than currently use the airport daily. The city's operating budget depends heavily on taxes generated

by tourist spending, and most of the tourists come by plane. Therefore, the proposed new safety rules, if adopted, will reduce the revenue available for the operating budget.

The argument depends on assuming which of the following?

- (A) There are no periods of the day during which the interval between flights taking off from the airport is significantly greater than the currently allowed minimum.
- (B) Few, if any, of the tourists who use Beach City airport do so when their main destination is a neighboring community and not Beach City itself.
- (C) If the proposed safety rules are adopted, the reduction in tourist numbers will not result mainly from a reduction in the number of tourists who spend relatively little in Beach City.
- (D) Increasing the minimum time between takeoffs is the only way to achieve necessary safety improvements without a large expenditure by the city government on airport enhancements.
- (E) The response to the adoption of the new safety rules would not include a large increase in the number of passengers per flight.

629. The introduction of new drugs into the market is frequently prevented by a shortage of human subjects for the clinical trials needed to show that the drugs are safe and effective. Since the lives and health of people in future generations may depend on treatments that are currently experimental, practicing physicians are morally in the wrong when, in the absence of any treatment proven to be effective, they fail to encourage suitable patients to volunteer for clinical trials.

Which of the following, if true, casts most doubt on the conclusion of the argument?

- (A) Many drugs undergoing clinical trials are intended for the treatment of conditions for which there is currently no effective treatment.

- (B) Patients do not share the physician's professional concern for public health, but everyone has a moral obligation to alleviate suffering when able to do so.
- (C) Usually, half the patients in a clinical trial serve as a control group and receive a nonactive drug in place of the drug being tested.
- (D) An experimental drug cannot legally be made available to patients unless those patients are subjects in clinical trials of the drug.
- (E) Physicians have an overriding moral and legal duty to care for the health and safety of their current patients.

630. As a construction material, bamboo is as strong as steel and sturdier than concrete. Moreover, in tropical areas bamboo is a much less expensive construction material than either steel or concrete and is always readily available. In tropical areas, therefore, building with bamboo makes better economic sense than building with steel or concrete, except where land values are high.

Which of the following, if true, most helps to explain the exception noted above?

- (A) Buildings constructed of bamboo are less likely to suffer earthquake damage than are steel and concrete buildings.
- (B) Bamboo is unsuitable as a building material for multistory buildings.
- (C) In order to protect it from being damaged by termites and beetles, bamboo must be soaked, at some expense, in a preservative.
- (D) In some tropical areas, bamboo is used to make the scaffolding that is used during large construction projects.
- (E) Bamboo growing in an area where land values are increasing is often cleared to make way for construction.

631. Newspaper editors should not allow reporters to write the headlines for their own stories. The reason for this is that, while the headlines that reporters themselves write are often clever, what typically makes them clever is that they allude to little-known information that is familiar to the reporter but that never appears explicitly in the story itself.

Which of the following, if true, most strengthens the argument?

- (A) The reporter who writes a story is usually better placed than the reporter's editor is to judge what the story's most newsworthy features are.
- (B) To write a headline that is clever, a person must have sufficient understanding of the story that the headline accompanies.
- (C) Most reporters rarely bother to find out how other reporters have written stories and headlines about the same events that they themselves have covered.
- (D) For virtually any story that a reporter writes, there are at least a few people who know more about the story's subject matter than does the reporter.
- (E) The kind of headlines that newspaper editors want are those that anyone who has read a reporter's story in its entirety will recognize as clever.

632. Scientists have modified feed corn genetically, increasing its resistance to insect pests. Farmers who tried out the genetically modified corn last season applied less insecticide to their corn fields and still got yields comparable to those they would have gotten with ordinary corn. Ordinary corn seed, however, costs less, and what these farmers saved on insecticide rarely exceeded their extra costs for seed. Therefore, for most feed-corn farmers, switching to genetically modified seed would be unlikely to increase profits.

Which of the following would it be most useful to know in order to evaluate the argument?

- (A) Whether there are insect pests that sometimes reduce feed-corn yields, but against which commonly used insecticides and the genetic modification are equally ineffective
- (B) Whether the price that farmers receive for feed corn has remained steady over the past few years

- (C) Whether the insecticides typically used on feed corn tend to be more expensive than insecticides typically used on other crops
- (D) Whether most of the farmers who tried the genetically modified corn last season applied more insecticide than was actually necessary
- (E) Whether, for most farmers who plant feed corn, it is their most profitable crop

633. Debater: The average amount of overtime per month worked by an employee in the manufacturing division of the Haglut Corporation is 14 hours. Most employees of the Haglut Corporation work in the manufacturing division. Furthermore, the average amount of overtime per month worked by any employee in the company generally does not fluctuate much from month to month. Therefore, each month, most employees of the Haglut Corporation almost certainly work at least some overtime.

The debater's argument is most vulnerable to criticism on which of these grounds?

- (A) It takes for granted that the manufacturing division is a typical division of the corporation with regard to the average amount of overtime its employees work each month.
- (B) It takes for granted that if a certain average amount of overtime is worked each month by each employee of the Haglut Corporation, then approximately the same amount of overtime must be worked each month by each employee of the manufacturing division.
- (C) It confuses a claim from which the argument's conclusion about the Haglut Corporation would necessarily follow with a claim that would follow from the argument's conclusion only with a high degree of probability.
- (D) It overlooks the possibility that even if, on average, a certain amount of overtime is worked by the members of some group, many members of that group may work no overtime at all.
- (E) It overlooks the possibility that even if most employees of the corporation work some overtime each month, any one corporate employee may, in some months, work no overtime.

634. Proponents of the recently introduced tax on sales of new luxury boats had argued that a tax of this sort would be an equitable way to increase government revenue because the admittedly heavy tax burden would fall only on wealthy people and neither they nor anyone else would suffer any economic hardship. In fact, however, 20 percent of the workers employed by manufacturers of luxury boats have lost their jobs as a direct result of this tax.

The information given, if true, most strongly supports which of the following?

- (A) The market for luxury boats would have collapsed even if the new tax on luxury boats had been lower.
- (B) The new tax would produce a net gain in tax revenue for the government only if the yearly total revenue that it generates exceeds the total of any yearly tax-revenue decrease resulting from the workers' loss of jobs.
- (C) Because many people never buy luxury items, imposing a sales tax on luxury items is the kind of legislative action that does not cost incumbent legislators much popular support.
- (D) Before the tax was instituted, luxury boats were largely bought by people who were not wealthy.
- (E) Taxes can be equitable only if their burden is evenly distributed over the entire population.

635. In Wareland last year, 16 percent of licensed drivers under 21 and 11 percent of drivers ages 21–24 were in serious accidents. By contrast, only 3 percent of licensed drivers 65 and older were involved in serious accidents. These figures clearly show that the greater experience and developed habits of caution possessed by drivers in the 65-and-older group make them far safer behind the wheel than the younger drivers are.

Which of the following is an assumption on which the argument depends?

- (A) Drivers 65 and older do not, on average, drive very many fewer miles per year than drivers 24 and younger.

- (B) Drivers 65 and older do not constitute a significantly larger percentage of licensed drivers in Wareland than drivers ages 18–24 do.
- (C) Drivers 65 and older are less likely than are drivers 24 and younger to drive during weather conditions that greatly increase the risk of accidents.
- (D) The difference between the accident rate of drivers under 21 and of those ages 21–24 is attributable to the greater driving experience of those in the older group.
- (E) There is no age bracket for which the accident rate is lower than it is for licensed drivers 65 and older.

636. In the past the country of Malvernia has relied heavily on imported oil. Malvernia recently implemented a program to convert heating systems from oil to natural gas. Malvernia currently produces more natural gas each year than it uses, and oil production in Malvernian oil fields is increasing at a steady pace. If these trends in fuel production and usage continue, therefore, Malvernian reliance on foreign sources for fuel is likely to decline soon.

Which of the following would it be most useful to establish in evaluating the argument?

- (A) When, if ever, will production of oil in Malvernia outstrip production of natural gas?
- (B) Is Malvernia among the countries that rely most on imported oil?
- (C) What proportion of Malvernia's total energy needs is met by hydroelectric, solar, and nuclear power?
- (D) Is the amount of oil used each year in Malvernia for generating electricity and fuel for transportation increasing?
- (E) Have any existing oil-burning heating systems in Malvernia already been converted to natural-gas-burning heating systems?

637. Exposure to certain chemicals commonly used in elementary schools as cleaners or pesticides causes allergic reactions in some children. Elementary school nurses in Renston report that the proportion of schoolchildren sent to them for treatment of allergic reactions to those chemicals has increased significantly over the past ten years. Therefore, either Renston's schoolchildren have been exposed to greater quantities of the chemicals, or they are more sensitive to them than schoolchildren were ten years ago.

Which of the following is an assumption on which the argument depends?

- (A) The number of school nurses employed by Renston's elementary schools has not decreased over the past ten years.
 - (B) Children who are allergic to the chemicals are no more likely than other children to have allergies to other substances.
 - (C) Children who have allergic reactions to the chemicals are not more likely to be sent to a school nurse now than they were ten years ago.
 - (D) The chemicals are not commonly used as cleaners or pesticides in houses and apartment buildings in Renston.
 - (E) Children attending elementary school do not make up a larger proportion of Renston's population now than they did ten years ago.
638. Normally, the pineal gland governs a person's sleep-wake cycle by secreting melatonin in response to the daily cycle of light and darkness as detected by the eye. Nonetheless, many people who are totally blind due to lesions in the visual cortex of the brain easily maintain a 24-hour sleep-wake cycle. So the neural pathway by which the pineal gland receives information from the eye probably does not pass through the visual cortex.

For purposes of evaluating the argument it would be most useful to establish which of the following?

- (A) Whether melatonin supplements help people who have difficulty maintaining a 24-hour sleep cycle to establish such a pattern
- (B) Whether the melatonin levels of most totally blind people who successfully maintain a 24-hour sleep-wake cycle change in response to changes in exposure to light and darkness

- (C) Whether melatonin is the only substance secreted by the pineal gland
- (D) Whether most people who do not have a 24-hour sleep-wake cycle nevertheless have a cycle of consistent duration
- (E) Whether there are any people with normal vision whose melatonin levels respond abnormally to periods of light and darkness

639. **In countries where automobile insurance includes compensation for whiplash injuries sustained in automobile accidents, reports of having suffered such injuries are twice as frequent as they are in countries where whiplash is not covered.**

Presently, no objective test for whiplash exists, so it is true that spurious reports of whiplash injuries cannot be readily identified. Nevertheless, these facts do not warrant the conclusion drawn by some commentators that in the countries with the higher rates of reported whiplash injuries, half of the reported cases are spurious. Clearly, **in countries where automobile insurance does not include compensation for whiplash, people often have little incentive to report whiplash injuries that they actually have suffered.**

In the argument given, the two boldfaced portions play which of the following roles?

- (A) The first is a claim that the argument disputes; the second is a conclusion that has been based on that claim.
- (B) The first is a claim that has been used to support a conclusion that the argument accepts; the second is that conclusion.
- (C) The first is evidence that has been used to support a conclusion for which the argument provides further evidence; the second is the main conclusion of the argument.
- (D) The first is a finding whose implications are at issue in the argument; the second is a claim presented in order to argue against deriving certain implications from that finding.
- (E) The first is a finding whose accuracy is evaluated in the argument; the second is evidence presented to establish that the finding is accurate.

640. Last year Comfort Airlines had twice as many delayed flights as the year before, but the number of complaints from passengers about delayed flights went up three times. It is unlikely that this disproportionate increase in complaints was rooted in an increase in overall dissatisfaction with the service Comfort Airlines provides, since the airline made a special effort to improve other aspects of its service last year.

Which of the following, if true, most helps to explain the disproportionate increase in customer complaints?

- (A) Comfort Airlines had more flights last year than the year before.
- (B) Last year a single period of unusually bad weather caused a large number of flights to be delayed.
- (C) Some of the improvements that Comfort Airlines made in its service were required by new government regulations.
- (D) The average length of a flight delay was greater last year than it was the year before.
- (E) The average number of passengers per flight was no higher last year than the year before.

641. Last year a global disturbance of weather patterns disrupted harvests in many of the world's important agricultural areas. Worldwide production of soybeans, an important source of protein for people and livestock alike, was not adversely affected, however. Indeed, last year's soybean crop was actually slightly larger than average. Nevertheless, the weather phenomenon is probably responsible for a recent increase in the world price of soybeans.

Which of the following, if true, provides the strongest justification for the attribution of the increase in soybean prices to the weather phenomenon?

- (A) Last year's harvest of anchovies, which provide an important protein source for livestock, was disrupted by the effects of the weather phenomenon.
- (B) Most countries that produce soybeans for export had above-average harvests of a number of food crops other than soybeans last year.

- (C) The world price of soybeans also rose several years ago, immediately after an earlier occurrence of a similar global weather disturbance.
- (D) Heavy rains attributable to the weather phenomenon improved grazing pastures last year, allowing farmers in many parts of the world to reduce their dependence on supplemental feed.
- (E) Prior to last year, soybean prices had been falling for several years.

642. Most of the year, the hermit thrush, a North American songbird, eats a diet consisting mainly of insects, but in autumn, as the thrushes migrate to their Central and South American wintering grounds, they feed almost exclusively on wild berries. Wild berries, however, are not as rich in calories as insects, yet thrushes need to consume plenty of calories in order to complete their migration. One possible explanation is that berries contain other nutrients that thrushes need for migration and that insects lack.

Which of the following, if true, most seriously calls into question the explanation given for the thrush's diet during migration?

- (A) Hermit thrushes, if undernourished, are unable to complete their autumn migration before the onset of winter.
- (B) Insect species contain certain nutrients that are not found in wild berries.
- (C) For songbirds, catching insects requires the expenditure of significantly more calories than eating wild berries does.
- (D) Along the hermit thrushes' migration routes, insects are abundant throughout the migration season.
- (E) There are some species of wild berries that hermit thrushes generally do not eat, even though these berry species are exceptionally rich in calories.

643. The kinds of hand and wrist injuries that result from extended use of a computer while maintaining an incorrect posture are common among schoolchildren in Harnville. Computers are important to the school curriculum there, so instead of reducing the amount their students use computers, teachers plan to bring about a sharp reduction in the number of these injuries by carefully monitoring their students' posture when using computers in the classroom.

Which of the following would it be most useful to know in order to assess the likelihood that the teachers' plan will be successful?

- (A) Whether extended use of a computer while maintaining incorrect posture can cause injuries other than hand and wrist injuries
- (B) Whether hand and wrist injuries not caused by computer use are common among schoolchildren in Harnville
- (C) What proportion of schoolchildren in Harnville with hand and wrist injuries use computers extensively outside the classroom
- (D) Whether changes in the curriculum could reduce the schools' dependence on computers
- (E) What proportion of schoolchildren in Harnville already use correct posture while using a computer

644. A certain cultivated herb is one of a group of closely related plants that thrive in soil with high concentrations of metals that are toxic to most other plants. Agronomists studying the growth of this herb have discovered that it produces large amounts of histidine, an amino acid that, in test-tube solutions, renders these metals chemically inert. Hence, the herb's high histidine production must be the key feature that allows it to grow in metal-rich soils.

In evaluating the argument, it would be most important to determine which of the following?

- (A) Whether the herb can thrive in soil that does not have high concentrations of the toxic metals
- (B) Whether others of the closely related group of plants also produce histidine in large quantities

- (C) Whether the herb's high level of histidine production is associated with an unusually low level of production of some other amino acid
- (D) Whether growing the herb in soil with high concentrations of the metals will, over time, reduce their concentrations in the soil
- (E) Whether the concentration of histidine in the growing herb declines as the plant approaches maturity

645. Many people suffer an allergic reaction to certain sulfites, including those that are commonly added to wine as preservatives. However, since there are several winemakers who add sulfites to none of the wines they produce, people who would like to drink wine but are allergic to sulfites can drink wines produced by these winemakers without risking an allergic reaction to sulfites.

Which of the following is an assumption on which the argument depends?

- (A) These winemakers have been able to duplicate the preservative effect produced by adding sulfites by means that do not involve adding any potentially allergenic substances to their wine.
- (B) Not all forms of sulfite are equally likely to produce the allergic reaction.
- (C) Wine is the only beverage to which sulfites are commonly added.
- (D) Apart from sulfites, there are no substances commonly present in wine that give rise to an allergic reaction.
- (E) Sulfites are not naturally present in the wines produced by these winemakers in amounts large enough to produce an allergic reaction in someone who drinks these wines.

646. A new law gives ownership of patents—documents providing exclusive right to make and sell an invention—to universities, not the government, when those patents result from government-sponsored university research. Administrators at Logos University plan to sell any patents they acquire to corporations in order to fund programs to improve undergraduate teaching.

Which of the following, if true, would cast the most doubt on the viability of the college administrators' plan described above?

- (A) Profit-making corporations interested in developing products based on patents held by universities are likely to try to serve as exclusive sponsors of ongoing university research projects.
- (B) Corporate sponsors of research in university facilities are entitled to tax credits under new federal tax-code guidelines.
- (C) Research scientists at Logos University have few or no teaching responsibilities and participate little if at all in the undergraduate programs in their field.
- (D) Government-sponsored research conducted at Logos University for the most part duplicates research already completed by several profitmaking corporations.
- (E) Logos University is unlikely to attract corporate sponsorship of its scientific research.

647. Since it has become known that **several of a bank's top executives have been buying shares in their own bank**, the bank's depositors, who had been worried by rumors that the bank faced impending financial collapse, have been greatly relieved. They reason that, since top executives evidently have faith in the bank's financial soundness, those worrisome rumors must be false. Such reasoning might well be overoptimistic, however, since **corporate executives have been known to buy shares in their own company in a calculated attempt to dispel negative rumors about the company's health**.

In the argument given, the two boldfaced portions play which of the following roles?

- (A) The first describes evidence that has been taken as supporting a conclusion; the second gives a reason for questioning that support.
- (B) The first describes evidence that has been taken as supporting a conclusion; the second states a contrary conclusion that is the main conclusion of the argument.

- (C) The first provides evidence in support of the main conclusion of the argument; the second states that conclusion.
- (D) The first describes the circumstance that the argument as a whole seeks to explain; the second gives the explanation that the argument seeks to establish.
- (E) The first describes the circumstance that the argument as a whole seeks to explain; the second provides evidence in support of the explanation that the argument seeks to establish.

648. Between 1980 and 2000 the sea otter population of the Aleutian Islands declined precipitously. There were no signs of disease or malnutrition, so there was probably an increase in the number of otters being eaten by predators. Orcas will eat otters when seals, their normal prey, are unavailable, and the Aleutian Islands seal population declined dramatically in the 1980s. Therefore, orcas were most likely the immediate cause of the otter population decline.

Which of the following, if true, most strengthens the argument?

- (A) The population of sea urchins, the main food of sea otters, has increased since the sea otter population declined.
- (B) Seals do not eat sea otters, nor do they compete with sea otters for food.
- (C) Most of the surviving sea otters live in a bay that is inaccessible to orcas.
- (D) The population of orcas in the Aleutian Islands has declined since the 1980s.
- (E) An increase in commercial fishing near the Aleutian Islands in the 1980s caused a slight decline in the population of the fish that seals use for food.

649. Studies in restaurants show that the tips left by customers who pay their bill in cash tend to be larger when the bill is presented on a tray that bears a credit-card logo. Consumer psychologists hypothesize that simply seeing a credit-card logo makes many credit-card holders willing to spend more because it reminds them that their spending power exceeds the cash they have immediately available.

Which of the following, if true, most strongly supports the psychologists' interpretation of the studies?

- (A) The effect noted in the studies is not limited to patrons who have credit cards.
 - (B) Patrons who are under financial pressure from their credit-card obligations tend to tip less when presented with a restaurant bill on a tray with a credit-card logo than when the tray has no logo.
 - (C) In virtually all of the cases in the studies, the patrons who paid bills in cash did not possess credit cards.
 - (D) In general, restaurant patrons who pay their bills in cash leave larger tips than do those who pay by credit card.
 - (E) The percentage of restaurant bills paid with a given brand of credit card increases when that credit card's logo is displayed on the tray with which the bill is presented.
650. In an experiment, each volunteer was allowed to choose between an easy task and a hard task and was told that another volunteer would do the other task. Each volunteer could also choose to have a computer assign the two tasks randomly. Most volunteers chose the easy task for themselves and under questioning later said they had acted fairly. But when the scenario was described to another group of volunteers, almost all said choosing the easy task would be unfair. This shows that most people apply weaker moral standards to themselves than to others.

Which of the following is an assumption required by this argument?

- (A) At least some volunteers who said they had acted fairly in choosing the easy task would have said that it was unfair for someone else to do so.
- (B) The most moral choice for the volunteers would have been to have the computer assign the two tasks randomly.

- (C) There were at least some volunteers who were assigned to do the hard task and felt that the assignment was unfair.
- (D) On average, the volunteers to whom the scenario was described were more accurate in their moral judgments than the other volunteers were.
- (E) At least some volunteers given the choice between assigning the tasks themselves and having the computer assign them felt that they had made the only fair choice available to them.

651. Country X's recent stock-trading scandal should not diminish investors' confidence in the country's stock market. For one thing, **the discovery of the scandal confirms that Country X has a strong regulatory system**, as the following considerations show. In any stock market, some fraudulent activity is inevitable. If a stock market is well regulated, any significant stock-trading fraud in it will very likely be discovered. This deters potential perpetrators and facilitates improvement in regulatory processes.

In the argument, the portion in boldface plays which of the following roles?

- (A) It is the argument's only conclusion.
 - (B) It is a conclusion for which the argument provides support and which itself is used to support the argument's main conclusion.
 - (C) It is the argument's main conclusion and is supported by another explicitly stated conclusion for which further support is provided.
 - (D) It is an assumption for which no explicit support is provided and is used to support the argument's only conclusion.
 - (E) It is a compound statement containing both the argument's main conclusion and an assumption used to support that conclusion.
652. **Delta Products Inc. has recently switched at least partly from older technologies using fossil fuels to new technologies powered by electricity.** The question has been raised whether it can be concluded that **for a given level of output Delta's operation now causes less fossil fuel to be consumed than it did formerly.** The answer, clearly, is yes, since the amount of fossil fuel used to generate the electricity needed to power the new technologies is less than the amount needed to power the older technologies, provided level of output is held constant.

In the argument given, the two boldfaced portions play which of the following roles?

- (A) The first identifies the content of the conclusion of the argument; the second provides support for that conclusion.
- (B) The first provides support for the conclusion of the argument; the second identifies the content of that conclusion.
- (C) The first states the conclusion of the argument; the second calls that conclusion into question.
- (D) The first provides support for the conclusion of the argument; the second calls that conclusion into question.
- (E) Each provides support for the conclusion of the argument.

653. Theater Critic: The play *La Finestrina*, now at Central Theater, was written in Italy in the eighteenth century. The director claims that this production is as similar to the original production as is possible in a modern theater. Although the actor who plays Harlequin the clown gives a performance very reminiscent of the twentieth-century American comedian Groucho Marx, Marx's comic style was very much within the comic acting tradition that had begun in sixteenth-century Italy.

The considerations given best serve as part of an argument that

- (A) modern audiences would find it hard to tolerate certain characteristics of a historically accurate performance of an eighteenth-century play
- (B) Groucho Marx once performed the part of the character Harlequin in *La Finestrina*
- (C) in the United States the training of actors in the twentieth century is based on principles that do not differ radically from those that underlay the training of actors in eighteenth-century Italy
- (D) the performance of the actor who plays Harlequin in *La Finestrina* does not serve as evidence against the director's claim
- (E) the director of *La Finestrina* must have advised the actor who plays Harlequin to model his performance on comic performances of Groucho Marx

654. Although the discount stores in Goreville's central shopping district are expected to close within five years as a result of competition from a SpendLess discount department store that just opened, those

locations will not stay vacant for long. In the five years since the opening of Colson's, a nondiscount department store, a new store has opened at the location of every store in the shopping district that closed because it could not compete with Colson's.

Which of the following, if true, most seriously weakens the argument?

- (A) Many customers of Colson's are expected to do less shopping there than they did before the SpendLess store opened.
- (B) Increasingly, the stores that have opened in the central shopping district since Colson's opened have been discount stores.
- (C) At present, the central shopping district has as many stores operating in it as it ever had.
- (D) Over the course of the next five years, it is expected that Goreville's population will grow at a faster rate than it has for the past several decades.
- (E) Many stores in the central shopping district sell types of merchandise that are not available at either SpendLess or Colson's.

655. Last year all refuse collected by Shelbyville city services was incinerated. This incineration generated a large quantity of residual ash. In order to reduce the amount of residual ash Shelbyville generates this year to half of last year's total, the city has revamped its collection program. This year city services will separate for recycling enough refuse to reduce the number of truckloads of refuse to be incinerated to half of last year's number.

Which of the following is required for the revamped collection program to achieve its aim?

- (A) This year, no materials that city services could separate for recycling will be incinerated.
- (B) Separating recyclable materials from materials to be incinerated will cost Shelbyville less than half what it cost last year to dispose of the residual ash.
- (C) Refuse collected by city services will contain a larger proportion of recyclable materials this year than it did last year.
- (D) The refuse incinerated this year will generate no more residual ash per truckload incinerated than did the refuse incinerated last year.
- (E) The total quantity of refuse collected by Shelbyville city services this year will be no greater than that collected last year.

656. Veterinarians generally derive some of their income from selling several manufacturers' lines of pet-care products. Knowing that pet owners rarely throw away mail from their pet's veterinarian unread, one manufacturer of pet-care products offered free promotional materials on its products to veterinarians for mailing to their clients. Very few veterinarians accepted the offer, however, even though the manufacturer's products are of high quality.

Which of the following, if true, most helps to explain the veterinarians' reaction to the manufacturer's promotional scheme?

- (A) Most of the veterinarians to whom the free promotional materials were offered were already selling the manufacturer's pet-care products to their clients.
- (B) The special promotional materials were intended as a supplement to the manufacturer's usual promotional activities rather than as a replacement for them.
- (C) The manufacturer's products, unlike most equally good competing products sold by veterinarians, are also available in pet stores and in supermarkets.
- (D) Many pet owners have begun demanding quality in products they buy for their pets that is as high as that in products they buy for themselves.
- (E) Veterinarians sometimes recommend that pet owners use products formulated for people when no suitable product specially formulated for animals is available.

657. The average hourly wage of television assemblers in Vernland has long been significantly lower than that in neighboring Borodia. Since Borodia dropped all tariffs on Vernlandian televisions three years ago, the number of televisions sold annually in Borodia has not changed. However, recent statistics show a drop in the number of television assemblers in Borodia. Therefore, updated trade statistics will probably indicate that the number of televisions Borodia imports annually from Vernland has increased.

Which of the following is an assumption on which the argument depends?

- (A) The number of television assemblers in Vernland has increased by at least as much as the number of television assemblers in Borodia has decreased.

- (B) Televisions assembled in Vernland have features that televisions assembled in Borodia do not have.
- (C) The average number of hours it takes a Borodian television assembler to assemble a television has not decreased significantly during the past three years.
- (D) The number of televisions assembled annually in Vernland has increased significantly during the past three years.
- (E) The difference between the hourly wage of television assemblers in Vernland and the hourly wage of television assemblers in Borodia is likely to decrease in the next few years.

658. Guidebook writer: I have visited hotels throughout the country and have noticed that in those built before 1930 the quality of the original carpentry work is generally superior to that in hotels built afterward. Clearly carpenters working on hotels before 1930 typically worked with more skill, care, and effort than carpenters who have worked on hotels built subsequently.

Which of the following, if true, most seriously weakens the guidebook writer's argument?

- (A) The quality of original carpentry in hotels is generally far superior to the quality of original carpentry in other structures, such as houses and stores.
- (B) Hotels built since 1930 can generally accommodate more guests than those built before 1930.
- (C) The materials available to carpenters working before 1930 were not significantly different in quality from the materials available to carpenters working after 1930.
- (D) The better the quality of original carpentry in a building, the less likely that building is to fall into disuse and be demolished.
- (E) The average length of apprenticeship for carpenters has declined significantly since 1930.

659. Scientists typically do their most creative work before the age of forty. It is commonly thought that this happens because aging by itself brings about a loss of creative capacity. However, studies show that **of scientists who produce highly creative work beyond the age of forty, a disproportionately large number entered their field at an older age than is usual**. Since by the age of forty the large majority of scientists have been working in their field for at least fifteen years, the studies' finding strongly suggests that the real reason why scientists over forty rarely produce highly creative work is not that they have aged but rather that **scientists over forty have generally spent too long in their field**.

In the argument given, the two portions in boldface play which of the following roles?

- (A) The first is a claim, the accuracy of which is at issue in the argument; the second is a conclusion drawn on the basis of that claim.
- (B) The first is an objection that has been raised against a position defended in the argument; the second is that position.
- (C) The first is evidence that has been used to support an explanation that the argument challenges; the second is that explanation.
- (D) The first is evidence that has been used to support an explanation that the argument challenges; the second is a competing explanation that the argument favors.
- (E) The first provides evidence to support an explanation that the argument favors; the second is that explanation.

660. NorthAir charges low fares for its economy-class seats, but it provides very cramped seating and few amenities. Market research shows that economy passengers would willingly pay more for wider seating and better service, and additional revenue provided by these higher ticket prices would more than cover the additional cost of providing these amenities. Even though NorthAir is searching for ways to improve its profitability, it has decided not to make these improvements.

Which of the following, if true, would most help to explain NorthAir's decision in light of its objectives?

- (A) None of NorthAir's competitors offers significantly better seating and service to economy-class passengers than NorthAir does.
- (B) On many of the routes that NorthAir flies, it is the only airline to offer direct flights.
- (C) A few of NorthAir's economy-class passengers are satisfied with the service they receive, given the low price they pay.
- (D) Very few people avoid flying on NorthAir because of the cramped seating and poor service offered in economy class.
- (E) The number of people who would be willing to pay the high fares NorthAir charges for its business-class seats would decrease if its economy-class seating were more acceptable.

661. Which of the following most logically completes the argument given?

Asthma, a chronic breathing disorder, is significantly more common today among adult competitive swimmers than it is among competitive athletes who specialize in other sports. Although chlorine is now known to be a lung irritant and swimming pool water is generally chlorinated, it would be rash to assume that frequent exposure to chlorine is the explanation of the high incidence of asthma among these swimmers, since _____.

- (A) young people who have asthma are no more likely to become competitive athletes than are young people who do not have asthma
- (B) competitive athletes who specialize in sports other than swimming are rarely exposed to chlorine
- (C) competitive athletes as a group have a significantly lower incidence of asthma than do people who do not participate in competitive athletics
- (D) until a few years ago, physicians routinely recommended competitive swimming to children with asthma, in the belief that this form of exercise could alleviate asthma symptoms
- (E) many people have asthma without knowing they have it and thus are not diagnosed with the condition until they begin engaging in very strenuous activities, such as competitive athletics

662. In the country of Marut, the Foreign Trade Agency's records were reviewed in 1994 in light of information then newly available about neighboring Goro. The review revealed that in every year since 1963, the agency's projection of what Goro's gross national product (GNP) would be five years later was a serious underestimate. The review also revealed that in every year since 1963, the agency estimated Goro's GNP for the previous year—a Goro state secret—very accurately.

Of the following claims, which is most strongly supported by the statements given?

- (A) Goro's GNP fluctuated greatly between 1963 and 1994.
- (B) Prior to 1995, Goro had not released data intended to mislead the agency in making its five-year projections.
- (C) The amount by which the agency underestimated the GNP it projected for Goro tended to increase over time.
- (D) Even before the new information came to light, the agency had reason to think that at least some of the five-year projections it had made were inaccurate.
- (E) The agency's five-year projections of Goro's GNP had no impact on economic planning in Marut.

663. Vargonia has just introduced a legal requirement that student-teacher ratios in government-funded schools not exceed a certain limit. All Vargonian children are entitled to education, free of charge, in these schools. When a recession occurs and average incomes fall, the number of children enrolled in government-funded schools tends to increase. Therefore, though most employment opportunities contract in economic recessions, getting a teaching job in Vargonia's government-funded schools will not be made more difficult by a recession.

Which of the following would be most important to determine in order to evaluate the argument?

- (A) Whether in Vargonia there are any schools not funded by the government that offer children an education free of charge
- (B) Whether the number of qualified applicants for teaching positions in government-funded schools increases significantly during economic recessions

- (C) What the current student-teacher ratio in Vargonia's government-funded schools is
- (D) What proportion of Vargonia's workers currently hold jobs as teachers in government-funded schools
- (E) Whether in the past a number of government-funded schools in Vargonia have had student-teacher ratios well in excess of the new limit

664. In Colorado subalpine meadows, nonnative dandelions co-occur with a native flower, the larkspur. Bumblebees visit both species, creating the potential for interactions between the two species with respect to pollination. In a recent study, researchers selected 16 plots containing both species; all dandelions were removed from eight plots; the remaining eight control plots were left undisturbed. The control plots yielded significantly more larkspur seeds than the dandelion-free plots, leading the researchers to conclude that the presence of dandelions facilitates pollination (and hence seed production) in the native species by attracting more pollinators to the mixed plots.

Which of the following, if true, most seriously undermines the researchers' reasoning?

- (A) Bumblebees preferentially visit dandelions over larkspurs in mixed plots.
- (B) In mixed plots, pollinators can transfer pollen from one species to another to augment seed production.
- (C) If left unchecked, nonnative species like dandelions quickly crowd out native species.
- (D) Seed germination is a more reliable measure of a species' fitness than seed production.
- (E) Soil disturbances can result in fewer blooms, and hence lower seed production.

665. An experiment was done in which human subjects recognize a pattern within a matrix of abstract designs and then select another design that completes that pattern. The results of the experiment were surprising. The lowest expenditure of energy in neurons in the brain was found in those subjects who performed most successfully in the experiments.

Which of the following hypotheses best accounts for the findings of the experiment?

- (A) The neurons of the brain react less when a subject is trying to recognize patterns than when the subject is doing other kinds of reasoning.
- (B) Those who performed best in the experiment experienced more satisfaction when working with abstract patterns than did those who performed less well.
- (C) People who are better at abstract pattern recognition have more energy-efficient neural connections.
- (D) The energy expenditure of the subjects' brains increases when a design that completes the initially recognized pattern is determined.
- (E) The task of completing a given design is more capably performed by athletes, whose energy expenditure is lower when they are at rest.

666. With seventeen casinos, Moneyland operates the most casinos in a certain state. Although intent on expanding, it was outmaneuvered by Apex Casinos in negotiations to acquire the Eldorado chain. To complete its acquisition of Eldorado, Apex must sell five casinos to comply with a state law forbidding any owner to operate more than one casino per county. Since Apex will still be left operating twenty casinos in the state, it will then have the most casinos in the state.

Which of the following, if true, most seriously undermines the prediction?

- (A) Apex, Eldorado, and Moneyland are the only organizations licensed to operate casinos in the state.
- (B) The majority of Eldorado's casinos in the state will need extensive renovations if they are to continue to operate profitably.
- (C) Some of the state's counties do not permit casinos.
- (D) Moneyland already operates casinos in the majority of the state's counties.
- (E) Apex will use funds it obtains from the sale of the five casinos to help fund its acquisition of the Eldorado chain.

667. It is widely assumed that people need to engage in intellectual activities such as solving crossword puzzles or mathematics problems in order to maintain mental sharpness as they age. In fact, however, simply talking to other people—that is, participating in social interaction, which engages many mental and perceptual skills—suffices. Evidence to this effect comes from a study showing that the more social contact people report, the better their mental skills.

Which of the following, if true, most seriously weakens the force of the evidence cited?

- (A) As people grow older, they are often advised to keep exercising their physical and mental capacities in order to maintain or improve them.
- (B) Many medical conditions and treatments that adversely affect a person's mental sharpness also tend to increase that person's social isolation.
- (C) Many people are proficient both in social interactions and in solving mathematical problems.
- (D) The study did not itself collect data but analyzed data bearing on the issue from prior studies.
- (E) The tasks evaluating mental sharpness for which data were compiled by the study were more akin to mathematics problems than to conversation.