

TEST 1

SECTION 1

Time — 30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Nonviolent demonstrations often create such tensions that a community that has constantly refused to ----- its injustices is forced to correct them: the injustices can no longer be -----.
(A) acknowledge..ignored
(B) decrease..verified
(C) tolerate..accepted
(D) address..eliminated
(E) explain..discussed
2. Since 1813 reaction to Jane Austen's novels has oscillated between ----- and condescension; but in general later writers have esteemed her works more highly than did most of her literary -----.
(A) dismissal..admirers
(B) adoration..contemporaries
(C) disapproval..readers
(D) indifference..followers
(E) approbation..precursors
3. There are, as yet, no vegetation types or ecosystems whose study has been ----- to the extent that they no longer ----- ecologists.
(A) perfected..hinder
(B) exhausted..interest
(C) prolonged..require
(D) prevented..challenge
(E) delayed..benefit
4. Under ethical guidelines recently adopted by the National Institutes of Health, human genes are to be manipulated only to correct diseases for which ----- treatments are unsatisfactory.
(A) similar (B) most (C) dangerous
(D) uncommon (E) alternative
5. It was her view that the country's problems had been ----- by foreign technocrats, so that to invite them to come back would be counterproductive.
(A) foreseen (B) attacked (C) ascertained
(D) exacerbated (E) analyzed
6. Winsor McCay, the cartoonist, could draw with incredible -----: his comic strip about Little Nemo was characterized by marvelous draftmanship and sequencing.
(A) sincerity (B) efficiency (C) virtuosity
(D) rapidity (E) energy
7. The actual ----- of Wilson's position was always ----- by his refusal to compromise after having initially agreed to negotiate a settlement.
(A) outcome..foreshadowed
(B) logic..enhanced
(C) rigidity..betrayed
(D) uncertainty..alleviated
(E) cowardice..highlighted

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line (5) It has been known for many decades that the appearance of sunspots is roughly periodic, with an average cycle of eleven years. Moreover, the incidence of solar flares and the flux of solar cosmic rays, ultraviolet radiation, and x-radiation all vary directly with the sunspot cycle. But after more than a century of investigation, the relation of these and other phenomena, known collectively as the solar-activity cycle, to terrestrial weather and climate remains unclear. For example, the sunspot cycle and the allied magnetic-polarity cycle have been linked to periodicities discerned in records of such variables as rainfall, temperature, and winds. Invariably, however, the relation is weak, and commonly of dubious statistical significance.

(10) (15) Effects of solar variability over longer terms have also been sought. The absence of recorded sunspot activity in the notes kept by European observers in the late seventeenth and early eighteenth centuries has led some scholars to postulate a brief cessation of sunspot activity at that time (a period called the Maunder minimum). The Maunder minimum has been linked to a span of unusual cold in Europe extending from the sixteenth to the early nineteenth centuries. The reality of the Maunder minimum has yet to be established, however, especially since (20) the records that Chinese naked-eye observers of solar activity made at that time appear to contradict it. Scientists have also sought evidence of long-term solar periodicities by examining indirect climatological data, such as fossil records of the thickness of ancient tree rings. These (25) studies, however, failed to link unequivocally terrestrial climate and the solar-activity cycle, or even to confirm the cycle's past existence.

(30) (35) If consistent and reliable geological or archaeological evidence tracing the solar-activity cycle in the distant past could be found, it might also resolve an important issue in solar physics: how to model solar activity. Currently, there are two models of solar activity. The first (40) supposes that the Sun's internal motions (caused by rotation and convection) interact with its large-scale magnetic field to produce a dynamo, a device in which mechanical energy is converted into the energy of a magnetic field. In short, the Sun's large-scale magnetic field is taken to be self-sustaining, so that the solar-activity cycle it drives would be maintained with little overall (45) change for perhaps billions of years. The alternative explanation supposes that the Sun's large-scale magnetic field is a remnant of the field the Sun acquired when it formed, and is not sustained against decay. In this model, the solar mechanism dependent on the Sun's (50) magnetic field runs down more quickly. Thus, the characteristics of the solar-activity cycle could be expected to change over a long period of time. Modern solar observations span too short a time to reveal whether present cyclical solar activity is a long-lived feature of the Sun, or merely a transient phenomenon.

17. The author focuses primarily on

- (A) presenting two competing scientific theories concerning solar activity and evaluating geological evidence often cited to support them
- (B) giving a brief overview of some recent scientific developments in solar physics and assessing their impact on future climatological research
- (C) discussing the difficulties involved in linking terrestrial phenomena with solar activity and indicating how resolving that issue could have an impact on our understanding of solar physics
- (D) pointing out the futility of a certain line of scientific inquiry into the terrestrial effects of solar activity and recommending its abandonment in favor of purely physics-oriented research
- (E) outlining the specific reasons why a problem in solar physics has not yet been solved and faulting the overly theoretical approach of modern physicists

18. Which of the following statements about the two models of solar activity, as they are described in lines 37-55, is accurate?

- (A) In both models cyclical solar activity is regarded as a long-lived feature of the Sun, persisting with little change over billions of years.
- (B) In both models the solar-activity cycle is hypothesized as being dependent on the large-scale solar magnetic field.
- (C) In one model the Sun's magnetic field is thought to play a role in causing solar activity, whereas in the other model it is not.
- (D) In one model solar activity is presumed to be unrelated to terrestrial phenomena, whereas in the other model solar activity is thought to have observable effects on the Earth.
- (E) In one model cycles of solar activity with periodicities longer than a few decades are considered to be impossible, whereas in the other model such cycles are predicted.

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19. According to the passage, late seventeenth- and early eighteenth-century Chinese records are important for which of the following reasons?
- They suggest that the data on which the Maunder minimum was predicated were incorrect.
 - They suggest that the Maunder minimum cannot be related to climate.
 - They suggest that the Maunder minimum might be valid only for Europe.
 - They establish the existence of a span of unusually cold weather worldwide at the time of the Maunder minimum.
 - They establish that solar activity at the time of the Maunder minimum did not significantly vary from its present pattern.
20. The author implies which of the following about currently available geological and archaeological evidence concerning the solar-activity cycle?
- It best supports the model of solar activity described in lines 37-45.
 - It best supports the model of solar activity described in lines 45-52.
 - It is insufficient to confirm either model of solar activity described in the third paragraph.
 - It contradicts both models of solar activity as they are presented in the third paragraph.
 - It disproves the theory that terrestrial weather and solar activity are linked in some way.
21. It can be inferred from the passage that the argument in favor of the model described in lines 37-45 would be strengthened if which of the following were found to be true?
- Episodes of intense volcanic eruptions in the distant past occurred in cycles having very long periodicities.
 - At the present time the global level of thunderstorm activity increases and decreases in cycles with periodicities of approximately 11 years.
 - In the distant past cyclical climatic changes had periodicities of longer than 200 years.
 - In the last century the length of the sunspot cycle has been known to vary by as much as 2 years, from its average periodicity of 11 years.
 - Hundreds of millions of years ago, solar-activity cycles displayed the same periodicities as do present-day solar-activity cycles.
22. It can be inferred from the passage that Chinese observations of the Sun during the late seventeenth and early eighteenth centuries
- are ambiguous because most sunspots cannot be seen with the naked eye
 - probably were made under the same weather conditions as those made in Europe
 - are more reliable than European observations made during this period
 - record some sunspot activity during this period
 - have been employed by scientists seeking to argue that a change in solar activity occurred during this period
23. It can be inferred from the passage that studies attempting to use tree-ring thickness to locate possible links between solar periodicity and terrestrial climate are based on which of the following assumptions?
- The solar-activity cycle existed in its present form during the time period in which the tree rings grew.
 - The biological mechanisms causing tree growth are unaffected by short-term weather patterns.
 - Average tree-ring thickness varies from species to species.
 - Tree-ring thicknesses reflect changes in terrestrial climate.
 - Both terrestrial climate and the solar-activity cycle randomly affect tree-ring thickness.

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*Line
(5)*

The common belief of some linguists that each language is a perfect vehicle for the thoughts of the nation speaking it is in some ways the exact counterpart of the conviction of the Manchester school of economics that supply and demand will regulate everything for the best. Just as economists were blind to the numerous cases in which the law of supply and demand left actual wants unsatisfied, so also many linguists are deaf to those instances in which the very nature of a language calls forth misunderstandings in everyday conversation, and in which, consequently, a word has to be modified or defined in order to present the idea intended by the speaker: "He took his stick—no, not John's, but his own." No language is perfect, and if we admit this truth, we must also admit that it is not unreasonable to investigate the relative merits of different languages or of different details in languages.

*(10)
(15)*

24. The primary purpose of the passage is to
- (A) analyze an interesting feature of the English language
 - (B) refute a belief held by some linguists
 - (C) show that economic theory is relevant to linguistic study
 - (D) illustrate the confusion that can result from the improper use of language
 - (E) suggest a way in which languages can be made more nearly perfect
25. The misunderstanding presented by the author in lines 13-14 is similar to which of the following?
- I. X uses the word "you" to refer to a group, but Y thinks that X is referring to one person only.
 - II. X mistakenly uses the word "anomaly" to refer to a typical example, but Y knows that "anomaly" means "exception."
 - III. X uses the word "bachelor" to mean "unmarried man," but Y mistakenly thinks that bachelor means "unmarried woman."
- (A) I only
 - (B) II only
 - (C) III only
 - (D) I and II only
 - (E) II and III only

26. In presenting the argument, the author does all of the following EXCEPT
- (A) give an example
 - (B) draw a conclusion
 - (C) make a generalization
 - (D) make a comparison
 - (E) present a paradox
27. Which of the following contributes to the misunderstanding described by the author in lines 13-14?
- (A) It is unclear whom the speaker of the sentence is addressing.
 - (B) It is unclear to whom the word "his" refers the first time it is used.
 - (C) It is unclear to whom the word "his" refers the second time it is used.
 - (D) The meaning of "took" is ambiguous.
 - (E) It is unclear to whom "He" refers.

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8. The company should not be held responsible for failing to correct the control-panel problem that caused the accident. Although the problem had been mentioned earlier in a safety inspector's report, companies receive hundreds of reports of such problems, and Industry Standard No. 42 requires action on these problems only when an accident is foreseeable.

If the second sentence in the paragraph above is factually correct, the answer to which of the following questions is most relevant in helping to determine whether or not the company violated Industry Standard No. 42 when it failed to correct the control-panel problem?

- (A) Was the accident serious?
- (B) Was the control-panel problem of a type that is known to indicate that an accident is likely?
- (C) Since the accident, has the company done a special safety check on all control panels?
- (D) Did the safety inspector mention more than one problem in the same report?
- (E) How long was the control panel in use before the problem was discovered?

9. Riothamus, a fifth-century king of the Britons, was betrayed by an associate, fought bravely against the Goths but was defeated, and disappeared mysteriously. Riothamus' activities, and only those of Riothamus, match almost exactly those attributed to King Arthur. Therefore, Riothamus must be the historical model for the legendary King Arthur.

The argument above requires at least one additional premise. Which of the following could be such a required premise?

- (A) Modern historians have documented the activities of Riothamus better than those of any other fifth-century king.
- (B) The stories told about King Arthur are not strictly fictitious but are based on a historical person and historical events.
- (C) Riothamus' associates were the authors of the original legends about King Arthur.
- (D) Legends about the fifth century usually embellish and romanticize the actual conditions of the lives of fifth-century nobility.
- (E) Posterity usually remembers legends better than it remembers the actual historical events on which they are based.

10. A worldwide ban on the production of certain ozone-destroying chemicals would provide only an illusion of protection. Quantities of such chemicals, already produced, exist as coolants in millions of refrigerators. When they reach the ozone layer in the atmosphere, their action cannot be halted. So there is no way to prevent these chemicals from damaging the ozone layer further.

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

- (A) It is impossible to measure with accuracy the quantity of ozone-destroying chemicals that exist as coolants in refrigerators.
- (B) In modern societies, refrigeration of food is necessary to prevent unhealthy and potentially life-threatening conditions.
- (C) Replacement chemicals that will not destroy ozone have not yet been developed and would be more expensive than the chemicals now used as coolants in refrigerators.
- (D) Even if people should give up the use of refrigeration, the coolants already in existing refrigerators are a threat to atmospheric ozone.
- (E) The coolants in refrigerators can be fully recovered at the end of the useful life of the refrigerators and reused.

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24. A recent study of an insurance company's underwriters indicated that those who worked in pleasant physical surroundings were 25 percent more productive than their peers in unpleasant physical surroundings. Objective criteria for evaluating job performance included caseload and complexity of cases. This shows that improving workers' environments increases those workers' productivity.

Which of the following, if true, most seriously weakens the conclusion above?

- (A) On average, less-productive employees spend no fewer hours per day at their workstations than do their more-productive peers.
- (B) Unpleasant surroundings give employees less motivation to work hard than more pleasant surroundings do.
- (C) The more-productive employees are generally rewarded with pleasant office space.
- (D) More-productive employees do not work any more hours than their less-productive peers.
- (E) Peer pressure discourages employees in crowded, unpleasant surroundings from making phone calls to their own family members during work time.

25. In a certain country, individuals tend to change their political affiliation readily from one political party to another. In the past the Union party grew larger because of this tendency, but although most of those who change to a new party affiliation change to the Union party, the Union party has remained about the same size in recent years.

Which of the following, if true, best helps to explain the change in the growth pattern of the Union party mentioned above?

- (A) The economy has been prospering recently, and many of those who change party affiliation are upwardly mobile and prosperous.
- (B) In recent years those who were previously nonaffiliated have tended to join the Union party if they joined any party at all.
- (C) The percentage of voting-age citizens who change political party affiliation each year has remained constant, and the number of voting-age citizens has remained the same.
- (D) The percentage of voting-age citizens who are affiliated with any political party has increased over the last ten years.
- (E) Many members of the Union party have abandoned all political party affiliation in recent years.

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The senator's reputation, though ----- by false allegations of misconduct, emerged from the ordeal -----.
(A) shaken..unscathed
(B) destroyed..intact
(C) damaged..impaired
(D) impugned..unclear
(E) tarnished..sullied
2. This poetry is not -----; it is more likely to appeal to an international audience than is poetry with strictly regional themes.
(A) familiar (B) democratic (C) technical
(D) complex (E) provincial
3. Experienced employers recognize that business students who can ----- different points of view are ultimately more effective as managers than are the brilliant and original students who ----- dogmatically to their own formulations.
(A) discredit..revert (B) assimilate..adhere
(C) impose..refer (D) disregard..incline
(E) advocate..relate
4. Poe's ----- reviews of contemporary fiction, which often find great merit in otherwise ----- literary gems, must make us respect his critical judgment in addition to his well-known literary talent.
(A) thorough..completed
(B) petulant..unpopular
(C) insightful..unappreciated
(D) enthusiastic..acclaimed
(E) harsh..undeserving
5. The significance of the Magna Carta lies not in its ----- provisions, but in its broader impact: it made the king subject to the law.
(A) specific (B) revolutionary (C) implicit
(D) controversial (E) finite
6. The theory of cosmic evolution states that the universe, having begun in a state of simplicity and -----, has ----- into great variety.
(A) equilibrium..modulated
(B) homogeneity..differentiated
(C) contrast..metamorphosed
(D) proportion..accelerated
(E) intelligibility..developed
7. Not wishing to appear -----, the junior member of the research group refrained from ----- any criticism of the senior members' plan for dividing up responsibility for the entire project.
(A) reluctant..evaluating
(B) inquisitive..offering
(C) presumptuous..venturing
(D) censorious..undercutting
(E) moralistic..observing

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line
(5) It is frequently assumed that the mechanization of work has a revolutionary effect on the lives of the people who operate the new machines and on the society into which the machines have been introduced. For example, it has been suggested that the employment of women in industry took them out of the household, their traditional sphere, and fundamentally altered their position in society. In the nineteenth century, when women began to enter factories, Jules Simon, a French politician, warned that by doing so, women would give up their femininity. Friedrich Engels, however, predicted that women would be liberated from the "social, legal, and economic subordination" of the family by technological developments that made possible the recruitment of "the whole female sex . . . into public industry." Observers thus differed concerning the social desirability of mechanization's effects, but they agreed that it would transform women's lives.

(10)

(15)

(20) Historians, particularly those investigating the history of women, now seriously question this assumption of transforming power. They conclude that such dramatic technological innovations as the spinning jenny, the sewing machine, the typewriter, and the vacuum cleaner have not resulted in equally dramatic social changes in women's economic position or in the prevailing evaluation of women's work. The employment of young women in textile mills during the Industrial Revolution was largely an extension of an older pattern of employment of young, single women as domestics. It was not the change in office technology, but rather the separation of secretarial work, previously seen as an apprenticeship for beginning managers, from administrative work that in the 1880's created a new class of "dead-end" jobs, thenceforth considered "women's work." The increase in the numbers of married women employed outside the home in the twentieth century had less to do with the mechanization of housework and an increase in leisure time for these women than it did with their own economic necessity and with high marriage rates that shrank the available pool of single women workers, previously, in many cases, the only women employers would hire.

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(35)

(40)

(45) Women's work has changed considerably in the past 200 years, moving from the household to the office or the factory, and later becoming mostly white-collar instead of blue-collar work. Fundamentally, however, the conditions under which women work have changed little since before the Industrial Revolution: the segregation of occupations by gender, lower pay for women as a group, jobs that require relatively low levels of skill and offer women little opportunity for advancement all persist, while women's household labor remains demanding. Recent historical investigation has led to a major revision of the notion that technology is always (50) inherently revolutionary in its effects on society. Mechanization may even have slowed any change in the traditional position of women both in the labor market and in the home.

(55)

17. Which of the following statements best summarizes the main idea of the passage?
- (A) The effects of the mechanization of women's work have not borne out the frequently held assumption that new technology is inherently revolutionary.
- (B) Recent studies have shown that mechanization revolutionizes a society's traditional values and the customary roles of its members.
- (C) Mechanization has caused the nature of women's work to change since the Industrial Revolution.
- (D) The mechanization of work creates whole new classes of jobs that did not previously exist.
- (E) The mechanization of women's work, while extremely revolutionary in its effects, has not, on the whole, had the deleterious effects that some critics had feared.
18. The author mentions all of the following inventions as examples of dramatic technological innovations EXCEPT the
- (A) sewing machine (B) vacuum cleaner
(C) typewriter (D) telephone
(E) spinning jenny
19. It can be inferred from the passage that, before the Industrial Revolution, the majority of women's work was done in which of the following settings?
- (A) Textile mills (B) Private households
(C) Offices (D) Factories (E) Small shops

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20. It can be inferred from the passage that the author would consider which of the following to be an indication of a fundamental alteration in the conditions of women's work?
- (A) Statistics showing that the majority of women now occupy white-collar positions
(B) Interviews with married men indicating that they are now doing some household tasks
(C) Surveys of the labor market documenting the recent creation of a new class of jobs in electronics in which women workers outnumber men four to one
(D) Census results showing that working women's wages and salaries are, on the average, as high as those of working men
(E) Enrollment figures from universities demonstrating that increasing numbers of young women are choosing to continue their education beyond the undergraduate level
21. The passage states that, before the twentieth century, which of the following was true of many employers?
- (A) They did not employ women in factories.
(B) They tended to employ single rather than married women.
(C) They employed women in only those jobs that were related to women's traditional household work.
(D) They resisted technological innovations that would radically change women's roles in the family.
(E) They hired women only when qualified men were not available to fill the open positions.
22. It can be inferred from the passage that the author most probably believes which of the following to be true concerning those historians who study the history of women?
- (A) Their work provides insights important to those examining social phenomena affecting the lives of both sexes.
(B) Their work can only be used cautiously by scholars in other disciplines.
(C) Because they concentrate only on the role of women in the workplace, they draw more reliable conclusions than do other historians.
(D) While highly interesting, their work has not had an impact on most historians' current assumptions concerning the revolutionary effect of technology in the workplace.
(E) They oppose the further mechanization of work, which, according to their findings, tends to perpetuate existing inequalities in society.
23. Which of the following best describes the function of the concluding sentence of the passage?
- (A) It sums up the general points concerning the mechanization of work made in the passage as a whole.
(B) It draws a conclusion concerning the effects of the mechanization of work which goes beyond the evidence presented in the passage as a whole.
(C) It restates the point concerning technology made in the sentence immediately preceding it.
(D) It qualifies the author's agreement with scholars who argue for a major revision in the assessment of the impact of mechanization on society.
(E) It suggests a compromise between two seemingly contradictory views concerning the effects of mechanization on society.

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(This passage is excerpted from an article that was published in 1982.)

Line
(5) Warm-blooded animals have elaborate physiological controls to maintain constant body temperature (in humans, 37° C). Why then during sickness should temperature rise, apparently increasing stress on the infected organism? It has long been known that the level of serum iron in animals falls during infection. Garibaldi first suggested a relationship between fever and iron. He found that microbial synthesis of siderophores—
(10) substances that bind iron—in bacteria of the genus *Salmonella* declined at environmental temperatures above 37° C and stopped at 40.3° C. Thus, fever would make it more difficult for an infecting bacterium to acquire iron and thus to multiply. Cold-blooded animals were used to test this hypothesis because their body
(15) temperature can be controlled in the laboratory. Kluger reported that of iguanas infected with the potentially lethal bacterium *A. hydrophilia*, more survived at temperatures of 42° C than at 37° C, even though healthy animals prefer the lower temperature. When animals at 42° C were injected with an iron solution, however, mortality rates increased significantly.
(20) Research to determine whether similar phenomena occur in warm-blooded animals is sorely needed.

24. The passage is primarily concerned with attempts to determine
- (A) the role of siderophores in the synthesis of serum iron
 - (B) new treatments for infections that are caused by *A. hydrophilia*
 - (C) the function of fever in warm-blooded animals
 - (D) the mechanisms that ensure constant body temperature
 - (E) iron utilization in cold-blooded animals
25. According to the passage, Garibaldi determined which of the following?
- (A) That serum iron is produced through microbial synthesis
 - (B) That microbial synthesis of siderophores in warm-blooded animals is more efficient at higher temperatures
 - (C) That only iron bound to other substances can be used by bacteria
 - (D) That there is a relationship between the synthesis of siderophores in bacteria of the genus *Salmonella* and environmental temperature
 - (E) That bacteria of the genus *Salmonella* require iron as a nutrient

26. Which of the following can be inferred about warm-blooded animals solely on the basis of information in the passage?
- (A) The body temperatures of warm-blooded animals cannot be easily controlled in the laboratory.
 - (B) Warm-blooded animals require more iron in periods of stress than they do at other times.
 - (C) Warm-blooded animals are more comfortable at an environmental temperature of 37° C than they are at a temperature of 42° C.
 - (D) In warm-blooded animals, bacteria are responsible for the production of siderophores, which, in turn, make iron available to the animal.
 - (E) In warm-blooded animals, infections that lead to fever are usually traceable to bacteria.
27. If it were to be determined that “similar phenomena occur in warm-blooded animals” (lines 21-22), which of the following, assuming each is possible, is likely to be the most effective treatment for warm-blooded animals with bacterial infections?
- (A) Administering a medication that lowers the animals’ body temperature
 - (B) Injecting the animals with an iron solution
 - (C) Administering a medication that makes serum iron unavailable to bacteria
 - (D) Providing the animals with reduced-iron diets
 - (E) Keeping the animals in an environment with temperatures higher than 37° C

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5. Most television viewers estimate how frequently a particular type of accident or crime occurs by how extensively it is discussed on television news shows. Television news shows report more on stories that include dramatic pictures such as fires and motor vehicle accidents than they do on more common stories that have little visual drama such as bookkeeping fraud.

If the statements above are true, it can be properly concluded that which of the following is also true?

- (A) The time that television news reporters spend researching news stories is directly related to the number of viewers who will be affected by events like those in the news stories.
- (B) It is easier for crimes such as bookkeeping fraud to go unprosecuted than it is for crimes such as arson.
- (C) The number of fires and motor vehicle accidents greatly increases after each television news show that includes dramatic pictures of a fire or motor vehicle accident.
- (D) Viewers of television news shows tend to overestimate the number of fires and motor vehicle accidents that occur relative to the number of crimes of bookkeeping fraud.
- (E) The usual selection of news stories for television news shows is determined by the number of news reporters available for assignment.

6. According to one psychological theory, in order to be happy, one must have an intimate relationship with another person. Yet the world's greatest composers spent most of their time in solitude and had no intimate relationships. So the psychological theory must be wrong.

The conclusion above assumes that

- (A) the world's greatest composers chose to avoid intimate relationships
- (B) people who have intimate relationships spend little time in solitude
- (C) solitude is necessary for the composition of great music
- (D) less well known composers had intimate relationships
- (E) the world's greatest composers were happy

7. Every member of the Progress party in a certain city council voted against appropriating funds to build a new bridge. All city council members voted on the bridge-appropriation issue. A simple majority of votes was needed to pass the bill.

Which of the following statements, if true, would provide sufficient information to tell whether or not the bridge appropriation bill passed?

- (A) The Progress party holds a majority of seats on the city council.
- (B) Less than half of the members of the other parties all taken together voted against the bridge appropriation.
- (C) No other council members voted against the bridge appropriation.
- (D) Three-fourths of the votes cast against the appropriation were by members of the Progress party.
- (E) Every member of the city council is either a member of the Popular party or a member of the Progress party.

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23. A common defense of sport hunting is that it serves a vital wildlife-management function, without which countless animals would succumb to starvation and disease. This defense leads to the overly hasty conclusion that sport hunting produces a healthier population of animals.

Which of the following, if true, best supports the author's claim that sport hunting does not necessarily produce a healthier population of animals?

- (A) For many economically depressed families, hunting helps keep food on the table.
 - (B) Wildlife species encroach on farm crops when other food supplies become scarce.
 - (C) Overpopulation of a species causes both strong and weak animals to suffer.
 - (D) Sport hunters tend to pursue the biggest and healthiest animals in a population.
 - (E) Many people have strong moral objections to killing a creature for any reason other than self-defense.
24. Two suits of battle armor worn by King Henry VIII were discovered, one from the beginning of his reign in 1510 and the other from 1540. Although both suits of armor were made for Henry VIII, the 1540 suit of armor was 40 pounds heavier than the 1510 suit of armor.
- Which of the following, if true, contributes LEAST to an explanation of the discrepancy described above?
- (A) Henry, although slim at the beginning of his reign, developed a bulky figure because of massive weight gain.
 - (B) During his reign Henry increased his arsenal of weapons because, despite his popularity in 1510, by 1540 the English populace was becoming disenchanted with his rule.
 - (C) Although the style of armor was plain and severe in the beginning of Henry's reign, he started the fashion of decorating armor with heavy and elaborate metal pieces because of his love for ornamentation.
 - (D) Henry ascended the throne while still an adolescent and grew three inches during his first five years as king.
 - (E) Because of the improved design of battle weaponry during the 1530's, armor was given a multilayered design so that the sharper and stronger weapons could not pierce it.

25. Government department head: We already have a code of ethics that companies doing business with the department are urged to abide by. The fact that virtually all of the companies have agreed to abide by it indicates that it is successful. Therefore, neither stronger ethics regulations nor enforcement mechanisms are necessary to ensure ethical behavior by companies doing business with the department.

Which of the following, if true, casts most doubt on the department head's conclusion?

- (A) The code of ethics applies only to companies that do business with the department.
- (B) The code of ethics was instituted only after it was discovered that several companies had committed serious violations of ethics in their business with the department.
- (C) A government investigation found that most of the companies that agreed to abide by the department's code of ethics are not complying with it.
- (D) A survey of major companies found that several companies stopped doing business with the department because they did not want to agree to abide by the code of ethics.
- (E) A study of codes of ethics for companies found that the codes are most effective when the top executives of companies that agree to abide by them are fully committed to following them.

TEST 2

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. In the British theater young people under thirty-five have not had much ----- getting recognition onstage, but offstage—in the ranks of playwrights, directors, designers, administrators—they have mostly been relegated to relative obscurity.
(A) trouble (B) satisfaction (C) curiosity about
(D) success at (E) fear of
2. An institution concerned about its reputation is at the mercy of the actions of its members, because the misdeeds of individuals are often used to ----- the institutions of which they are a part.
(A) reform (B) coerce (C) honor
(D) discredit (E) intimidate
3. Since many casual smokers develop lung cancer and many ----- smokers do not, scientists believe that individuals differ in their ----- the cancer-causing agents known to be present in cigarette smoke.
(A) heavy..susceptibility to
(B) chronic..concern about
(C) habitual..proximity to
(D) devoted..reliance upon
(E) regular..exposure to
4. We accepted the theory that as people become more independent of one another, they begin to feel so isolated and lonely that freedom becomes ----- condition that most will seek to -----.
(A) a permanent..postpone
(B) a common..enter
(C) a negative..escape
(D) a political..impose
(E) an irreparable..avoid
5. If animal parents were judged by human standards, the cuckoo would be one of nature's more ----- creatures, blithely laying its eggs in the nests of other birds, and leaving the incubating and nurturing to them.
(A) mettlesome (B) industrious (C) domestic
(D) lackluster (E) feckless
6. The current penchant for ----- a product by denigrating a rival, named in the advertisement by brand name, seems somewhat -----: suppose the consumer remembers only the rival's name?
(A) criticizing..inefficient
(B) touting..foolhardy
(C) enhancing..insipid
(D) evaluating..cumbersome
(E) flaunting..gullible
7. His imperturbability in the face of evidence indicating his deliberate fraud failed to reassure supporters of his essential ----- ; instead, it suggested a talent for ----- that they had never suspected.
(A) culpability..intrigue (B) wisdom..reproach
(C) remorse..loquacity (D) probity..guile
(E) combativeness..compromise

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

(This passage is from an article published in 1973)

The recent change to all-volunteer armed forces in the United States will eventually produce a gradual increase in the proportion of women in the armed forces and in the variety of women's assignments, but probably (5) not the dramatic gains for women that might have been expected. This is so even though the armed forces operate in an ethos of institutional change oriented toward occupational equality and under the federal sanction of equal pay for equal work. The difficulty is that women are (10) unlikely to be trained for any direct combat operations. A significant portion of the larger society remains uncomfortable as yet with extending equality in this direction. Therefore, for women in the military, the search for (15) equality will still be based on functional equivalence, not identity or even similarity of task. Opportunities seem certain to arise. The growing emphasis on deterrence is bound to offer increasing scope for women to become involved in novel types of noncombat military assignments.

17. The primary purpose of the passage is to

- (A) present an overview of the different types of assignments available to women in the new United States all-volunteer armed forces
- (B) present a reasoned prognosis of the status of women in the new United States all-volunteer armed forces
- (C) present the new United States all-volunteer armed forces as a model case of equal employment policies in action
- (D) analyze reforms in the new United States all-volunteer armed forces necessitated by the increasing number of women in the military
- (E) analyze the use of functional equivalence as a substitute for occupational equality in the new United States all-volunteer armed forces

- Line
(5) 18. According to the passage, despite the United States armed forces' commitment to occupational equality for women in the military, certain other factors preclude women's
- (A) receiving equal pay for equal work
 - (B) having access to positions of responsibility at most levels
 - (C) drawing assignments from a wider range of assignments than before
 - (D) benefiting from opportunities arising from new noncombat functions
 - (E) being assigned all of the military tasks that are assigned to men
- (10) 19. The passage implies that which of the following is a factor conducive to a more equitable representation of women in the United States armed forces than has existed in the past?
- (A) The all-volunteer character of the present armed forces
 - (B) The past service records of women who had assignments functionally equivalent to men's assignments
 - (C) The level of awareness on the part of the larger society of military issues
 - (D) A decline in the proportion of deterrence-oriented noncombat assignments
 - (E) Restrictive past policies governing the military assignments open to women
- (15) 20. The "dramatic gains for women" (line 5) and the attitude, as described in lines 11-12, of a "significant portion of the larger society" are logically related to each other inasmuch as the author puts forward the latter as
- (A) a public response to achievement of the former
 - (B) the major reason for absence of the former
 - (C) a precondition for any prospect of achieving the former
 - (D) a catalyst for a further extension of the former
 - (E) a reason for some of the former being lost again

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Line
(5) Of the thousands of specimens of meteorites found on Earth and known to science, only about 100 are igneous; that is, they have undergone melting by volcanic action at some time since the planets were first formed. These igneous meteorites are known as achondrites because they lack chondrules—small stony spherules found in the thousands of meteorites (called “chondrites”) composed primarily of unaltered minerals that condensed from dust and gas at the origin of the solar system. Achondrites are the only known samples of volcanic rocks originating outside the Earth-Moon system. Most are thought to have been dislodged by interbody impact from asteroids, with diameters of from 10 to 500 kilometers, in solar orbit between Mars and Jupiter.

(10) (15)

Shergottites, the name given to three anomalous achondrites so far discovered on Earth, present scientists with a genuine enigma. Shergottites crystallized from molten rock less than 1.1 billion years ago (some (20) 3.5 billion years later than typical achondrites) and were presumably ejected into space when an object impacted on a body similar in chemical composition to Earth.

While most meteorites appear to derive from comparatively small bodies, shergottites exhibit properties that indicate that their source was a large planet, conceivably Mars. In order to account for such an unlikely source, some unusual factor must be invoked, because the impact needed to accelerate a fragment of rock to escape the gravitational field of a body even as small as the (25) Moon is so great that no meteorites of lunar origin have been discovered.

While some scientists speculate that shergottites derive from Io (a volcanically active moon of Jupiter), recent measurements suggest that since Io’s surface is (30) rich in sulfur and sodium, the chemical composition of its volcanic products would probably be unlike that of the shergottites. Moreover, any fragments dislodged from Io by interbody impact would be unlikely to escape the gravitational pull of Jupiter.

The only other logical source of shergottites is Mars. Space-probe photographs indicate the existence of giant (35) volcanoes on the Martian surface. From the small number of impact craters that appear on Martian lava flows, one can estimate that the planet was volcanically active as recently as a half-billion years ago—and may be active today. The great objection to the Martian origin of shergottites is the absence of lunar meteorites on Earth. An impact capable of ejecting a fragment of the Martian surface into an Earth-intersecting orbit is (40) even less probable than such an event on the Moon, in view of the Moon’s smaller size and closer proximity to Earth. A recent study suggests, however, that permafrost ices below the surface of Mars may have altered the effects of impact on it. If the ices had been rapidly vaporized by an impacting object, the expanding gases might (45) have helped the ejected fragments reach escape velocity. Finally, analyses performed by space probes show a remarkable chemical similarity between Martian soil and the shergottites.

21. The passage implies which of the following about shergottites?
- They are products of volcanic activity.
 - They derive from a planet larger than Earth.
 - They come from a planetary body with a chemical composition similar to that of Io.
- (A) I only
(B) II only
(C) I and II only
(D) II and III only
(E) I, II, and III
22. According to the passage, a meteorite discovered on Earth is unlikely to have come from a large planet for which of the following reasons?
- There are fewer large planets in the solar system than there are asteroids.
 - Most large planets have been volcanically inactive for more than a billion years.
 - The gravitational pull of a large planet would probably prohibit fragments from escaping its orbit.
 - There are no chondrites occurring naturally on Earth and probably none on other large planets.
 - Interbody impact is much rarer on large than on small planets because of the density of the atmosphere on large planets.
23. The passage suggests that the age of shergottites is probably
- still entirely undetermined
 - less than that of most other achondrites
 - about 3.5 billion years
 - the same as that of typical achondrites
 - greater than that of the Earth

GO ON TO THE NEXT PAGE.

24. According to the passage, the presence of chondrules in a meteorite indicates that the meteorite
- (A) has probably come from Mars
 - (B) is older than the solar system itself
 - (C) has not been melted since the solar system formed
 - (D) is certainly less than 4 billion years old
 - (E) is a small fragment of an asteroid
25. The passage provides information to answer which of the following questions?
- (A) What is the precise age of the solar system?
 - (B) How did shergottites get their name?
 - (C) What are the chemical properties shared by shergottites and Martian soils?
 - (D) How volcanically active is the planet Jupiter?
 - (E) What is a major feature of the Martian surface?
26. It can be inferred from the passage that each of the following is a consideration in determining whether a particular planet is a possible source of shergottites that have been discovered on Earth EXCEPT the
- (A) planet's size
 - (B) planet's distance from Earth
 - (C) strength of the planet's field of gravity
 - (D) proximity of the planet to its moons
 - (E) chemical composition of the planet's surface
27. It can be inferred from the passage that most meteorites found on Earth contain which of the following?
- (A) Crystals
 - (B) Chondrules
 - (C) Metals
 - (D) Sodium
 - (E) Sulfur

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7. The federal government expects hospitals to perform 10,000 organ transplants next year. But it is doubtful that this many donor organs will be available, since the number of fatalities resulting from car and motorcycle accidents has been dropping steadily over the past decade.

The argument above makes which of the following assumptions?

- (A) A significant number of the organs used in transplants come from people who die in car and motorcycle accidents.
 - (B) The number of car and motorcycle accidents will increase significantly during the next year.
 - (C) No more than 10,000 people will be in need of organ transplants during the next year.
 - (D) In the past the federal government's estimates of the number of organ transplants needed during a given year have been very unreliable.
 - (E) For any given fatality resulting from a car or motorcycle accident, there is a hospital in the vicinity in need of an organ for a transplant.
8. Verbal patterns in four works known to be written by a certain author were compared to those in a work of uncertain authorship sometimes attributed to that author. Many patterns were studied, including frequency of specific words and recurrence of certain phrases. The questioned work displayed verbal patterns very similar to those in the other four works, establishing that the same author wrote all five.
- Which of the following, if true, best supports the conclusion above?
- (A) No two writers are likely to display similar verbal patterns in their works.
 - (B) Writers from different historical periods sometimes use the same words and phrases, but the meanings of such words and phrases change over time.
 - (C) Many writers consciously attempt to experiment with innovative verbal patterns in each new work.
 - (D) A relatively small number of words in any language occur with great frequency, and those words make up the largest portion of all discourse.
 - (E) Word choice is generally considered an insignificant component of an author's style.
9. Because incumbent members of Congress are given a great deal of attention by the news media and because they enjoy such perquisites as free mail privileges and generous travel allowances, incumbents enjoy an overwhelming advantage over their challengers in elections for the United States Congress.

Which of the following, if true, best supports the claim above?

- (A) In the last congressional elections, incumbents met with a larger number of lobbyists than did challengers.
- (B) In the last congressional elections, 98 percent of the incumbents in the House of Representatives who were seeking reelection won.
- (C) Incumbent members of Congress are frequently critical of the amount of attention given to them by the news media.
- (D) The support that political action committees provide to challengers for congressional seats often compensates for the perquisites enjoyed by incumbent members of Congress.
- (E) Of all incumbent senators surveyed before the last congressional elections, 78 percent said that their challengers did not pose a serious threat to their chances for reelection.

GO ON TO THE NEXT PAGE.

23. Instead of relying on general tax revenue, as it now does, the government should rely more heavily on passenger fares to finance public bus and train service. In order for public transportation to be maintained without cutting service, users should pay all the operating costs even if these costs should increase. Such charges would be fair since only users benefit from public transportation.

Which of the following is a principle on which the position above could be based?

- (A) The number of users of a public service should determine the amount of governmental financial support for the service.
- (B) The amount of public transportation provided should be dependent on the operating cost of each transportation service.
- (C) If necessary, general taxes should be raised to ensure that public transportation services are provided.
- (D) The government should provide support from general tax revenue to any transportation industry that has passenger service available to the public.
- (E) General tax revenues should not be used to finance public services that benefit a limited number of people.

24. When the manufacturer of Voltage, a major soft drink, changed its secret formula last year, the export earnings of an island in the Indian Ocean began to fall. This island's only export comprises more than half of the world's supply of vanilla beans. Analysts concluded that the original formula of Voltage contained vanilla from beans, but the new formula did not.

Which of the following, if true, would most strengthen the conclusion drawn by the analysts?

- (A) The vanilla-bean plantings of a nearby island were beginning to produce crops.
- (B) A new process for synthesizing vanilla was under development in a laboratory in the United States.
- (C) The island's trade agreement, under which the vanilla beans were exported to the country that manufactures Voltage, had lapsed.
- (D) Imports of vanilla beans dropped in countries where Voltage is made.
- (E) There were decreases in sales of several widely sold products that were known to contain vanilla.

25. Carol is shorter than Juan, but she is taller than Ed. Sandra is shorter than Juan, and she is shorter than Ed. Wallie is taller than Sandra, but shorter than Juan.

If the statements above are true, one can validly conclude that Bill is shorter than Carol if it is true that

- (A) Carol is equal in height to Wallie
- (B) Wallie is equal in height to Bill
- (C) Bill is taller than Sandra, but shorter than Wallie
- (D) Bill is shorter than Juan, but taller than Ed
- (E) Wallie is taller than Bill, but shorter than Ed

SECTION 4
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Although providing wild chimpanzees with food makes them less ----- and easier to study, it is also known to ----- their normal social patterns.
(A) interesting..reinforce (B) manageable..upset
(C) shy..disrupt (D) poised..inhibit
(E) accessible..retard
2. There is something ----- about the way the building of monasteries proliferated in eighteenth-century Bavaria, while in the rest of the Western world religious ardor was ----- and church building was consequently declining.
(A) enigmatic..coalescing
(B) destructive..changing
(C) immutable..dissipating
(D) incongruous..diminishing
(E) momentous..diversifying
3. Because they had various meanings in nineteenth-century biological thought, “mechanism” and “vitalism” ought not to be considered ----- terms; thus, I find the recent insistence that the terms had single definitions to be entirely -----.
(A) univocal..erroneous
(B) problematic..anachronistic
(C) intractable..obtuse
(D) congruent..suspect
(E) multifaceted..vapid
4. Many Americans believe that individual initiative epitomized the 1890’s and see the entrepreneur as the ----- of that age.
(A) caricature (B) salvation (C) throwback
(D) aberration (E) personification
5. Neither the ideas of philosophers nor the practices of ordinary people can, by themselves, ----- reality; what in fact changes reality and kindles revolution is the ----- of the two.
(A) constitute..divergence
(B) affect..aim
(C) transform..interplay
(D) preserve..conjunction
(E) alter..intervention
6. There has been a tendency among art historians not so much to revise as to eliminate the concept of the Renaissance—to ----- not only its uniqueness, but its very existence.
(A) explain (B) extol (C) transmute
(D) regret (E) contest
7. Employees had become so inured to the caprices of top management’s personnel policies that they greeted the announcement of a company-wide dress code with-----.
(A) astonishment (B) impassivity
(C) resentment (D) apprehension (E) confusion

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line (5) The transplantation of organs from one individual to another normally involves two major problems: (1) organ rejection is likely unless the transplantation antigens of both individuals are nearly identical, and (2) the introduction of any unmatched transplantation antigens induces the development by the recipient of donor-specific lymphocytes that will produce violent rejection of further transplants from that donor. However, we have found that among many strains of rats these "normal" rules of transplantation are not obeyed by liver transplants. Not only are liver transplants never rejected, but they even induce a state of donor-specific unresponsiveness in which subsequent transplants of other organs, such as skin, from that donor are accepted permanently. Our hypothesis is that (1) many strains of rats simply cannot mount a sufficiently vigorous destructive immune-response (using lymphocytes) to outstrip the liver's relatively great capacity to protect itself from immune-response damage and that (2) the systemic unresponsiveness observed is due to concentration of the recipient's donor-specific lymphocytes at the site of the liver transplant.

(10) (15) (20)

17. The primary purpose of the passage is to treat the accepted generalizations about organ transplantation in which of the following ways?

- (A) Explicate their main features
- (B) Suggest an alternative to them
- (C) Examine their virtues and limitations
- (D) Criticize the major evidence used to support them
- (E) Present findings that qualify them

18. It can be inferred from the passage that the author believes that an important difference among strains of rats is the

- (A) size of their livers
- (B) constitution of their skin
- (C) strength of their immune-response reactions
- (D) sensitivity of their antigens
- (E) adaptability of their lymphocytes

19. According to the hypothesis of the author, after a successful liver transplant, the reason that rats do not reject further transplants of other organs from the same donor is that the

- (A) transplantation antigens of the donor and the recipient become matched
- (B) lymphocytes of the recipient are weakened by the activity of the transplanted liver
- (C) subsequently transplanted organ is able to repair the damage caused by the recipient's immune-response reaction
- (D) transplanted liver continues to be the primary locus for the recipient's immune-response reaction
- (E) recipient is unable to manufacture the lymphocytes necessary for the immune-response reaction

20. Which of the following new findings about strains of rats that do not normally reject liver transplants, if true, would support the authors' hypothesis?

- I. Stomach transplants are accepted by the recipients in all cases.
 - II. Increasing the strength of the recipient's immune-response reaction can induce liver-transplant rejection.
 - III. Organs from any other donor can be transplanted without rejection after liver transplantation.
 - IV. Preventing lymphocytes from being concentrated at the liver transplant produces acceptance of skin transplants.
- (A) II only
 - (B) I and III only
 - (C) II and IV only
 - (D) I, II, and III only
 - (E) I, III, and IV only

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*Line
(5)*
Practically speaking, the artistic maturing of the cinema was the single-handed achievement of David W. Griffith (1875-1948). Before Griffith, photography in dramatic films consisted of little more than placing the actors before a stationary camera and showing them in full length as they would have appeared on stage. From the beginning of his career as a director, however, Griffith, because of his love of Victorian painting, employed composition. He conceived of the camera image as having a foreground and a rear ground, as well as the middle distance preferred by most directors. By 1910 he was using close-ups to reveal significant details of the scene or of the acting and extreme long shots to achieve a sense of spectacle and distance. His appreciation of the camera's possibilities produced novel dramatic effects. By splitting an event into fragments and recording each from the most suitable camera position, he could significantly vary the emphasis from camera shot to camera shot.

*(10)
(15)
(20)
(25)
(30)
(35)
(40)*
Griffith also achieved dramatic effects by means of creative editing. By juxtaposing images and varying the speed and rhythm of their presentation, he could control the dramatic intensity of the events as the story progressed. Despite the reluctance of his producers, who feared that the public would not be able to follow a plot that was made up of such juxtaposed images, Griffith persisted, and experimented as well with other elements of cinematic syntax that have become standard ever since. These included the flashback, permitting broad psychological and emotional exploration as well as narrative that was not chronological, and the crosscut between two parallel actions to heighten suspense and excitement. In thus exploiting fully the possibilities of editing, Griffith transposed devices of the Victorian novel to film and gave film mastery of time as well as space.

*(45)
(50)*
Besides developing the cinema's language, Griffith immensely broadened its range and treatment of subjects. His early output was remarkably eclectic: it included not only the standard comedies, melodramas, westerns, and thrillers, but also such novelties as adaptations from Browning and Tennyson, and treatments of social issues. As his successes mounted, his ambitions grew, and with them the whole of American cinema. When he remade *Enoch Arden* in 1911, he insisted that a subject of such importance could not be treated in the then conventional length of one reel. Griffith's introduction of the American-made multireel picture began an immense revolution. Two years later, *Judith of Bethulia*, an elaborate historicophilosophical spectacle, reached the unprecedented length of four reels, or one hour's running time. From our contemporary viewpoint, the pretensions of this film may seem a trifle ludicrous, but at the time it provoked endless debate and discussion and gave a new intellectual respectability to the cinema.

- 21. The primary purpose of the passage is to*
- (A) discuss the importance of Griffith to the development of the cinema
 - (B) describe the impact on cinema of the flashback and other editing innovations
 - (C) deplore the state of American cinema before the advent of Griffith
 - (D) analyze the changes in the cinema wrought by the introduction of the multireel film
 - (E) document Griffith's impact on the choice of subject matter in American films
- 22. The author suggests that Griffith's film innovations had a direct effect on all of the following EXCEPT*
- (A) film editing (B) camera work
 - (C) scene composing (D) sound editing
 - (E) directing
- 23. It can be inferred from the passage that before 1910 the normal running time of a film was*
- (A) 15 minutes or less
 - (B) between 15 and 30 minutes
 - (C) between 30 and 45 minutes
 - (D) between 45 minutes and 1 hour
 - (E) 1 hour or more
- 24. The author asserts that Griffith introduced all of the following into American cinema EXCEPT*
- (A) consideration of social issues
 - (B) adaptations from Tennyson
 - (C) the flashback and other editing techniques
 - (D) photographic approaches inspired by Victorian painting
 - (E) dramatic plots suggested by Victorian theater

GO ON TO THE NEXT PAGE.

25. The author suggests that Griffith's contributions to the cinema had which of the following results?
- I. Literary works, especially Victorian novels, became popular sources for film subjects.
 - II. Audience appreciation of other film directors' experimentations with cinematic syntax was increased.
 - III. Many of the artistic limitations thought to be inherent in filmmaking were shown to be really nonexistent.
- (A) II only
(B) III only
(C) I and II only
(D) II and III only
(E) I, II, and III
26. It can be inferred from the passage that Griffith would be most likely to agree with which of the following statements?
- (A) The good director will attempt to explore new ideas as quickly as possible.
 - (B) The most important element contributing to a film's success is the ability of the actors.
 - (C) The camera must be considered an integral and active element in the creation of a film.
 - (D) The cinema should emphasize serious and sober examinations of fundamental human problems.
 - (E) The proper composition of scenes in a film is more important than the details of their editing.
27. The author's attitude toward photography in the cinema before Griffith can best be described as
- (A) sympathetic (B) nostalgic (C) amused
 - (D) condescending (E) hostile

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5. Private ownership of services traditionally considered to be the responsibility of the government will typically improve those services. The turnpike system in the United States of the nineteenth century demonstrates the truth of this principle; the system, which had previously been controlled by the government, became a more reliable system when taken over by private organizations.

Which of the following describes a significant flaw in the author's argument above?

- (A) The author defends the conclusion by appealing to a person of authority.
- (B) The author distorts an opposing view in trying to show its weaknesses.
- (C) The author defends what the author perceives as a wrong action by pointing out another perceived wrong action.
- (D) The author generalizes from a sample not representative enough to establish the conclusion.
- (E) The author attributes two very different meanings to the same word.

6. A recent state survey of human resources found that the age to which secretarial school graduates are expected to live is four years in excess of the age to which other graduates of high school are expected to live. One possible conclusion is that secretarial school attendance is beneficial to one's health.

To evaluate the conclusion above, it would be most important to know the answer to which of the following questions?

- (A) Have the average age of new high school graduates and the average age of new secretarial school graduates recently increased?
- (B) Do some secretarial school graduates have college degrees?
- (C) Given that women have a greater life expectancy than men, what are the relative proportions of men and women among high school and secretarial school graduates?
- (D) Given that women have a greater life expectancy than men, what proportion of all women attend secretarial school?
- (E) Has the proportion of high school graduates who attend secretarial school increased in recent years?

7. Some insects are able to feed on the leaves of milkweed, a toxic plant, by first cutting and draining the vein that secretes the toxin. This method of detoxification guarantees that some insects will always be able to eat milkweed, because the plant could never evolve to produce a toxin that is lethal in the trace amounts left after the vein is cut.

The conclusion drawn in the passage above depends on which of the following assumptions?

- (A) The insects that successfully detoxify milkweed are not able to undergo the evolutionary changes necessary to allow them to detoxify other plants.
- (B) Unlike milkweed, other kinds of toxic plants would be able to overcome their vulnerabilities to predators through evolutionary changes.
- (C) The toxin-carrying veins of the milkweed plant can never evolve in such a way that insects cannot cut through.
- (D) The method of detoxification used by insect predators of milkweed would not successfully detoxify other kinds of toxic plants.
- (E) There are insects that use means other than draining the toxin in order to feed on toxic plants.

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23. The greater the division of labor in an economy, the greater the need for coordination. This is because increased division of labor entails a larger number of specialized producers, which results in a greater burden on managers and, potentially, in a greater number of disruptions of supply and production.

There is always more division of labor in market economies than in planned economies.

If all of the statements above are true, then which of the following must also be true?

- (A) Disruptions of supply and production are more frequent in planned economies than in market economies.
 - (B) There are more specialized producers in planned economies than in market economies.
 - (C) The need for coordination in market economies is greater than in planned economies.
 - (D) A manager's task is easier in a market economy than in a planned economy.
 - (E) Division of labor functions more effectively in market economies than in planned economies.
24. Clay absorbs radiation with time, releasing it only when heated. By heating a clay sculpture and measuring the radiation it releases, experts can determine to within a century when the sculpture was last heated. The original firing of the finished sculpture might be the occasion of that most recent heating.
- Experts who obtain the year A.D. 1450 as an estimate for a given sculpture using the method described above would thereby most seriously undermine any claim that the sculpture was made in
- (A) A.D. 1000
 - (B) A.D. 1400
 - (C) A.D. 1450
 - (D) A.D. 1500
 - (E) A.D. 1900

25. The overall operating costs borne by many small farmers are reduced when the farmers eliminate expensive commercial chemical fertilizers and pesticides in favor of crop rotation and the twice-yearly use of manure as fertilizer. Therefore, large farmers should adopt the same measures. They will then realize even greater total savings than do the small farmers.

The argument above assumes that

- (A) it is more cost-effective for small farmers to eliminate the use of commercial fertilizers and pesticides than it is for large farmers to do so
- (B) a sufficient amount of manure will be available for the fields of large farmers
- (C) large farmers would not realize similar cost benefits by using treated sewage sludge instead of commercial chemical fertilizers
- (D) large farmers generally look to small farmers for innovative ways of increasing crop yields or reducing operating costs
- (E) the smaller the farm, the more control the farmer has over operating costs

7. Wearing either a lap seat belt or a shoulder-and-lap seat belt protects passengers from the major types of injuries incurred in head-on automobile collisions. In such collisions, however, passengers wearing lap seat belts alone frequently suffer internal injuries caused by the seat belt itself. Such injuries do not occur when shoulder-and-lap seat belts are worn.

Which of the following conclusions about passengers involved in head-on automobile collisions is best supported by the statements above?

- (A) No type of seat belt provides passengers with adequate protection from injury.
- (B) The injuries that passengers most frequently incur are internal injuries.
- (C) Head-on automobile collisions cause more injuries to passengers than any other kind of automobile accident does.
- (D) It is safer for passengers to wear a shoulder-and-lap seat belt than to wear a lap seat belt alone.
- (E) It is safer for passengers to wear no seat belt than to wear a lap seat belt alone.

8. Nonprescription sunglasses shield the wearer's eyes from damaging ultraviolet sunlight. Squinting, however, provides protection from ultraviolet rays that is at least as good as the protection from nonprescription sunglasses. There is, therefore, no health advantage to be gained by wearing nonprescription sunglasses rather than squinting.

Which of the following, if true, most seriously weakens support for the conclusion above?

- (A) Many opticians offer prescription sunglasses that not only screen out ultraviolet sunlight but also provide corrective vision.
- (B) Some nonprescription sunglasses provide less protection from ultraviolet sunlight than does squinting.
- (C) Squinting strains facial muscles and causes headaches and fatigue.
- (D) Many people buy sunglasses because they feel that sunglasses are fashionable.
- (E) Some people squint even when they are wearing sunglasses.

9. Studies of workplace safety in construction and manufacturing firms have found that the rate of injuries tends to rise when the firms' work loads increase. Since inexperienced workers are often hired by these firms when work loads increase, the higher rate of injuries is undoubtedly due to a higher accident rate for inexperienced workers.

Which of the following statements, if true, would most weaken the conclusion drawn above?

- (A) Many of the inexperienced workers hired when the firms' work loads increase are hired only for temporary positions.
- (B) The studies of workplace safety were focused only on injuries that resulted in lost work-days.
- (C) There is a much higher rate of injury in construction firms than in manufacturing firms.
- (D) The accident rate for experienced workers tends to increase whenever the firms' work loads increase.
- (E) Firms that hire inexperienced workers for potentially dangerous jobs are required to provide them with training.

GO ON TO THE NEXT PAGE.

Questions 23-24

The facts show that the fear of flying in airplanes is not rational. In 1986 alone, there were 46,000 fatalities in highway accidents, but from 1980 to the present an average of only 77 per year in accidents on major domestic airlines. The rate for regional airlines was only slightly higher.

23. If the evidence cited above is accurate, which of the following would be most important to know in order to evaluate the force of that evidence?
- (A) Whether repeated airplane travel allays fear of flying in airplanes
 - (B) Whether regional and domestic airlines spend the same average amount of time per aircraft on maintenance
 - (C) How many people reported a fear of flying in airplanes that was strong enough to prevent them from traveling by air
 - (D) How many people per year have traveled by highway and how many by air since 1980
 - (E) How much higher the accident rate has been for regional airlines than for major domestic airlines since 1980
24. Which of the following, if true, would argue most strongly against the conclusion above?
- (A) Since the inventory of spare parts kept at each airport is smaller than in earlier years, planes are often delayed at an airport while parts are flown in from another airport, and then repairs are carefully made and checked.
 - (B) Air fatalities from 1980 to the present have been concentrated in the last two years, with the rate rising sharply.
 - (C) The number of reports of near collisions in midair in 1986 was less than half those in a typical year of the 1960's, even with double the traffic of the 1960's.
 - (D) Many reported near collisions in midair are closer than regulations allow but are nevertheless without actual danger.
 - (E) Between 1980 and 1986, safety improvements in the design of automobiles steadily improved their crashworthiness.
25. In 1985 a consumer agency concluded that Xylo brand bicycles are safer to ride than are Zenon brand bicycles. The agency based the conclusion on the ratio of the number of rider injuries to the number of riding hours for each brand of bicycle from 1981 through 1984. Yet for identically designed bicycles manufactured since 1985, the number of rider injuries has been twice as great among riders of Xylos as among riders of Zenons. Therefore, the agency's conclusion would have been different for the period since 1985.
- Which of the following is an assumption that, if true, supports the claim that the agency's conclusion would have been different for the period since 1985?
- (A) For the period since 1985, the number of riding hours for Zenons totaled at least half the number of riding hours for Xylos.
 - (B) Of all the bicycles ridden in the period since 1985, the percentage of Xylos ridden was twice the percentage of Zenons ridden.
 - (C) Prior to 1985, Zenon owners were more likely than Xylo owners to report the injuries they sustained while riding their bicycles.
 - (D) In 1985 the agency had miscalculated the ratio for Xylos, for Zenons, or for both.
 - (E) Soon after the agency had issued its report, consumer demand for Xylos increased more rapidly than did consumer demand for Zenons.

SECTION 3

Time—30 minutes

37 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Although the feeding activities of whales and walruses give the seafloor of the Bering Shelf a devastated appearance, these activities seem to be actually ----- to the area, ----- its productivity.
(A) destructive..counterbalancing
(B) rehabilitative..diminishing
(C) beneficial..enhancing
(D) detrimental..redirecting
(E) superfluous..encumbering
2. In an age without radio or recordings, an age ----- by print, fiction gained its greatest ascendancy.
(A) decimated
(B) denigrated
(C) dominated
(D) emphasized
(E) resurrected
3. Scientists' pristine reputation as devotees of the disinterested pursuit of truth has been ----- by recent evidence that some scientists have deliberately ----- experimental results to further their own careers.
(A) reinforced..published
(B) validated..suppressed
(C) exterminated..replicated
(D) compromised..fabricated
(E) resuscitated..challenged
4. Although Johnson's and Smith's initial fascination with the fortunes of those jockeying for power in the law firm ----- after a few months, the two paid sufficient attention to determine who their lunch partners should be.
(A) revived
(B) emerged
(C) intensified
(D) flagged
(E) persisted
5. A war, even if fought for individual liberty and democratic rights, usually requires that these principles be -----, for they are ----- the regimentation and discipline necessary for military efficiency.
(A) espoused..contrary to
(B) suppressed..fulfilled through
(C) suspended..incompatible with
(D) followed..disruptive of
(E) rejected..inherent in
6. To test the ----- of borrowing from one field of study to enrich another, simply investigate the extent to which terms from the one may, without forcing, be ----- the other.
(A) risk..confused with
(B) universality..applied to
(C) decorum..illuminated by
(D) rate..superseded by
(E) efficacy..utilized by
7. The English novelist William Thackeray considered the cult of the criminal so dangerous that he criticized Dickens' *Oliver Twist* for making the characters in the thieves' kitchen so -----.
(A) threatening
(B) riveting
(C) conniving
(D) fearsome
(E) irritating

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

(This passage is excerpted from an article that was published in 1981.)

The deep sea typically has a sparse fauna dominated by tiny worms and crustaceans, with an even sparser distribution of larger animals. However, near hydrothermal vents, areas of the ocean where warm water emerges from subterranean sources, live remarkable densities of huge clams, blind crabs, and fish.

Line (5) Most deep-sea faunas rely for food on particulate matter, ultimately derived from photosynthesis, falling from above. The food supplies necessary to sustain the large vent communities, however, must be many times the ordinary fallout. The first reports describing vent faunas proposed two possible sources of nutrition: bacterial chemosynthesis, production of food by bacteria using energy derived from chemical changes, and advection, the drifting of food materials from surrounding regions. Later, evidence in support of the idea of intense local chemosynthesis was accumulated: hydrogen sulfide was found in vent water; many vent-site bacteria were found to be capable of chemosynthesis; and extremely large concentrations of bacteria were found in samples of vent water thought to be pure. This final observation seemed decisive. If such astonishing concentrations of bacteria were typical of vent outflow, then food within the vent would dwarf any contribution from advection. Hence, the widely quoted conclusion was reached that bacterial chemosynthesis provides the foundation for hydrothermal-vent food chains—an exciting prospect because no other communities on Earth are independent of photosynthesis.

(10) (20) (25) (30) There are, however, certain difficulties with this interpretation. For example, some of the large sedentary organisms associated with vents are also found at ordinary deep-sea temperatures many meters from the nearest hydrothermal sources. This suggests that bacterial chemosynthesis is not a sufficient source of nutrition for these creatures. Another difficulty is that similarly dense populations of large deep-sea animals have been found in the proximity of "smokers"—vents where water emerges at temperatures up to 350° C. No bacteria (35) (40) can survive such heat, and no bacteria were found there.

Unless smokers are consistently located near more hospitable warm-water vents, chemosynthesis can account for only a fraction of the vent faunas. It is conceivable, however, that these large, sedentary organisms do in fact (45) feed on bacteria that grow in warm-water vents, rise in the vent water, and then rain in peripheral areas to nourish animals living some distance from the warm-water vents.

Nonetheless, advection is a more likely alternative (50) food source. Research has demonstrated that advective flow, which originates near the surface of the ocean where suspended particulate matter accumulates, transports some of that matter and water to the vents. Estimates suggest that for every cubic meter of vent discharge, 350 milligrams of particulate organic material (55) would be advected into the vent area. Thus, for an average-sized vent, advection could provide more than 30 kilograms of potential food per day. In addition, it is likely that small live animals in the advected water might (60) be killed or stunned by thermal and/or chemical shock, thereby contributing to the food supply of vents.

16. The passage provides information for answering which of the following questions?

- (A) What causes warm-water vents to form?
- (B) Do vent faunas consume more than do deep-sea faunas of similar size?
- (C) Do bacteria live in the vent water of smokers?
- (D) What role does hydrogen sulfide play in chemosynthesis?
- (E) What accounts for the locations of deep-sea smokers?

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17. The information in the passage suggests that the majority of deep-sea faunas that live in nonvent habitats have which of the following characteristics?
- (A) They do not normally feed on particles of food in the water.
 - (B) They are smaller than many vent faunas.
 - (C) They are predators.
 - (D) They derive nutrition from a chemosynthetic food source.
 - (E) They congregate around a single main food source.
18. The primary purpose of the passage is to
- (A) describe a previously unknown natural phenomenon
 - (B) reconstruct the evolution of a natural phenomenon
 - (C) establish unequivocally the accuracy of a hypothesis
 - (D) survey explanations for a natural phenomenon and determine which is best supported by evidence
 - (E) entertain criticism of the author's research and provide an effective response
19. Which of the following does the author cite as a weakness in the argument that bacterial chemosynthesis provides the foundation for the food chains at deep-sea vents?
- (A) Vents are colonized by some of the same animals found in other areas of the ocean floor.
 - (B) Vent water does not contain sufficient quantities of hydrogen sulfide.
 - (C) Bacteria cannot produce large quantities of food quickly enough.
 - (D) Large concentrations of minerals are found in vent water.
 - (E) Some bacteria found in the vents are incapable of chemosynthesis.
20. Which of the following is information supplied in the passage that would support the statement that the food supplies necessary to sustain vent communities must be many times that of ordinary fallout?
- I. Large vent faunas move from vent to vent in search of food.
 - II. Vent faunas are not able to consume food produced by photosynthesis.
 - III. Vents are more densely populated than are other deep-sea areas.
- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
21. The author refers to "smokers" (line 38) most probably in order to
- (A) show how thermal shock can provide food for some vent faunas by stunning small animals
 - (B) prove that the habitat of most deep-sea animals is limited to warm-water vents
 - (C) explain how bacteria carry out chemosynthesis
 - (D) demonstrate how advection compensates for the lack of food sources on the seafloor
 - (E) present evidence that bacterial chemosynthesis may be an inadequate source of food for some vent faunas
22. Which of the following can be inferred from the passage about the particulate matter that is carried down from the surface of the ocean?
- (A) It is the basis of bacterial chemosynthesis in the vents.
 - (B) It may provide an important source of nutrition for vent faunas.
 - (C) It may cause the internal temperature of the vents to change significantly.
 - (D) It is transported as large aggregates of particles.
 - (E) It contains hydrogen sulfide.

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Throughout human history there have been many stringent taboos concerning watching other people eat or eating in the presence of others. There have been attempts to explain these taboos in terms of inappropriate social relationships either between those who are involved and those who are not simultaneously involved in the satisfaction of a bodily need, or between those already sated and those who appear to be shamelessly gorging. Undoubtedly such elements

(10) exist in the taboos, but there is an additional element with a much more fundamental importance. In prehistoric times, when food was so precious and the on-lookers so hungry, not to offer half of the little food one had was unthinkable, since every glance was a plea for life. Further, during those times, people existed in nuclear or extended family groups, and the sharing of food was quite literally supporting one's family or, by extension, preserving one's self.

23. If the argument in the passage is valid, taboos against eating in the presence of others who are not also eating would be LEAST likely in a society that

(A) had always had a plentiful supply of food
(B) emphasized the need to share worldly goods
(C) had a nomadic rather than an agricultural way of life
(D) emphasized the value of privacy
(E) discouraged overindulgence

24. The author's hypothesis concerning the origin of taboos against watching other people eat emphasizes the

(A) general palatability of food
(B) religious significance of food
(C) limited availability of food
(D) various sources of food
(E) nutritional value of food

25. According to the passage, the author believes that past attempts to explain some taboos concerning eating are

(A) unimaginative
(B) implausible
(C) inelegant
(D) incomplete
(E) unclear

26. In developing the main idea of the passage, the author does which of the following?

(A) Downplays earlier attempts to explain the origins of a social prohibition.
(B) Adapts a scientific theory and applies it to a spiritual relationship.
(C) Simplifies a complex biological phenomenon by explaining it in terms of social needs.
(D) Reorganizes a system designed to guide personal behavior.
(E) Codifies earlier, unsystematized conjectures about family life.

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8. Although the human population around the forest-land in Middlesex County has increased, the amount of forestland has not been reduced. Therefore, the decrease in the county's songbird population cannot be attributed to the growth in the county's human population.

Which of the following, if true, most seriously weakens the conclusion above?

- (A) As the human population of Middlesex County has grown, there has been an increase in the number of shopping malls built.
(B) The presence of more garbage cans resulting from the increase in the county's human population ensures the survival of more raccoons, which prey on songbird eggs whenever available.
(C) There has recently been a decrease in the amount of rain-forest land in Central and South America, where songbirds spend the winter months.
(D) Although several species of songbirds are disappearing from Middlesex County, these species are far from being endangered.
(E) The disappearance of songbirds, which eat insects, often results in increased destruction of trees by insects.

9. In October 1987 the United States stock market suffered a major drop in prices. During the weeks after the drop, the volume of stocks traded also dropped sharply to well below what had been the weekly average for the preceding year. However, the volume for the entire year was not appreciably different from the preceding year's volume.

Which of the following, if true, resolves the apparent contradiction presented in the passage above?

- (A) Foreign investors usually buy United States stocks only when prices are low.
(B) The number of stock buyers in 1987 remained about the same as it had been the preceding year.
(C) For some portion of 1987, the volume of stocks traded was higher than the average for that year.
(D) The greater the volume of stocks traded in a given year, the lower the average price per share on the United States stock market for that year.
(E) The volume of stocks traded rises and falls in predictable cycles.

10. In a recent year California produced an orange crop equal to only seventy-six percent of Florida's orange crop. However, when citrus crops as a group, including oranges, were compared, the California crop was twenty-three percent greater than Florida's crop for the same year.

If the information above is true, which of the following can properly be concluded about the Florida and California citrus crops in the year mentioned?

- (A) Florida's climate was suited only to growing oranges.
(B) Florida produced larger oranges than California did.
(C) California produced more oranges than it did non-orange citrus.
(D) California's proportion of non-orange citrus crops was higher than Florida's.
(E) California had more acreage that could be devoted to agriculture than did Florida.

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23. Researchers studying sets of identical twins who were raised apart in dissimilar environments found that in each case the twins were similar in character, medical history, and life experiences. The researchers saw these results as confirmation of the hypothesis that heredity is more important than environment in determining human personalities and life histories.

The existence of which of the following would tend to weaken the support for the hypothesis above most seriously?

- (A) A set of identical twins raised together who are shown by appropriate tests to have very similar value systems
- (B) A pair of identical twins raised apart who differ markedly with respect to aggressiveness and other personality traits
- (C) A younger brother and older sister raised together who have similar personalities and life experiences
- (D) A mother and daughter who have the same profession even though they have very different temperaments
- (E) A pair of twins raised together who have similar personality traits but different value systems

24. Because the process of freezing food consumes energy, many people keep their electric freezers half-empty, using them only to store commercially frozen foods. Yet freezers that are half-empty often consume more energy than they would if they were kept fully stocked.

Which of the following, if true, contributes most to an explanation of the apparent discrepancy described above?

- (A) A given volume of air in a freezer requires much more energy to be maintained at a temperature below freezing than does an identical volume of frozen food.
- (B) The more often a freezer's door is opened, the more energy is required to maintain that freezer's normal temperature.
- (C) When unfrozen foods are placed in a freezer, the average temperature of a given volume of air inside that freezer rises temporarily.
- (D) A person who normally maintains a half-empty freezer can cut energy costs considerably by using a freezer that is 50 percent smaller.
- (E) An electric freezer can operate efficiently only if chilled air is free to circulate within the freezing compartment.

25. People often do not make decisions by using the basic economic principle of rationally weighing all possibilities and then making the choice that can be expected to maximize benefits and minimize harm. Routinely, people process information in ways that are irrational in this sense.

Any of the following, if true, would provide evidence in support of the assertions above EXCEPT:

- (A) People tend to act on new information, independent of its perceived relative merit, rather than on information they already have.
- (B) People prefer a major risk taken voluntarily to a minor one that has been forced on them, even if they know that the voluntarily taken risk is statistically more dangerous.
- (C) People tend to take up potentially damaging habits even though they have clear evidence that their own peers as well as experts disapprove of such behavior.
- (D) People avoid situations in which they could become involved in accidents involving large numbers of people more than they do situations where single-victim accidents are possible, even though they realize that an accident is more likely in the latter situations than in the former.
- (E) People usually give more weight to a physician's opinion about the best treatment for a disease than they do to the opinion of a neighbor if they realize that the neighbor is not an expert in disease treatment.

SECTION 5

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The discovery that, friction excluded, all bodies fall at the same rate is so simple to state and to grasp that there is a tendency to ----- its significance.
(A) underrate
(B) control
(C) reassess
(D) praise
(E) eliminate
2. Their mutual teasing seemed -----, but in fact it ----- a long-standing hostility.
(A) aimless. .produced
(B) friendly. .masked
(C) playful. .contravened
(D) bitter. .revealed
(E) clever. .averted
3. Noting that few employees showed any ----- for complying with the corporation's new safety regulations, Peterson was forced to conclude that acceptance of the regulations would be -----, at best.
(A) aptitude. .unavoidable
(B) regard. .indeterminate
(C) respect. .negotiable
(D) patience. .imminent
(E) enthusiasm. .grudging
4. It has been argued that politics as -----, whatever its transcendental claims, has always been the systematic organization of common hatreds.
(A) a theory
(B) an ideal
(C) a practice
(D) a contest
(E) an enigma
5. In many science fiction films, the opposition of good and evil is portrayed as a ----- between technology, which is -----, and the errant will of a depraved intellectual.
(A) fusion. .useful
(B) struggle. .dehumanizing
(C) parallel. .unfettered
(D) conflict. .beneficent
(E) similarity. .malevolent
6. Although scientists claim that the seemingly ----- language of their reports is more precise than the figurative language of fiction, the language of science, like all language, is inherently -----.
(A) ornamental. .subtle
(B) unidimensional. .unintelligible
(C) symbolic. .complex
(D) literal. .allusive
(E) subjective. .metaphorical
7. In recent decades the idea that Cézanne influenced Cubism has been caught in the ----- between art historians who credit Braque with its invention and those who ----- Picasso.
(A) crossfire. .tout
(B) interplay. .advocate
(C) paradox. .prefer
(D) deliberation. .attribute
(E) tussle. .substitute

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

(This passage is from a book published in 1975.)

Line (5) That Louise Nevelson is believed by many critics to be the greatest twentieth-century sculptor is all the more remarkable because the greatest resistance to women artists has been, until recently, in the field of sculpture. Since Neolithic times, sculpture has been considered the prerogative of men, partly, perhaps, for purely physical reasons: it was erroneously assumed that women were not suited for the hard manual labor required in sculpting stone, carving wood, or working in metal. It has been only during the twentieth century that women sculptors have been recognized as major artists, and it has been in the United States, especially since the decades of the fifties and sixties, that women sculptors have shown the greatest originality and creative power. Their rise to prominence parallels the development of sculpture itself in the United States: while there had been a few talented sculptors in the United States before the 1940's, it was only after 1945—when New York was rapidly becoming the art capital of the world—that major sculpture was produced in the United States. Some of the best was the work of women.

(10) (20)

(25) By far the most outstanding of these women is Louise Nevelson, who in the eyes of many critics is the most original female artist alive today. One famous and influential critic, Hilton Kramer, said of her work, "For myself, I think Ms. Nevelson succeeds where the painters often fail."

(30) (35) Her works have been compared to the Cubist constructions of Picasso, the Surrealistic objects of Miro, and the Merzbau of Schwitters. Nevelson would be the first to admit that she has been influenced by all of these, as well as by African sculpture, and by Native American and pre-Columbian art, but she has absorbed all these influences and still created a distinctive art that expresses the urban landscape and the aesthetic sensibility of the twentieth century. Nevelson says, "I have always wanted to show the world that art is everywhere, except that it has to pass through a creative mind."

(40) (45) Using mostly discarded wooden objects like packing crates, broken pieces of furniture, and abandoned architectural ornaments, all of which she has hoarded for years, she assembles architectural constructions of great beauty and power. Creating very freely with no sketches, she glues and nails objects together, paints them black, or more rarely white or gold, and places them in boxes. These assemblages, walls, even entire environments create a mysterious, almost awe-inspiring atmosphere. Although she has denied any symbolic or religious intent in her works, their three-dimensional grandeur and even their titles, such as *Sky Cathedral* and *Night Cathedral*, suggest such connotations. In some ways, her most ambitious works are closer to architecture than to traditional sculpture, but then neither Louise Nevelson nor her art fits into any neat category.

(50)

17. The passage focuses primarily on which of the following?
- (A) A general tendency in twentieth-century art
 - (B) The work of a particular artist
 - (C) The artistic influences on women sculptors
 - (D) Critical responses to twentieth-century sculpture
 - (E) Materials used by twentieth-century sculptors
18. Which of the following statements is supported by information given in the passage?
- (A) Since 1945 women sculptors in the United States have produced more sculpture than have men sculptors.
 - (B) Since 1950 sculpture produced in the United States has been the most original and creative sculpture produced anywhere.
 - (C) From 1900 to 1950 women sculptors in Europe enjoyed more recognition for their work than did women sculptors in the United States.
 - (D) Prior to 1945 there were many women sculptors whose work was ignored by critics.
 - (E) Prior to 1945 there was little major sculpture produced by men or women sculptors working in the United States.
19. The author quotes Hilton Kramer in lines 25-27 most probably in order to illustrate which of the following?
- (A) The realism of Nevelson's work
 - (B) The unique qualities of Nevelson's style
 - (C) The extent of critical approval of Nevelson's work
 - (D) A distinction between sculpture and painting
 - (E) A reason for the prominence of women sculptors since the 1950's

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20. Which of the following is one way in which Nevelson's art illustrates her theory as it is expressed in lines 36-38?
- (A) She sculpts in wood rather than in metal or stone.
 - (B) She paints her sculptures and frames them in boxes.
 - (C) She makes no preliminary sketches but rather allows the sculpture to develop as she works.
 - (D) She puts together pieces of ordinary objects once used for different purposes to make her sculptures.
 - (E) She does not deliberately attempt to convey symbolic or religious meanings through her sculpture.
21. It can be inferred from the passage that the author believes which of the following about Nevelson's sculptures?
- (A) They suggest religious and symbolic meanings.
 - (B) They do not have qualities characteristic of sculpture.
 - (C) They are mysterious and awe-inspiring, but not beautiful.
 - (D) They are uniquely American in style and sensibility.
 - (E) They show the influence of twentieth-century architecture.
22. The author regards Nevelson's stature in the art world as "remarkable" (line 3) in part because of which of the following?
- (A) Her work is currently overrated.
 - (B) Women sculptors have found it especially difficult to be accepted and recognized as major artists.
 - (C) Nevelson's sculptures are difficult to understand.
 - (D) Many art critics have favored painting over sculpture in writing about developments in the art world.
 - (E) Few of the artists prominent in the twentieth century have been sculptors.
23. Which of the following statements about Nevelson's sculptures can be inferred from the passage?
- (A) They are meant for display outdoors.
 - (B) They are often painted in several colors.
 - (C) They are sometimes very large.
 - (D) They are hand carved by Nevelson.
 - (E) They are built around a central wooden object.

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Line
(5)

(10)

(15)

Volcanic rock that forms as fluid lava chills rapidly is called pillow lava. This rapid chilling occurs when lava erupts directly into water (or beneath ice) or when it flows across a shoreline and into a body of water. While the term “pillow lava” suggests a definite shape, in fact geologists disagree. Some geologists argue that pillow lava is characterized by discrete, ellipsoidal masses. Others describe pillow lava as a tangled mass of cylindrical, interconnected flow lobes. Much of this controversy probably results from unwarranted extrapolations of the original configuration of pillow flows from two-dimensional cross sections of eroded pillows in land outcroppings. Virtually any cross section cut through a tangled mass of interconnected flow lobes would give the appearance of a pile of discrete ellipsoidal masses. Adequate three-dimensional images of intact pillows are essential for defining the true geometry of pillowed flows and thus ascertaining their mode of origin. Indeed, the term “pillow,” itself suggestive of discrete masses, is probably a misnomer.

24. Which of the following is a fact presented in the passage?

- (A) The shape of the connections between the separate, sacklike masses in pillow lava is unknown.
- (B) More accurate cross sections of pillow lava would reveal the mode of origin.
- (C) Water or ice is necessary for the formation of pillow lava.
- (D) No three-dimensional examples of intact pillows currently exist.
- (E) The origin of pillow lava is not yet known.

25. In the passage, the author is primarily interested in

- (A) analyzing the source of a scientific controversy
- (B) criticizing some geologists’ methodology
- (C) pointing out the flaws in a geological study
- (D) proposing a new theory to explain existing scientific evidence
- (E) describing a physical phenomenon

26. The author of the passage would most probably agree that the geologists mentioned in line 6 (“Some geologists”) have made which of the following errors in reasoning?

- I. Generalized unjustifiably from available evidence.
 - II. Deliberately ignored existing counterevidence.
 - III. Repeatedly failed to take new evidence into account.
- (A) I only (B) II only (C) III only
 - (D) I and II only (E) II and III only

27. The author implies that the “controversy” (line 9) might be resolved if

- (A) geologists did not persist in using the term “pillow”
- (B) geologists did not rely on potentially misleading information
- (C) geologists were more willing to confer directly with one another
- (D) two-dimensional cross sections of eroded pillows were available
- (E) existing pillows in land outcroppings were not so badly eroded

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TEST 4

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Although adolescent maturational and developmental states occur in an orderly sequence, their timing ----- with regard to onset and duration.
(A) lasts (B) varies (C) falters
(D) accelerates (E) dwindles
2. Many of the earliest colonial houses that are still standing have been so modified and enlarged that the ----- design is no longer -----.
(A) pertinent. .relevant
(B) intended. .necessary
(C) embellished. .attractive
(D) appropriate. .applicable
(E) initial. .discernible
3. While the delegate clearly sought to ----- the optimism that has emerged recently, she stopped short of suggesting that the conference was near collapse and might produce nothing of significance.
(A) substantiate (B) dampen (C) encourage
(D) elucidate (E) rekindle
4. The old man could not have been accused of ----- his affection; his conduct toward the child betrayed his ----- her.
(A) lavishing. .fondness for
(B) sparing. .tolerance of
(C) rationing. .antipathy for
(D) stinting. .adoration of
(E) promising. .dislike of
5. A leading chemist believes that many scientists have difficulty with stereochemistry because much of the relevant nomenclature is -----, in that it combines concepts that should be kept -----.
(A) obscure. .interrelated
(B) specialized. .intact
(C) subtle. .inviolate
(D) descriptive. .separate
(E) imprecise. .discrete
6. Among the many ----- of the project, expense cannot be numbered; the goals of the project's promoters can be achieved with impressive -----.
(A) highlights. .efficiency
(B) features. .savings
(C) disadvantages. .innovation
(D) claims. .speed
(E) defects. .economy
7. Though science is often imagined as a ----- exploration of external reality, scientists are no different from anyone else: they are ----- human beings enmeshed in a web of personal and social circumstances.
(A) fervent. .vulnerable
(B) neutral. .rational
(C) painstaking. .careless
(D) disinterested. .passionate
(E) cautious. .dynamic

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Of Homer's two epic poems, the *Odyssey* has always been more popular than the *Iliad*, perhaps because it includes more features of mythology that are accessible to readers. Its subject (to use Maynard Mack's categories) is "life-as-spectacle," for readers, diverted by its various incidents, observe its hero Odysseus primarily from without; the tragic *Iliad*, however, presents "life-as-experience": readers are asked to identify with the mind of Achilles, whose motivations render him a not particularly likable hero. In addition, the *Iliad*, more than the *Odyssey*, suggests the complexity of the gods' involvement in human actions, and to the extent that modern readers find this complexity a needless complication, the *Iliad* is less satisfying than the *Odyssey*, with its simpler scheme of divine justice. Finally, since the *Iliad* presents a historically verifiable action, Troy's siege, the poem raises historical questions that are absent from the *Odyssey*'s blithely imaginative world.

17. The author uses Mack's "categories" (lines 4-5) most probably in order to
- (A) argue that the *Iliad* should replace the *Odyssey* as the more popular poem
 - (B) indicate Mack's importance as a commentator on the *Iliad* and the *Odyssey*
 - (C) suggest one way in which the *Iliad* and the *Odyssey* can be distinguished
 - (D) point out some of the difficulties faced by readers of the *Iliad* and the *Odyssey*
 - (E) demonstrate that the *Iliad* and the *Odyssey* can best be distinguished by comparing their respective heroes

18. The author suggests that the variety of incidents in the *Odyssey* is likely to deter the reader from
- (A) concentrating on the poem's mythological features
 - (B) concentrating on the psychological states of the poem's central character
 - (C) accepting the explanations that have been offered for the poem's popularity
 - (D) accepting the poem's scheme of divine justice
 - (E) accepting Maynard Mack's theory that the poem's subject is "life-as-spectacle"
19. The passage is primarily concerned with
- (A) distinguishing arguments
 - (B) applying classifications
 - (C) initiating a debate
 - (D) resolving a dispute
 - (E) developing a contrast
20. It can be inferred from the passage that a reader of the *Iliad* is likely to have trouble identifying with the poem's hero for which of the following reasons?
- (A) The hero is eventually revealed to be unheroic.
 - (B) The hero can be observed by the reader only from without.
 - (C) The hero's psychology is not historically verifiable.
 - (D) The hero's emotions often do not seem appealing to the reader.
 - (E) The hero's emotions are not sufficiently various to engage the reader's attention.

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Flatfish, such as the flounder, are among the few vertebrates that lack approximate bilateral symmetry (symmetry in which structures to the left and right of the body's midline are mirror images). Most striking among

- (5) the many asymmetries evident in an adult flatfish is eye placement: before maturity one eye migrates, so that in an adult flatfish both eyes are on the same side of the head. While in most species with asymmetries virtually all adults share the same asymmetry, members of the
(10) starry flounder species can be either left-eyed (both eyes on the left side of head) or right-eyed. In the waters between the United States and Japan, the starry flounder populations vary from about 50 percent left-eyed off the United States West Coast, through about 70 percent left-eyed halfway between the United States and Japan, to nearly 100 percent left-eyed off the Japanese coast.

Biologists call this kind of gradual variation over a certain geographic range a "cline" and interpret clines as strong indications that the variation is adaptive, a

- (20) response to environmental differences. For the starry flounder this interpretation implies that a geometric difference (between fish that are mirror images of one another) is adaptive, that left-eyedness in the Japanese starry flounder has been selected for, which provokes a
(25) perplexing question: what is the selective advantage in having both eyes on one side rather than on the other?

The ease with which a fish can reverse the effect of the sidedness of its eye asymmetry simply by turning around has caused biologists to study internal anatomy,

- (30) especially the optic nerves, for the answer. In all flatfish the optic nerves cross, so that the right optic nerve is joined to the brain's left side and vice versa. This crossing introduces an asymmetry, as one optic nerve must cross above or below the other. G. H. Parker
(35) reasoned that if, for example, a flatfish's left eye migrated when the right optic nerve was on top, there would be a twisting of nerves, which might be mechanically disadvantageous. For starry flounders, then, the left-eyed variety would be selected against, since in a
(40) starry flounder the left optic nerve is uppermost.

The problem with the above explanation is that the Japanese starry flounder population is almost exclusively left-eyed, and natural selection never promotes a purely less advantageous variation. As other explanations

- (45) proved equally untenable, biologists concluded that there is no important adaptive difference between left-eyedness and right-eyedness, and that the two characteristics are genetically associated with some other adaptively significant characteristic. This situation is one
(50) commonly encountered by evolutionary biologists, who must often decide whether a characteristic is adaptive or selectively neutral. As for the left-eyed and right-eyed flatfish, their difference, however striking, appears to be an evolutionary red herring.

21. According to the passage, starry flounder differ from most other species of flatfish in that starry flounder

- (A) are not basically bilaterally symmetric
(B) do not become asymmetric until adulthood
(C) do not all share the same asymmetry
(D) have both eyes on the same side of the head
(E) tend to cluster in only certain geographic regions

22. The author would be most likely to agree with which of the following statements about left-eyedness and right-eyedness in the starry flounder?

- I. They are adaptive variations by the starry flounder to environmental differences.
II. They do not seem to give obvious selective advantages to the starry flounder.
III. They occur in different proportions in different locations.
- (A) I only
(B) II only
(C) I and III only
(D) II and III only
(E) I, II, and III

23. According to the passage, a possible disadvantage associated with eye migration in flatfish is that the optic nerves can

- (A) adhere to one another
(B) detach from the eyes
(C) cross
(D) stretch
(E) twist

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24. Which of the following best describes the organization of the passage as a whole?
- (A) A phenomenon is described and an interpretation presented and rejected.
(B) A generalization is made and supporting evidence is supplied and weighed.
(C) A contradiction is noted and a resolution is suggested and then modified.
(D) A series of observations is presented and explained in terms of the dominant theory.
(E) A hypothesis is introduced and corroborated in the light of new evidence.
25. The passage supplies information for answering which of the following questions?
- (A) Why are Japanese starry flounder mostly left-eyed?
(B) Why should the eye-sidedness in starry flounder be considered selectively neutral?
(C) Why have biologists recently become interested in whether a characteristic is adaptive or selectively neutral?
(D) How do the eyes in flatfish migrate?
(E) How did Parker make his discoveries about the anatomy of optic nerves in flatfish?
26. Which of the following is most clearly similar to a cline as it is described in the second paragraph of the passage?
- (A) A vegetable market in which the various items are grouped according to place of origin
(B) A wheat field in which different varieties of wheat are planted to yield a crop that will bring the maximum profit
(C) A flower stall in which the various species of flowers are arranged according to their price
(D) A housing development in which the length of the front struts supporting the porch of each house increases as houses are built up the hill
(E) A national park in which the ranger stations are placed so as to be inconspicuous, and yet as easily accessible as possible
27. Which of the following phrases from the passage best expresses the author's conclusion about the meaning of the difference between left-eyed and right-eyed flatfish?
- (A) "Most striking" (line 4)
(B) "variation is adaptive" (line 19)
(C) "mechanically disadvantageous" (lines 37-38)
(D) "adaptively significant" (lines 48-49)
(E) "evolutionary red herring" (line 54)

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4. One of the world's most celebrated paintings, *The Man with the Golden Helmet*, long attributed to Rembrandt, is not a Rembrandt after all. So say several art experts, who base their conclusion on an analysis of stylistic features, especially details both of shading and of brushwork. In order to ascertain who really painted the well-known masterpiece, the experts have begun a series of sophisticated new tests, including one that involves the activation of neutrons. These tests yield patterns for any painter that are as distinctive as a good set of fingerprints.
- Which of the following is an assumption on which the conclusion of the art experts depends?
- (A) *The Man with the Golden Helmet* was not painted during Rembrandt's lifetime.
(B) If even *The Man with the Golden Helmet* is of questionable attribution, then any supposedly authentic Rembrandt has now become suspect.
(C) The painting known as *The Man with the Golden Helmet* is a copy of a Rembrandt original.
(D) The original ascription of *The Man with the Golden Helmet* to Rembrandt was a deliberate fraud.
(E) There are significant consistencies among authentic Rembrandts in certain matters of style.
5. A placebo is a chemically inert substance prescribed more for the mental relief of a patient than for its effect on the patient's physical disorder. It is prescribed in the hope of instilling in the patient a positive attitude toward prospects for his or her recovery. In some cases, the placebo actually produces improvement in the patient's condition. In discussing the use and effect of placebos, a well-known medical researcher recently paid physicians the somewhat offbeat compliment of saying that physicians were the ultimate placebo.
- By comparing a physician to a placebo, the researcher sought to imply that
- (A) physicians should always maintain and communicate an optimistic attitude toward their patients, regardless of the prognosis
(B) the health of some patients can improve simply from their knowledge that they are under a physician's care
(C) many patients actually suffer from imagined illnesses that are best treated by placebos
(D) physicians could prescribe less medication and achieve the same effect
(E) it is difficult to determine what, if any, effect a physician's behavior has on a patient's condition
6. The Occupational Safety and Health Administration (OSHA) was established to protect workers from accidents and unsafe conditions on the job. There has actually been an increase in the number of job-related accidents under OSHA. This demonstrates the agency's ineffectiveness.
- Which of the following, if true concerning the period during which the increase occurred, most seriously weakens the argument above?
- (A) A number of job categories, excluded from the jurisdiction of OSHA in the legislation originally establishing the agency, have continued to be outside OSHA's jurisdiction.
(B) OSHA has been assigned a greater number of kinds of workplace activities to monitor.
(C) There has been an increase in the total number of people at work, and the ratio of work-related deaths and injuries to size of work force has fallen in OSHA-supervised occupations
(D) Regulations issued by OSHA have met with political criticism from elected officials and the mass media.
(E) The increase in job-related accidents has occurred mainly in a single job category, whereas the number of job-related accidents has remained approximately constant in other categories.

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23. Being an only child has little to do with a child's social development. A recent study that followed thirty only children and thirty-five first-born children to the age of three found that the two groups of children behaved very similarly to each other toward their peers, their parents, and other adults. Which of the following, if true, most weakens the conclusion drawn above?
- (A) The groups being compared did not contain the same number of children.
(B) More time was spent observing the interactions of children with their mothers than with their fathers.
(C) Most of the researchers involved in the study were persons who had no brothers or sisters.
(D) The first-born children were, on the average, nearly three when their parents had second children.
(E) The "other adults" described in the study consisted mainly of members of the research team.
24. Manufacturers of household appliances in the United States are introducing an array of computerized technologies in the work of many of their factories in an effort to regain a lead eroded by international competition. On the basis of changes that have already taken place, experts predict a golden age for the consumer of better-designed and better-built products.
- Which of the following, if true, would LEAST support the experts' claim that appliances produced by computerized technologies will be better built?
- (A) Computerized inventory procedures ensure that parts are ordered in sufficient quantities and that production moves smoothly and consistently.
(B) Computer-directed machines carry out repetitive tasks with the result that errors due to human fatigue are eliminated.
(C) Computer-controlled ultrasound devices are better able to detect hidden flaws and defects that require repair than are human inspectors.
(D) The flow of heat used to weld parts together is more consistent when directed by computer programs and results in a more accurate and uniform weld.
(E) Computer-driven screwdrivers ensure that screws used in appliances will be consistently tight.
25. Geographers and historians have traditionally held the view that Antarctica was first sighted around 1820, but some sixteenth-century European maps show a body that resembles the polar landmass, even though explorers of the period never saw it. Some scholars, therefore, argue that the continent must have been discovered and mapped by the ancients, whose maps are known to have served as models for the European cartographers. Which of the following, if true, is most damaging to the inference drawn by the scholars?
- (A) The question of who first sighted Antarctica in modern times is still much debated, and no one has been able to present conclusive evidence.
(B) Between 3,000 and 9,000 years ago, the world was warmer than it is now, and the polar landmass was presumably smaller.
(C) There are only a few sixteenth-century global maps that show a continental landmass at the South Pole.
(D) Most attributions of surprising accomplishments to ancient civilizations or even extraterrestrials are eventually discredited or rejected as preposterous.
(E) Ancient philosophers believed that there had to be a large landmass at the South Pole to balance the northern continents and make the world symmetrical.

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Social scientists have established fairly clear-cut ----- that describe the appropriate behavior of children and adults, but there seems to be ----- about what constitutes appropriate behavior for adolescents.
(A) functions. .rigidity
(B) estimates. .indirectness
(C) norms. .confusion
(D) regulations. .certainty
(E) studies. .misapprehension
2. As long as nations cannot themselves accumulate enough physical power to dominate all others, they must depend on -----.
(A) allies (B) resources (C) freedom
(D) education (E) self-determination
3. We realized that John was still young and impressionable, but were nevertheless surprised at his -----.
(A) naïveté (B) obstinateness (C) decisiveness
(D) ingenuousness (E) resolve
4. Although Mount Saint Helens has been more ----- during the last 4,500 years than any other volcano in the coterminous United States, its long dormancy before its recent eruption ----- its violent nature.
(A) awe-inspiring. .restrained
(B) gaseous. .confirmed
(C) explosive. .belied
(D) familiar. .moderated
(E) volatile. .suggested
5. Changes of fashion and public taste are often ----- and resistant to analysis, and yet they are among the most ----- gauges of the state of the public's collective consciousness.
(A) transparent. .useful
(B) ephemeral. .sensitive
(C) faddish. .underutilized
(D) arbitrary. .problematic
(E) permanent. .reliable
6. The poet W. H. Auden believed that the greatest poets of his age were almost necessarily irresponsible, that the possession of great gifts ----- the ----- to abuse them.
(A) negates. .temptation
(B) controls. .resolution
(C) engenders. .propensity
(D) tempers. .proclivity
(E) obviates. .inclination
7. The self-important cant of musicologists on record jackets often suggests that true appreciation of the music is an ----- process closed to the uninitiated listener, however enthusiastic.
(A) unreliable (B) arcane (C) arrogant
(D) elementary (E) intuitive

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

If a supernova (the explosion of a massive star) triggered star formation from dense clouds of gas and dust, and if the most massive star to be formed from the cloud evolved into a supernova and triggered a new round of star formation, and so on, then a chain of star-forming regions would result. If many such chains were created in a differentially rotating galaxy, the distribution of stars would resemble the observed distribution in a spiral galaxy.

This line of reasoning underlies an exciting new theory of spiral-galaxy structure. A computer simulation based on this theory has reproduced the appearance of many spiral galaxies without assuming an underlying density wave, the hallmark of the most widely accepted theory of the large-scale structure of spiral galaxies. That theory maintains that a density wave of spiral form sweeps through the central plane of a galaxy, compressing clouds of gas and dust, which collapse into stars that form a spiral pattern.

17. The primary purpose of the passage is to

- (A) describe what results when a supernova triggers the creation of chains of star-forming regions
- (B) propose a modification in the most widely accepted theory of spiral-galaxy structure
- (C) compare and contrast the roles of clouds of gas and dust in two theories of spiral-galaxy structure
- (D) describe a new theory of spiral-galaxy structure and contrast it with the most widely accepted theory
- (E) describe a new theory of spiral-galaxy structure and discuss a reason why it is inferior to the most widely accepted theory

18. The passage implies that, according to the new theory of spiral-galaxy structure, a spiral galaxy can be created by supernovas when the supernovas are

- (A) producing an underlying density wave
- (B) affected by a density wave of spiral form
- (C) distributed in a spiral pattern
- (D) located in the central plane of a galaxy
- (E) located in a differentially rotating galaxy

19. Which of the following, if true, would most discredit the new theory as described in the passage?

- (A) The exact mechanism by which a star becomes a supernova is not yet completely known and may even differ for different stars.
- (B) Chains of star-forming regions like those postulated in the new theory have been observed in the vicinity of dense clouds of gas and dust.
- (C) The most massive stars formed from supernova explosions are unlikely to evolve into supernovas.
- (D) Computer simulations of supernovas provide a poor picture of what occurs just before a supernova explosion.
- (E) A density wave cannot compress clouds of gas and dust to a density high enough to create a star.

20. The author's attitude toward the new theory of spiral-galaxy structure can best be described as

- (A) euphoric (B) enthusiastic (C) concerned
- (D) critical (E) disputatious

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The first mention of slavery in the statutes of the English colonies of North America does not occur until after 1660—some forty years after the importation of the first Black people. Lest we think that slavery existed in

- (5) fact before it did in law, Oscar and Mary Handlin assure us that the status of Black people down to the 1660's was that of servants. A critique of the Handlins' interpretation of why legal slavery did not appear until the 1660's suggests that assumptions about the relation (10) between slavery and racial prejudice should be reexamined, and that explanations for the different treatment of Black slaves in North and South America should be expanded.

The Handlins explain the appearance of legal slavery

- (15) by arguing that, during the 1660's, the position of White servants was improving relative to that of Black servants. Thus, the Handlins contend, Black and White servants, heretofore treated alike, each attained a different status. There are, however, important objections to this argument. First, the Handlins cannot (20) adequately demonstrate that the White servant's position was improving during and after the 1660's; several acts of the Maryland and Virginia legislatures indicate otherwise. Another flaw in the Handlins' interpretation is (25) their assumption that prior to the establishment of legal slavery there was no discrimination against Black people. It is true that before the 1660's Black people were rarely called slaves. But this should not overshadow evidence from the 1630's on that points to racial discrimination without using the term slavery. Such discrimination sometimes stopped short of lifetime servitude or inherited status—the two attributes of true slavery—yet in other cases it included both. The Handlins' argument excludes the real possibility that Black people in the (30) English colonies were never treated as the equals of White people.

This possibility has important ramifications. If from the outset Black people were discriminated against, then legal slavery should be viewed as a reflection and an

- (40) extension of racial prejudice rather than, as many historians including the Handlins have argued, the cause of prejudice. In addition, the existence of discrimination before the advent of legal slavery offers a further explanation for the harsher treatment of Black slaves in (45) North than in South America. Freyre and Tannenbaum have rightly argued that the lack of certain traditions in North America—such as a Roman conception of slavery and a Roman Catholic emphasis on equality—explains why the treatment of Black slaves was more severe there (50) than in the Spanish and Portuguese colonies of South America. But this cannot be the whole explanation since it is merely negative, based only on a lack of something. A more compelling explanation is that the early and (55) sometimes extreme racial discrimination in the English colonies helped determine the particular nature of the slavery that followed.

21. Which of the following statements best describes the organization of lines 1-8 of the passage?

- (A) A historical trend is sketched and an exception to that trend is cited.
(B) Evidence for a historical irregularity is mentioned and a generalization from that evidence is advanced.
(C) A paradox about the origins of an institution is pointed out and the author's explanation of the paradox is expounded.
(D) A statement about a historical phenomenon is offered and a possible misinterpretation of that statement is addressed.
(E) An interpretation of the rise of an institution is stated and evidence for that interpretation is provided.

22. Which of the following is the most logical inference to be drawn from the passage about the effects of "several acts of the Maryland and Virginia legislatures" (lines 22-23) passed during and after the 1660's?

- (A) The acts negatively affected the pre-1660's position of Black as well as of White servants.
(B) The acts had the effect of impairing rather than improving the position of White servants relative to what it had been before the 1660's.
(C) The acts had a different effect on the position of White servants than did many of the acts passed during this time by the legislatures of other colonies.
(D) The acts, at the very least, caused the position of White servants to remain no better than it had been before the 1660's.
(E) The acts, at the very least, tended to reflect the attitudes toward Black servants that already existed before the 1660's.

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23. With which of the following statements regarding the status of Black people in the English colonies of North America before the 1660's would the author be LEAST likely to agree?
- (A) Although Black people were not legally considered to be slaves, they were often called slaves.
(B) Although subject to some discrimination, Black people had a higher legal status than they did after the 1660's.
(C) Although sometimes subject to lifetime servitude, Black people were not legally considered to be slaves.
(D) Although often not treated the same as White people, Black people, like many White people, possessed the legal status of servants.
(E) Although apparently subject to more discrimination after 1630 than before 1630, Black people from 1620 to the 1660's were legally considered to be servants.
24. According to the passage, the Handlins have argued which of the following about the relationship between racial prejudice and the institution of legal slavery in the English colonies of North America?
- (A) Racial prejudice and the institution of slavery arose simultaneously.
(B) Racial prejudice most often took the form of the imposition of inherited status, one of the attributes of slavery.
(C) The source of racial prejudice was the institution of slavery.
(D) Because of the influence of the Roman Catholic church, racial prejudice sometimes did not result in slavery.
(E) Although existing in a lesser form before the 1660's, racial prejudice increased sharply after slavery was legalized.
25. The passage suggests that the existence of a Roman conception of slavery in Spanish and Portuguese colonies had the effect of
- (A) extending rather than causing racial prejudice in these colonies
(B) hastening the legalization of slavery in these colonies
(C) mitigating some of the conditions of slavery for Black people in these colonies
(D) delaying the introduction of slavery into the English colonies
(E) bringing about an improvement in the treatment of Black slaves in the English colonies
26. The author considers the explanation put forward by Freyre and Tannenbaum for the treatment accorded Black slaves in the English colonies of North America to be
- (A) ambitious but misguided
(B) valid but limited
(C) popular but suspect
(D) anachronistic and controversial
(E) premature and illogical
27. With which of the following statements regarding the reason for the introduction of legal slavery in the English colonies of North America would the author be most likely to agree?
- (A) The introduction is partly to be explained by reference to the origins of slavery, before the 1660's, in the Spanish and Portuguese colonies.
(B) The introduction is to be explained by reference to a growing consensus beginning in the 1630's about what were the attributes of true slavery.
(C) The introduction is more likely to be explained by reference to a decline than to an improvement in the position of White servants in the colonies during and after the 1660's.
(D) The introduction is more likely to be explained by reference to the position of Black servants in the colonies in the 1630's than by reference to their position in the 1640's and 1650's.
(E) The introduction is more likely to be explained by reference to the history of Black people in the colonies before 1660 than by reference to the improving position of White servants during and after the 1660's.

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6. A diet that contains polyunsaturated fats and is low in saturated fats reduces the risk of heart disease. Fish are an excellent source of omega-3, a polyunsaturated fat they obtain by eating the green plant cells of plankton. But cows and other ruminants obtain omega-3 polyunsaturates when they eat grass. Therefore, a diet rich in beef and a diet rich in fish should be equally effective in reducing the risk of heart disease.

Which of the following, if true, would weaken the conclusion above?

- (A) The diet of beef cattle can be monitored far more accurately than can the diet of fish.
- (B) Consuming polyunsaturates reduces the amount of cholesterol produced by the liver and reduces the chance of blockage in coronary blood vessels.
- (C) Studies have shown that people who eat fish only once a week have a lower risk of heart disease than do people who never eat fish.
- (D) Medical researchers are expected soon to make a synthetic form of omega-3 that can be injected into beef.
- (E) Cows and other ruminants convert most of the omega-3 polyunsaturates they consume into saturated fats.

7. The widespread development of industrial robots is contributing to unemployment; therefore, “intelligent” machines are dangerous.

The argument above is most like which of the following?

- (A) Mussolini was an evil man; therefore, he became a fascist.
- (B) Eating bacon is harmful to health; therefore, fatty foods are unsafe.
- (C) Some judges are dishonest because they take bribes.
- (D) Whales are in danger of becoming extinct; therefore, we should not trade with countries that allow whales to be hunted.
- (E) Birds are dangerous because they all spread disease.

8. New Jersey has one of the lowest motor vehicle fatality rates in the country, and it is one of the few states that require extensive annual automobile safety inspections. Therefore, all states should adopt similar safety inspection procedures.

The argument above is based on which of the following assumptions?

- (A) Most states tend to impose few rules and regulations on the automobile drivers operating within those states.
- (B) Most states are skeptical that annual automobile safety inspections can reduce fatality rates.
- (C) Annual automobile safety inspections contribute significantly to holding down New Jersey’s fatality rate.
- (D) Drivers in New Jersey are more safety conscious than are drivers in other parts of the country.
- (E) A smaller number of people die on the roads in New Jersey than in most other states.

GO ON TO THE NEXT PAGE.

24. The average age and racing experience of the drivers at the Indianapolis 500 automobile race increased each year between 1965 and 1980. The reason for the increase is that high-speed racing drivers were living longer than their predecessors. Race-car safety features that reduced the severity of crashes of the kind that formerly took drivers' lives were primarily responsible for the increase in the average age of the Indianapolis 500 competitors.

Which of the following, if true, would be most likely to be part of the evidence used to show that safety features on the cars that protected drivers in major crashes were responsible for the increase in the average age of drivers at the Indianapolis race?

- (A) Younger drivers at high-speed racetracks were involved in major accidents at a slightly higher rate than were older drivers between 1965 and 1980.
- (B) Major accidents on high-speed racetracks occurred at about the same frequency in the years after 1965 as in the years before 1965.
- (C) The average age of drivers attempting to qualify for the Indianapolis 500 decreased slightly between 1965 and 1980.
- (D) Accidents on highways in the United States occurred at about the same frequency in the years after 1965 as in the years before 1965.
- (E) Other safety features, involving the condition of the racetrack and the uniforms worn by the drivers while driving, were adopted at Indianapolis between 1965 and 1980.

- * 25. John Cleland, best known for his novel *Fanny Hill*, is becoming the Vivaldi of eighteenth-century literature in that his cult is promoted by people who do not much care for the period as a whole and who cheerfully ignore the work of its greatest masters.

It can be inferred that the author of the passage above believes which of the following?

- (A) Cleland was more esteemed as a writer in his own time than he is in ours.
- (B) Few people know much about the period in which Cleland wrote.
- (C) Most eighteenth-century novels deserve more attention than *Fanny Hill*.
- (D) The cult of Vivaldi has developed more recently than that of Cleland.
- (E) Vivaldi was not one of the greatest masters of his time.

5. Mass transit authorities in large cities are struggling with deficits. Riders complain about delays and breakdowns, cuts in service, and fares higher than they are accustomed to paying. For all these reasons and because the price of gasoline is still not prohibitive, the number of passengers using public transportation has fallen, adding to the deficits.

Which of the following statements about the relationship between the number of riders using public transportation and the price of gasoline is best supported by the passage above?

- (A) As the price of gasoline rises, the number of riders using public transportation rises.
- (B) Even if the price of gasoline rises, the number of riders using public transportation will continue to decline.
- (C) If the price of gasoline rises to a prohibitive level, the number of riders using public transportation will rise.
- (D) The majority of riders using public transportation do not use gasoline; hence, fluctuations in gasoline prices are unlikely to affect the number of riders using public transportation.
- (E) The price of gasoline is always low enough to make private transportation cheaper than public transportation; hence, fluctuations in gasoline prices are unlikely to affect the number of riders using public transportation.

6. The popular notion that teachers are generally apathetic about microcomputer technology is false, or at least dated: a recently published survey indicates that 86 percent of the 5,000 teachers who responded to survey questionnaires expressed a high level of interest in microcomputers.

Which of the following, if true, would be most damaging to the argument above?

- (A) No attempt was made in the survey to determine whether the teachers who received questionnaires had any previous experience with microcomputers.
- (B) Teachers who are interested in microcomputer technology were more likely than others to complete and return their questionnaires.
- (C) Questionnaires were sent to teachers without regard to their areas of subject-matter expertise or teaching experience.
- (D) There have been several important developments in the classroom applications of microcomputer technology since the survey results were tabulated.
- (E) The survey was conducted as part of a marketing study by a company that manufactures and sells microcomputers.

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24. Some doomsayers are warning that long-range warming or cooling trends in weather patterns will drastically reduce grain production. More optimistic reports, however, point out that, even if such drifts in average temperature do occur, we should expect little change in grain production because there is little evidence that changes in rainfall patterns will occur. Moreover, for most crops, climate-induced yield trends will be masked by both the year-to-year fluctuation of yields and by the enhancement of yields because of technological factors.

Which of the following is an assumption on which the more optimistic reports mentioned in the passage are based?

- (A) Long-range changes in weather patterns cannot be accurately predicted.
- (B) The growing of grain is so highly dependent on technological factors that improvements in yield are unlikely, regardless of climatic conditions.
- (C) Trends in rainfall patterns are more difficult to isolate than are trends in temperature.
- (D) Long-range warming or cooling trends are more damaging to grain production if they are accompanied by changes in rainfall patterns than if they are not.
- (E) Long-range cooling trends are potentially more destructive to grain production than are long-range warming trends.

25. Noting that the number of crimes committed in a certain city had decreased in 1982 by 5.2 percent in comparison with 1981, the police chief of the city said, "We see here the result of the innovative police program put into effect in the city at the beginning of 1982."

Which of the following, if true, most seriously weakens the conclusion drawn by the police chief?

- (A) Several cities that have recently increased spending for police programs experienced no decrease in crime in 1982, as compared with 1981.
- (B) The number of crimes committed in the city is estimated, by the same method each year, from the number of crimes reported.
- (C) The number of crimes committed in the suburban areas surrounding the city rose by about 5 percent in 1982 over the figure for 1981 and were nearly equal in number to those in the city in 1982.
- (D) The number of crimes committed in the city in 1982 was 10 percent higher than the number committed in 1972.
- (E) The size of the age-group most likely to commit crimes decreased considerably in the city in 1982, as against 1981, because of a declining birth rate.

SECTION 2

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Heavily perfumed white flowers, such as gardenias, were favorites with collectors in the eighteenth century, when ----- was valued much more highly than it is today.
(A) scent (B) beauty (C) elegance
(D) color (E) variety
2. In a most impressive demonstration, Pavarotti sailed through Verdi's "Celeste Aïda," normally a tenor's -----, with the casual enthusiasm of a folk singer performing one of his favorite -----.
(A) pitfall..recitals (B) glory..chorales
(C) nightmare..ballads (D) delight..chanteys
(E) routine..composers
3. Dependence on foreign sources of heavy metals, though -----, remains ----- for United States foreign policy.
(A) deepening..a challenge
(B) diminishing..a problem
(C) excessive..a dilemma
(D) debilitating..an embarrassment
(E) unavoidable..a precedent
4. Cynics believe that people who ----- compliments do so in order to be praised twice.
(A) bask in (B) give out (C) despair of
(D) gloat over (E) shrug off
5. Although nothing could be further from the truth, freight railroads have been ----- of ----- the nation's shift from oil to coal by charging exorbitant fees to transport coal.
(A) accused..impeding
(B) proud..accelerating
(C) guilty..delaying
(D) conscious..contributing to
(E) wary..interfering with
6. Although the revelation that one of the contestants was a friend left the judge open to charges of lack of -----, the judge remained adamant in her assertion that acquaintance did not necessarily imply -----.
(A) prudence..tolerance
(B) detachment..foreknowledge
(C) exonerating..impropriety
(D) prejudice..preference
(E) disinterestedness..partiality
7. Within the next decade, sophisticated telescopes now orbiting the Earth will determine whether the continents really are moving, ----- the incipient ----- among geologists about the validity of the theory of continental drift.
(A) obviating..consensus
(B) forestalling..rift
(C) escalating..debates
(D) engendering..speculation
(E) resolving..rumors

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The use of heat pumps has been held back largely by skepticism about advertisers' claims that heat pumps can provide as many as two units of thermal energy for each unit of electrical energy used, thus apparently contradicting the principle of energy conservation.

- (5) used, thus apparently contradicting the principle of energy conservation.
- Heat pumps circulate a fluid refrigerant that cycles alternatively from its liquid phase to its vapor phase in a closed loop. The refrigerant, (10) starting as a low-temperature, low-pressure vapor, enters a compressor driven by an electric motor. The refrigerant leaves the compressor as a hot, dense vapor and flows through a heat exchanger called the condenser, which transfers heat from the (15) refrigerant to a body of air. Now the refrigerant, as a high-pressure, cooled liquid, confronts a flow restriction which causes the pressure to drop. As the pressure falls, the refrigerant expands and partially vaporizes, becoming chilled. It then passes (20) through a second heat exchanger, the evaporator, which transfers heat from the air to the refrigerant, reducing the temperature of this second body of air. Of the two heat exchangers, one is located inside, and the other one outside the house, so (25) each is in contact with a different body of air: room air and outside air, respectively.

The flow direction of refrigerant through a heat pump is controlled by valves. When the refrigerant flow is reversed, the heat exchangers switch function. This flow-reversal capability allows heat pumps either to heat or cool room air.

- Now, if under certain conditions a heat pump puts out more thermal energy than it consumes in electrical energy, has the law of energy conservation been challenged? No, not even remotely: the additional input of thermal energy into the circulating refrigerant via the evaporator accounts for the difference in the energy equation.

Unfortunately, there is one real problem. The (40) heating capacity of a heat pump decreases as the outdoor temperature falls. The drop in capacity is caused by the lessening amount of refrigerant mass moved through the compressor at one time. The heating capacity is proportional to this mass flow (45) rate: the less the mass of refrigerant being compressed, the less the thermal load it can transfer through the heat-pump cycle. The volume flow rate of refrigerant vapor through the single-speed rotary compressor used in heat pumps is approximately constant. But cold refrigerant vapor entering a compressor is at lower pressure than warmer vapor. Therefore, the mass of cold refrigerant—and thus the thermal energy it carries—is less than

if the refrigerant vapor were warmer before compression.

Here, then, lies a genuine drawback of heat pumps: in extremely cold climates—where the most heat is needed—heat pumps are least able to supply enough heat.

17. The primary purpose of the passage is to
- (A) explain the differences in the working of a heat pump when the outdoor temperature changes
(B) contrast the heating and the cooling modes of heat pumps
(C) describe heat pumps, their use, and factors affecting their use
(D) advocate the more widespread use of heat pumps
(E) expose extravagant claims about heat pumps as false
18. The author resolves the question of whether heat pumps run counter to the principle of energy conservation by
- (A) carefully qualifying the meaning of that principle
(B) pointing out a factual error in the statement that gives rise to this question
(C) supplying additional relevant facts
(D) denying the relevance of that principle to heat pumps
(E) explaining that heat pumps can cool, as well as heat, room air

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19. It can be inferred from the passage that, in the course of a heating season, the heating capacity of a heat pump is greatest when
- (A) heating is least essential
 - (B) electricity rates are lowest
 - (C) its compressor runs the fastest
 - (D) outdoor temperatures hold steady
 - (E) the heating demand surges
20. If the author's assessment of the use of heat pumps (lines 1-6) is correct, which of the following best expresses the lesson that advertisers should learn from this case?
- (A) Do not make exaggerated claims about the products you are trying to promote.
 - (B) Focus your advertising campaign on vague analogies and veiled implications instead of on facts.
 - (C) Do not use facts in your advertising that will strain the prospective client's ability to believe.
 - (D) Do not assume in your advertising that the prospective clients know even the most elementary scientific principles.
 - (E) Concentrate your advertising firmly on financially relevant issues such as price discounts and efficiency of operation.
21. The passage suggests that heat pumps would be used more widely if
- (A) they could also be used as air conditioners
 - (B) they could be moved around to supply heat where it is most needed
 - (C) their heat output could be thermostatically controlled
 - (D) models with truly superior cooling capacity were advertised more effectively
 - (E) people appreciated the role of the evaporator in the energy equation
22. According to the passage, the role of the flow restriction (lines 16-17) in a heat pump is to
- (A) measure accurately the flow rate of the refrigerant mass at that point
 - (B) compress and heat the refrigerant vapor
 - (C) bring about the evaporation and cooling of refrigerant
 - (D) exchange heat between the refrigerant and the air at that point
 - (E) reverse the direction of refrigerant flow when needed
23. The author regards the notion that heat pumps have a genuine drawback as a
- (A) cause for regret
 - (B) sign of premature defeatism
 - (C) welcome challenge
 - (D) case of sloppy thinking
 - (E) focus for an educational campaign

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All of Françoise Duparc's surviving paintings blend portraiture and genre. Her subjects appear to be acquaintances whom she has asked to pose; she has captured both their self-consciousness and the spontaneity of their everyday activities, the depiction of which characterizes genre painting. But genre painting, especially when it portrayed members of the humblest classes, was never popular in eighteenth-century France. The Le Nain brothers and Georges de La Tour, who also chose such themes, were largely ignored. Their present high standing is due to a different, more democratic political climate and to different aesthetic values: we no longer require artists to provide ideal images of humanity for our moral edification but rather regard such idealization as a falsification of the truth. Duparc gives no improving message and discreetly refrains from judging her subjects. In brief, her works neither elevate nor instruct. This restraint largely explains her lack of popular success during her lifetime, even if her talent did not go completely unrecognized by her eighteenth-century French contemporaries.

24. According to the passage, modern viewers are not likely to value which of the following qualities in a painting?
- (A) The technical elements of the painting
 - (B) The spontaneity of the painting
 - (C) The moral lesson imparted by the painting
 - (D) The degree to which the painting realistically depicts its subject
 - (E) The degree to which the artist's personality is revealed in the painting
25. If the history of Duparc's artistic reputation were to follow that of the Le Nain brothers and Georges de La Tour, present-day assessments of her work would be likely to contain which of the following?
- (A) An evaluation that accords high status to her work
 - (B) Acknowledgement of her technical expertise but dismissal of her subject matter as trivial
 - (C) Agreement with assessments made in her own time but acknowledgements of the exceptional quality of a few of her paintings
 - (D) Placement of her among the foremost artists of her century
 - (E) A reclassification of her work as portraiture rather than genre painting

26. It can be inferred from the passage that the term "genre painting" would most likely apply to which of the following?
- (A) A painting depicting a glorious moment of victory following a battle
 - (B) A painting illustrating a narrative from the Bible
 - (C) A portrayal of a mythological Greek goddess
 - (D) A portrayal of a servant engaged in his work
 - (E) A formal portrait of an eighteenth-century king
27. The argument of the passage best supports which of the following contentions concerning judgments of artistic work?
- (A) Aesthetic judgments can be influenced by the political beliefs of those making the judgment.
 - (B) Judgments of the value of an artist's work made by his or her contemporaries must be discounted before a true judgment can be made.
 - (C) Modern aesthetic taste is once again moving in the direction of regarding idealistic painting as the most desirable form of painting.
 - (D) In order to be highly regarded, an artist cannot be solely identified with one particular kind of painting.
 - (E) Spontaneity is the most valuable quality a portrait painter can have.

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SECTION 4
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The commission criticized the legislature for making college attendance dependent on the ability to pay, charging that, as a result, hundreds of qualified young people would be ----- further education.
(A) entitled to (B) striving for
(C) deprived of (D) uninterested in
(E) participating in
2. In most Native American cultures, an article used in prayer or ritual is made with extraordinary attention to and richness of detail: it is decorated more ----- than a similar article intended for ----- use.
(A) delicately. .vocational
(B) colorfully. .festive
(C) creatively. .religious
(D) subtly. .commercial
(E) lavishly. .everyday
3. Having no sense of moral obligation, Shipley was as little subject to the ----- of conscience after he acted as he was motivated by its ----- before he acted.
(A) rewards. .chastisement
(B) balm. .eloquence
(C) reproaches. .promptings
(D) ridicule. .allure
(E) qualms. .atonement
4. Freud derived psychoanalytic knowledge of childhood indirectly: he ----- childhood processes from adult -----.
(A) reconstructed. .memory
(B) condoned. .experience
(C) incorporated. .behavior
(D) released. .monotony
(E) inferred. .anticipation
5. While she initially suffered the fate of many pioneers—the incomprehension of her colleagues—octogenarian Nobel laureate Barbara McClintock has lived to ----- the triumph of her once ----- scientific theories.
(A) descry. .innovative
(B) regret. .insignificant
(C) perpetuate. .tentative
(D) enjoy. .authoritative
(E) savor. .heterodox
6. Broadway audiences have become inured to ----- and so ----- to be pleased as to make their ready ovations meaningless as an indicator of the quality of the production before them.
(A) sentimentality. .reluctant
(B) condescension. .disinclined
(C) histrionics. .unlikely
(D) cleverness. .eager
(E) mediocrity. .desperate
7. Any language is a conspiracy against experience in the sense that it is a collective attempt to ----- experience by reducing it into discrete parcels.
(A) extrapolate (B) transcribe (C) complicate
(D) amplify (E) manage

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Mycorrhizal fungi infect more plants than do any other fungi and are necessary for many plants to thrive, but they have escaped widespread investigation until recently for two reasons. First, the symbiotic association is so well-balanced that the roots of host plants show no damage even when densely infected. Second, the fungi cannot as yet be cultivated in the absence of a living root. Despite these difficulties, there has been important new work that suggests that this symbiotic association can be harnessed to achieve more economical use of costly superphosphate fertilizer and to permit better exploitation of cheaper, less soluble rock phosphate. Mycorrhizal benefits are not limited to improved phosphate uptake in host plants. In legumes, mycorrhizal inoculation has increased nitrogen fixation beyond levels achieved by adding phosphate fertilizer alone. Certain symbiotic associations also increase the host plant's resistance to harmful root fungi. Whether this resistance results from exclusion of harmful fungi through competition for sites, from metabolic change involving antibiotic production, or from increased vigor is undetermined.

17. Which of the following most accurately describes the passage?
- (A) A description of a replicable experiment
 - (B) A summary report of new findings
 - (C) A recommendation for abandoning a difficult area of research
 - (D) A refutation of an earlier hypothesis
 - (E) A confirmation of earlier research
18. The level of information in the passage above is suited to the needs of all of the following people EXCEPT
- (A) a researcher whose job is to identify potentially profitable areas for research and product development
 - (B) a state official whose position requires her to alert farmers about possible innovations in farming
 - (C) an official of a research foundation who identifies research projects for potential funding
 - (D) a biologist attempting to keep up with scientific developments in an area outside of his immediate area of specialization
 - (E) a botanist conducting experiments to determine the relationship between degree of mycorrhizal infection and expected uptake of phosphate
19. It can be inferred from the passage that which of the following has been a factor influencing the extent to which research on mycorrhizal fungi has progressed?
- (A) Lack of funding for such research
 - (B) Lack of immediate application of such research
 - (C) Lack of a method for identifying mycorrhizal fungi
 - (D) Difficulties surrounding laboratory production of specimens for study
 - (E) Difficulties ensuing from the high cost and scarcity of superphosphate fertilizers
20. The passage suggests which of the following about the increased resistance to harmful root fungi that some plants infected with mycorrhizal fungi seem to exhibit?
- (A) There are at least three hypotheses that might account for the increase.
 - (B) An explanation lies in the fact that mycorrhizal fungi increase more rapidly in number than harmful root fungi do.
 - (C) The plants that show increased resistance also exhibit improved nitrogen fixation.
 - (D) Such increases may be independent of mycorrhizal infection.
 - (E) It is unlikely that a satisfactory explanation can be found to account for the increase.

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In the early 1950's, historians who studied preindustrial Europe (which we may define here as Europe in the period from roughly 1300 to 1800) began, for the first time in large numbers, to investigate more of the preindustrial European population than the 2 or 3 percent who comprised the political and social elite: the kings, generals, judges, nobles, bishops, and local magnates who had hitherto usually filled history books. One difficulty, however, was that few of the remaining 97 percent recorded their thoughts or had them chronicled by contemporaries. Faced with this situation, many historians based their investigations on the only records that seemed to exist: birth, marriage, and death records. As a result, much of the early work on the nonelite was aridly statistical in nature; reducing the vast majority of the population to a set of numbers was hardly more enlightening than ignoring them altogether. Historians still did not know what these people thought or felt.

One way out of this dilemma was to turn to the records of legal courts, for here the voices of the nonelite can most often be heard, as witnesses, plaintiffs, and defendants. These documents have acted as "a point of entry into the mental world of the poor." Historians such as Le Roy Ladurie have used the documents to extract case histories, which have illuminated the attitudes of different social groups (these attitudes include, but are not confined to, attitudes toward crime and the law) and have revealed how the authorities administered justice. It has been societies that have had a developed police system and practiced Roman law, with its written depositions, whose court records have yielded the most data to historians. In Anglo-Saxon countries hardly any of these benefits obtain, but it has still been possible to glean information from the study of legal documents.

The extraction of case histories is not, however, the only use to which court records may be put. Historians who study preindustrial Europe have used the records to establish a series of categories of crime and to quantify indictments that were issued over a given number of years. This use of the records does yield some information about the nonelite, but this information gives us little insight into the mental lives of the nonelite. We also know that the number of indictments in preindustrial Europe bears little relation to the number of actual criminal acts, and we strongly suspect that the relationship has varied widely over time. In addition, aggregate population estimates are very shaky, which makes it difficult for historians to compare rates of crime per thousand in one decade of the preindustrial period with rates in another decade. Given these inadequacies, it is clear why the case history use of court records is to be preferred.

21. The author suggests that, before the early 1950's, most historians who studied preindustrial Europe did which of the following?
- (A) Failed to make distinctions among members of the preindustrial European political and social elite.
 - (B) Used investigatory methods that were almost exclusively statistical in nature.
 - (C) Inaccurately estimated the influence of the preindustrial European political and social elite.
 - (D) Confined their work to a narrow range of the preindustrial European population.
 - (E) Tended to rely heavily on birth, marriage, and death records.
22. According to the passage, the case histories extracted by historians have
- (A) scarcely illuminated the attitudes of the political and social elite
 - (B) indicated the manner in which those in power apportioned justice
 - (C) focused almost entirely on the thoughts and feelings of different social groups toward crime and the law
 - (D) been considered the first kind of historical writing that utilized the records of legal courts
 - (E) been based for the most part on the trial testimony of police and other legal authorities
23. It can be inferred from the passage that much of the early work by historians on the European nonelite of the preindustrial period might have been more illuminating if these historians had
- (A) used different methods of statistical analysis to investigate the nonelite
 - (B) been more successful in identifying the attitudes of civil authorities, especially those who administered justice, toward the nonelite
 - (C) been able to draw on more accounts, written by contemporaries of the nonelite, that described what this nonelite thought
 - (D) relied more heavily on the personal records left by members of the European political and social elite who lived during the period in question
 - (E) been more willing to base their research on the birth, marriage, and death records of the nonelite

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24. The author mentions Le Roy Ladurie (line 26) in order to
- (A) give an example of a historian who has made one kind of use of court records
 - (B) cite a historian who has based case histories on the birth, marriage, and death records of the nonelite
 - (C) identify the author of the quotation cited in the previous sentence
 - (D) gain authoritative support for the view that the case history approach is the most fruitful approach to court records
 - (E) point out the first historian to realize the value of court records in illuminating the beliefs and values of the nonelite
25. According to the passage, which of the following is true of indictments for crime in Europe in the pre-industrial period?
- (A) They have, in terms of their numbers, remained relatively constant over time.
 - (B) They give the historian important information about the mental lives of those indicted.
 - (C) They are not a particularly accurate indication of the extent of actual criminal activity.
 - (D) Their importance to historians of the nonelite has been generally overestimated.
 - (E) Their problematic relationship to actual crime has not been acknowledged by most historians.
26. It can be inferred from the passage that a historian who wished to compare crime rates per thousand in a European city in one decade of the fifteenth century with crime rates in another decade of that century would probably be most aided by better information about which of the following?
- (A) The causes of unrest in the city during the two decades
 - (B) The aggregate number of indictments in the city nearest to the city under investigation during the two decades
 - (C) The number of people who lived in the city during each of the decades under investigation
 - (D) The mental attitudes of criminals in the city, including their feelings about authority, during each of the decades under investigation
 - (E) The possibilities for a member of the city's nonelite to become a member of the political and social elite during the two decades
27. The passage would be most likely to appear as part of
- (A) a book review summarizing the achievements of historians of the European aristocracy
 - (B) an essay describing trends in the practice of writing history
 - (C) a textbook on the application of statistical methods in the social sciences
 - (D) a report to the historical profession on the work of early-twentieth-century historians
 - (E) an article urging the adoption of historical methods by the legal profession

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8. A child watching television experiences a procession of sights and sounds that flash from the screen just long enough for the eyes and ears to take them in. Unlike the pages of a book, which can be read as slowly or as quickly as the child wishes, television images appear with a relentless velocity that stunts rather than enhances the child's powers of imagination.

The view expressed above is based on an assumption. Of the following, which can best serve as that assumption?

- (A) When allowed to choose a form of entertainment, children will prefer reading to watching television.
- (B) A child's imagination cannot be properly stimulated unless the child has access both to television and to books.
- (C) A child's imagination can develop more fully when the child is able to control the pace of its entertainment.
- (D) Children should be taught to read as soon as they are able to understand what they see on television.
- (E) A child's reaction to different forms of sensory stimuli cannot be predicted, since every child is different.

9. Luis has just seen two ravens; therefore, the next bird Luis sees will be a raven.

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

- (A) Ravens tend to move in flocks.
- (B) Ravens generally build their nests at a considerable distance from the nests of other ravens.
- (C) Luis is in California, and ravens are occasionally seen in California.
- (D) Luis has seen ravens in other places than the place where he is now.
- (E) Luis is actively looking for birds.

10. It is true that increasing demand for a limited number of products drives up the price of those products. However, if we cut tax rates, then people will retain a higher percentage of their income and will be encouraged to work harder and produce more. Therefore, the increase in demand resulting from greater disposable income will not result in higher prices for the products available.

In the passage above, the author makes which of the following arguments?

- (A) Reducing taxes is likely to result in less disposable income.
- (B) Reducing taxes is likely to decrease demand.
- (C) Reducing taxes can fail to result in greater disposable income.
- (D) Reducing taxes will probably restrict the availability of certain products.
- (E) Reducing taxes will not necessarily lead to increased prices.

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23. Nursing homes range from three to five stories in height. If a nursing-home room is above the first floor, it has a fire escape.

If the above statements are true, which of the following must also be true?

- (A) First-floor rooms in nursing homes do not have fire escapes.
(B) Fire escapes are allowed but not required for first-floor rooms in nursing homes.
(C) Some nursing homes have no fire escapes.
(D) Not all nursing homes have proper fire escapes.
(E) Second-floor rooms in nursing homes have fire escapes.
24. At Midwest University, there is no collusion between the athletic office and the admissions office. Athletes must be accepted for admission to the university on the basis of their academic records before they can be offered financial assistance on the basis of athletic ability. The university thus hopes to avoid the kind of recruiting violations that have been a problem at other universities.
- It can be inferred from the passage above that
- (A) the admission policy described above is unique to Midwest University
(B) some universities offer financial assistance to athletes who would not be admitted to the university on the basis of their academic records
(C) most student athletes in universities are admitted solely on the basis of athletic ability
(D) admissions offices do not modify academic admission requirements for any students except student athletes
(E) in many universities, athletic offices are often at odds with admissions offices

25. Our words are meaningless and cannot be distinguished from their opposites, as can be proved by an example. People think that they know the difference between the meanings of "bald" and "having hair." Suppose an average person twenty-one years of age has N hairs on his or her head. We say that that person is not bald but has hair. But surely one hair less would make no difference, and a person with $N - 1$ hairs on his or her head would be said to have hair. Suppose we kept on, with one hair less each time. The result would be the same. But what would be the difference between someone who had one hair and someone who had none? We call them both bald. Nowhere can we make a distinction between "bald" and "having hair."

Which of the following statements best counters the argument above?

- (A) The word "bald" can be translated into other languages.
(B) A word can have more than one meaning.
(C) A word such as "cat" can be applied to several animals that differ in some respects.
(D) Words can lack precision without being meaningless.
(E) People cannot think clearly without using words.

TEST 6

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. By divesting himself of all regalities, the former king ----- the consideration that customarily protects monarchs.

(A) merited (B) forfeited (C) debased
(D) concealed (E) extended

2. A perennial goal in zoology is to infer function from -----, relating the ----- of an organism to its physical form and cellular organization.

(A) age..ancestry
(B) classification..appearance
(C) size..movement
(D) structure..behavior
(E) location..habitat

3. The sociologist responded to the charge that her new theory was ----- by pointing out that it did not in fact contradict accepted sociological principles.

(A) banal (B) heretical (C) unproven
(D) complex (E) superficial

4. Industrialists seized economic power only after industry had ----- agriculture as the preeminent form of production; previously such power had ----- land ownership.

(A) sabotaged..threatened
(B) overtaken..produced
(C) toppled..culminated in
(D) joined..relied on
(E) supplanted..resided in

5. Rumors, embroidered with detail, live on for years, neither denied nor confirmed, until they become accepted as fact even among people not known for their -----.

(A) insight (B) obstinacy (C) introspection
(D) tolerance (E) credulity

6. No longer ----- by the belief that the world around us was expressly designed for humanity, many people try to find intellectual ----- for that lost certainty in astrology and in mysticism.

(A) satisfied..reasons
(B) sustained..substitutes
(C) reassured..justifications
(D) hampered..equivalents
(E) restricted..parallels

7. People should not be praised for their virtue if they lack the energy to be -----; in such cases, goodness is merely the effect of -----.

(A) depraved..hesitation
(B) cruel..effortlessness
(C) wicked..indolence
(D) unjust..boredom
(E) iniquitous..impiety

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The belief that art originates in intuitive rather than rational faculties was worked out historically and philosophically in the somewhat wearisome volumes of Benedetto Croce, who is usually considered the originator of a new aesthetic. Croce was, in fact, expressing a very old idea. Long before the Romantics stressed intuition and self-expression, the frenzy of inspiration was regarded as fundamental to art, but philosophers had always assumed it must be controlled by law and by the intellectual power of putting things into harmonious order. This general philosophic concept of art was supported by technical necessities. It was necessary to master certain laws and to use intellect in order to build Gothic cathedrals, or set up the stained glass windows of Chartres. When this bracing element of craftsmanship ceased to dominate artists' outlook, new technical elements had to be adopted to maintain the intellectual element in art. Such were linear perspective and anatomy.

17. The passage suggests that which of the following would most likely have occurred if linear perspective and anatomy had not come to influence artistic endeavor?
- (A) The craftsmanship that shaped Gothic architecture would have continued to dominate artists' outlooks.
 - (B) Some other technical elements would have been adopted to discipline artistic inspiration.
 - (C) Intellectual control over artistic inspiration would not have influenced painting as it did architecture.
 - (D) The role of intuitive inspiration would not have remained fundamental to theories of artistic creation.
 - (E) The assumptions of aesthetic philosophers before Croce would have been invalidated.
18. The passage supplies information for answering which of the following questions?
- (A) Does Romantic art exhibit the triumph of intuition over intellect?
 - (B) Did an emphasis on linear perspective and anatomy dominate Romantic art?
 - (C) Are the intellectual and intuitive faculties harmoniously balanced in post-Romantic art?
 - (D) Are the effects of the rational control of artistic inspiration evident in the great works of pre-Romantic eras?
 - (E) Was the artistic craftsmanship displayed in Gothic cathedrals also an element in paintings of this period?

19. The passage implies that which of the following was a traditional assumption of aesthetic philosophers?
- (A) Intellectual elements in art exert a necessary control over artistic inspiration.
 - (B) Architecture has never again reached the artistic greatness of the Gothic cathedrals.
 - (C) Aesthetic philosophy is determined by the technical necessities of art.
 - (D) Artistic craftsmanship is more important in architectural art than in pictorial art.
 - (E) Paintings lacked the intellectual element before the invention of linear perspective and anatomy.
20. The author mentions "linear perspective and anatomy" in the last sentence in order to do which of the following?
- (A) Expand his argument to include painting as well as architecture
 - (B) Indicate his disagreement with Croce's theory of the origins of art
 - (C) Support his point that rational order of some kind has often seemed to discipline artistic inspiration
 - (D) Explain the rational elements in Gothic painting that corresponded to craftsmanship in Gothic architecture
 - (E) Show the increasing sophistication of artists after the Gothic period

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(The passage below is drawn from an article published in 1962.)

Computer programmers often remark that computing machines, with a perfect lack of discrimination, will do any foolish thing they are told to do. The reason for this lies, of course, in the narrow fixation of the computing machine's "intelligence" on the details of its own perceptions—its inability to be guided by any large context. In a psychological description of the computer intelligence, three related adjectives come to mind: single-minded, literal-minded, and simpleminded. Recognizing this, we should at the same time recognize that this single-mindedness, literal-mindedness, and simplemindedness also characterizes theoretical mathematics, though to a lesser extent.

Since science tries to deal with reality, even the most precise sciences normally work with more or less imperfectly understood approximations toward which scientists must maintain an appropriate skepticism. Thus, for instance, it may come as a shock to mathematicians to learn that the Schrödinger equation for the hydrogen atom is not a literally correct description of this atom, but only an approximation to a somewhat more correct equation taking account of spin, magnetic dipole, and relativistic effects; and that this corrected equation is itself only an imperfect approximation to an infinite set of quantum field-theoretical equations. Physicists, looking at the original Schrödinger equation, learn to sense in it the presence of many invisible terms in addition to the differential terms visible, and this sense inspires an entirely appropriate disregard for the purely technical features of the equation. This very healthy skepticism is foreign to the mathematical approach.

Mathematics must deal with well-defined situations. Thus, mathematicians depend on an intellectual effort outside of mathematics for the crucial specification of the approximation that mathematics is to take literally. Give mathematicians a situation that is the least bit ill-defined, and they will make it well-defined, perhaps appropriately, but perhaps inappropriately. In some cases, the mathematicians' literal-mindedness may have unfortunate consequences. The mathematicians turn the scientists' theoretical assumptions, that is, their convenient points of analytical emphasis, into axioms, and then take these axioms literally. This brings the danger that they may also persuade the scientists to take these axioms literally. The question, central to the scientific investigation but intensely disturbing in the mathematical context—what happens if the axioms are relaxed?—is thereby ignored.

The physicist rightly dreads precise argument, since an argument that is convincing only if it is precise loses all its force if the assumptions on which it is based are slightly changed, whereas an argument that is convincing though imprecise may well be stable under small perturbations of its underlying assumptions.

21. The author discusses computing machines in the first paragraph primarily in order to do which of the following?
 - (A) Indicate the dangers inherent in relying to a great extent on machines
 - (B) Illustrate his views about the approach of mathematicians to problem solving
 - (C) Compare the work of mathematicians with that of computer programmers
 - (D) Provide one definition of intelligence
 - (E) Emphasize the importance of computers in modern technological society
22. According to the passage, scientists are skeptical toward their equations because scientists
 - (A) work to explain real, rather than theoretical or simplified, situations
 - (B) know that well-defined problems are often the most difficult to solve
 - (C) are unable to express their data in terms of multiple variables
 - (D) are unwilling to relax the axioms they have developed
 - (E) are unable to accept mathematical explanations of natural phenomena
23. It can be inferred from the passage that scientists make which of the following assumptions about scientific arguments?
 - (A) The literal truth of the arguments can be made clear only in a mathematical context.
 - (B) The arguments necessarily ignore the central question of scientific investigation.
 - (C) The arguments probably will be convincing only to other scientists.
 - (D) The conclusions of the arguments do not necessarily follow from their premises.
 - (E) The premises on which the arguments are based may change.

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24. According to the passage, mathematicians present a danger to scientists for which of the following reasons?
- (A) Mathematicians may provide theories that are incompatible with those already developed by scientists.
 - (B) Mathematicians may define situations in a way that is incomprehensible to scientists.
 - (C) Mathematicians may convince scientists that theoretical assumptions are facts.
 - (D) Scientists may come to believe that axiomatic statements are untrue.
 - (E) Scientists may begin to provide arguments that are convincing but imprecise.
25. The author suggests that the approach of physicists to solving scientific problems is which of the following?
- (A) Practical for scientific purposes
 - (B) Detrimental to scientific progress
 - (C) Unimportant in most situations
 - (D) Expedient, but of little long-term value
 - (E) Effective, but rarely recognized as such
26. The author suggests that a mathematician asked to solve a problem in an ill-defined situation would first attempt to do which of the following?
- (A) Identify an analogous situation
 - (B) Simplify and define the situation
 - (C) Vary the underlying assumptions of a description of the situation
 - (D) Determine what use would be made of the solution provided
 - (E) Evaluate the theoretical assumptions that might explain the situation
27. The author implies that scientists develop a healthy skepticism because they are aware that
- (A) mathematicians are better able to solve problems than are scientists
 - (B) changes in axiomatic propositions will inevitably undermine scientific arguments
 - (C) well-defined situations are necessary for the design of reliable experiments
 - (D) mathematical solutions can rarely be applied to real problems
 - (E) some factors in most situations must remain unknown

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SECTION 2
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Animals that have tasted unpalatable plants tend to ----- them afterward on the basis of their most conspicuous features, such as their flowers.
(A) recognize (B) hoard (C) trample
(D) retrieve (E) approach
2. As for the alleged value of expert opinion, one need only ----- government records to see ----- evidence of the failure of such opinions in many fields.
(A) inspect..questionable
(B) retain..circumstantial
(C) distribute..possible
(D) consult..strong
(E) evaluate..problematic
3. In scientific inquiry it becomes a matter of duty to expose a ----- hypothesis to every possible kind of -----.
(A) tentative..examination
(B) debatable..approximation
(C) well-established..rationalization
(D) logical..elaboration
(E) suspect..correlation
4. Charlotte Salomon's biography is a reminder that the currents of private life, however diverted, dislodged, or twisted by ----- public events, retain their hold on the ----- recording them.
(A) transitory..culture
(B) dramatic..majority
(C) overpowering..individual
(D) conventional..audience
(E) relentless..institution
5. Philosophical problems arise when people ask questions that, though very -----, have certain characteristics in common.
(A) relevant
(B) elementary
(C) abstract
(D) diverse
(E) controversial
6. Although Johnson ----- great enthusiasm for his employees' project, in reality his interest in the project was so ----- as to be almost non-existent.
(A) generated..redundant
(B) displayed..preemptive
(C) expected..indiscriminate
(D) feigned..perfunctory
(E) demanded..dispassionate
7. Not all the indicators necessary to convey the effect of depth in a picture work simultaneously; the picture's illusion of ----- three-dimensional appearance must therefore result from the viewer's integration of various indicators perceived -----.
(A) imitative..coincidentally
(B) uniform..successively
(C) temporary..comprehensively
(D) expressive..sympathetically
(E) schematic..passively

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

In eighteenth-century France and England, reformers rallied around egalitarian ideals, but few reformers advocated higher education for women. Although the public decried women's lack of education, it did not encourage learning for its own sake for women. In spite of the general prejudice against learned women, there was one place where women could exhibit their erudition: the literary salon. Many writers have defined the woman's role in the salon as that of an intelligent hostess, but the salon had more than a social function for women. It was an informal university, too, where women exchanged ideas with educated persons, read their own works and heard those of others, and received and gave criticism.

In the 1750's, when salons were firmly established in France, some English women, who called themselves "Bluestockings," followed the example of the *salonnières* (French salon hostesses) and formed their own salons. Most Bluestockings did not wish to mirror the *salonnières*; they simply desired to adapt a proven formula to their own purpose—the elevation of women's status through moral and intellectual training. Differences in social orientation and background can account perhaps for differences in the nature of French and English salons. The French salon incorporated aristocratic attitudes that exalted courtly pleasure and emphasized artistic accomplishments. The English Bluestockings, originating from a more modest background, emphasized learning and work over pleasure. Accustomed to the regimented life of court circles, *salonnières* tended toward formality in their salons. The English women, though somewhat puritanical, were more casual in their approach.

At first, the Bluestockings did imitate the *salonnières* by including men in their circles. However, as they gained cohesion, the Bluestockings came to regard themselves as a women's group and to possess a sense of female solidarity lacking in the *salonnières*, who remained isolated from one another by the primacy each held in her own salon. In an atmosphere of mutual support, the Bluestockings went beyond the salon experience. They traveled, studied, worked, wrote for publication, and by their activities challenged the stereotype of the passive woman. Although the *salonnières* were aware of sexual inequality, the narrow boundaries of their world kept their intellectual pursuits within conventional limits. Many

salonnières, in fact, camouflaged their nontraditional activities behind the role of hostess and deferred to men in public.

Though the Bluestockings were trailblazers when compared with the *salonnières*, they were not feminists. They were too traditional, too hemmed in by their generation to demand social and political rights. Nonetheless, in their desire for education, their willingness to go beyond the confines of the salon in pursuing their interests, and their championing of unity among women, the Bluestockings began the process of questioning women's role in society.

17. Which of the following best states the central idea of the passage?
- (A) The establishment of literary salons was a response to reformers' demands for social rights for women.
 - (B) Literary salons were originally intended to be a meeting ground for intellectuals of both sexes, but eventually became social gatherings with little educational value.
 - (C) In England, as in France, the general prejudice against higher education for women limited women's function in literary salons to a primarily social one.
 - (D) The literary salons provided a sounding board for French and English women who called for access to all the educational institutions in their societies on an equal basis with men.
 - (E) For women, who did not have access to higher education as men did, literary salons provided an alternate route to learning and a challenge to some of society's basic assumptions about women.

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18. According to the passage, a significant distinction between the *salonnières* and Bluestockings was in the way each group regarded which of the following?
- (A) The value of acquiring knowledge
(B) The role of pleasure in the activities of the literary salon
(C) The desirability of a complete break with societal traditions
(D) The inclusion of women of different backgrounds in the salons
(E) The attainment of full social and political equality with men
19. The author refers to differences in social background between *salonnières* and Bluestockings in order to do which of the following?
- (A) Criticize the view that their choices of activities were significantly influenced by male salon members
(B) Discuss the reasons why literary salons in France were established before those in England
(C) Question the importance of the Bluestockings in shaping public attitudes toward educated women
(D) Refute the argument that the French salons had little influence over the direction the English salons took
(E) Explain the differences in atmosphere and style in their salons
20. Which of the following statements is most compatible with the principles of the *salonnières* as described in the passage?
- (A) Women should aspire to be not only educated but independent as well.
(B) The duty of the educated woman is to provide an active political model for less educated women.
(C) Devotion to pleasure and art is justified in itself.
(D) Substance, rather than form, is the most important consideration in holding a literary salon.
(E) Men should be excluded from groups of women's rights supporters.
21. The passage suggests that the Bluestockings might have had a more significant impact on society if it had not been for which of the following?
- (A) Competitiveness among their salons
(B) Their emphasis on individualism
(C) The limited scope of their activities
(D) Their acceptance of the French salon as a model for their own salons
(E) Their unwillingness to defy aggressively the conventions of their age
22. Which of the following could best be considered a twentieth-century counterpart of an eighteenth-century literary salon as it is described in the passage?
- (A) A social sorority
(B) A community center
(C) A lecture course on art
(D) A humanities study group
(E) An association of moral reformers
23. To an assertion that Bluestockings were feminists, the author would most probably respond with which of the following?
- (A) Admitted uncertainty
(B) Qualified disagreement
(C) Unquestioning approval
(D) Complete indifference
(E) Strong disparagement
24. Which of the following titles best describes the content of the passage?
- (A) Eighteenth-Century Egalitarianism
(B) Feminists of the Eighteenth Century
(C) Eighteenth-Century Precursors of Feminism
(D) Intellectual Life in the Eighteenth Century
(E) Female Education Reform in the Eighteenth Century

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When the same parameters and quantitative theory are used to analyze both termite colonies and troops of rhesus macaques, we will have a unified science of sociobiology. Can this ever really happen? As my own studies have advanced, I have been increasingly impressed with the functional similarities between insect and vertebrate societies and less so with the structural differences that seem, at first glance, to constitute such an immense gulf between them. Consider for a moment termites and macaques. Both form cooperative groups that occupy territories. In both kinds of society there is a well-marked division of labor. Members of both groups communicate to each other hunger, alarm, hostility, caste status or rank, and reproductive status. From the specialist's point of view, this comparison may at first seem facile—or worse. But it is out of such deliberate oversimplification that the beginnings of a general theory are made.

25. Which of the following best summarizes the author's main point?
- (A) Oversimplified comparisons of animal societies could diminish the likelihood of developing a unified science of sociobiology.
 - (B) Understanding the ways in which animals as different as termites and rhesus macaques resemble each other requires training in both biology and sociology.
 - (C) Most animals organize themselves into societies that exhibit patterns of group behavior similar to those of human societies.
 - (D) Animals as different as termites and rhesus macaques follow certain similar and predictable patterns of behavior.
 - (E) A study of the similarities between insect and vertebrate societies could provide the basis for a unified science of sociobiology.
26. The author's attitude toward the possibility of a unified theory in sociobiology is best described as which of the following?
- (A) Guarded optimism
 - (B) Unqualified enthusiasm
 - (C) Objective indifference
 - (D) Resignation
 - (E) Dissatisfaction
27. In discussing insect and vertebrate societies, the author suggests which of the following?
- (A) A distinguishing characteristic of most insect and vertebrate societies is a well-marked division of labor.
 - (B) The caste structure of insect societies is similar to that of vertebrate societies.
 - (C) Most insect and vertebrate societies form cooperative groups in order to occupy territory.
 - (D) The means of communication among members of insect societies is similar to that among members of vertebrate societies.
 - (E) There are significant structural differences between insect and vertebrate societies.

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5. If your radio was made after 1972, it has a stereo feature.

The statement above can be deduced logically from which of the following statements?

- (A) Only if a radio was made after 1972 could it have a stereo feature.
- (B) All radios made after 1972 have a stereo feature.
- (C) Some radios made before 1972 had a stereo feature.
- (D) Some stereo features are found in radios made after 1972.
- (E) Stereo features for radios were fully developed only after 1972.

6. Rule 1 of Game X provides that anyone who refuses to become a player in Game X shall at the moment of refusal be assessed a ten-point penalty in the game.

Which of the following claims is implicit in Rule 1?

- (A) All those who agree to play Game X will achieve scores higher than the scores of those who were assessed a penalty under Rule 1.
- (B) A person can avoid a ten-point penalty by initially agreeing to become a player and then withdrawing after the game is underway.
- (C) The rules of Game X supply a procedure for determining when the game is over.
- (D) A person who refuses to play Game X cannot be declared a loser in the game.
- (E) A person can at the same time decline to play Game X and yet be a part of the game.

7. A common misconception is that university hospitals are better than community or private hospitals. In fact, university hospitals have a lower survival rate for patients than do other hospitals. From this it seems clear that the quality of care at university hospitals is lower than that at other hospitals.

Which of the following, if true, most forcefully undermines the argument of the passage above?

- (A) Many doctors divide their working hours between a university and a community or private hospital.
- (B) Doctors at university hospitals often earn less than doctors at private hospitals.
- (C) University and community hospitals often cannot afford the elaborate facilities of private hospitals.
- (D) The emphasis at many university hospitals is on pure research rather than on the treatment and care of patients.
- (E) The patients who seek help at university hospitals are usually more seriously ill than those at private or community hospitals.

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24. In 1975, 35 percent of state W's work force was employed in manufacturing jobs. That percentage dropped in each following year until in 1982 it reached 25 percent.

If the statements above are true, all of the following statements about changes in W's work force between 1975 and 1982 could also be true EXCEPT:

- (A) The number of people in the work force increased, while the number of people employed in manufacturing jobs decreased.
- (B) The number of people in the work force decreased, while the number of people employed in manufacturing jobs increased.
- (C) Both the number of people in the work force and the number of people employed in manufacturing jobs increased.
- (D) Both the number of people in the work force and the number of people employed in manufacturing jobs decreased.
- (E) The number of people in the work force remained constant, while the number of people employed in manufacturing jobs decreased.

25. The excessive number of safety regulations that the federal government has placed on industry poses more serious hardships for big businesses than for small ones. Since large companies do everything on a more massive scale, they must alter more complex operations and spend much more money to meet governmental requirements.

Which of the following, if true, would most weaken the argument above?

- (A) Small companies are less likely than large companies to have the capital reserves for improvements.
- (B) The operations of small companies frequently rely on the same technologies as the operations of large companies.
- (C) Safety regulation codes are uniform, established without reference to size of company.
- (D) Large companies typically have more of their profits invested in other businesses than do small companies.
- (E) Large companies are in general more likely than small companies to diversify their markets and products.

5. Public education suffers from what can be diagnosed as the sickness of an overgoverned society. This sickness denies many parents control over the kind of education their children receive. The power once held by parents has gravitated to professional educators. The sickness has been aggravated by increasing centralization and bureaucratization of schools.
- Which of the following, if true, would weaken the claim that there is continuing erosion of parents' control over their children's education?
- (A) As a result of community pressure, growing numbers of school administrators follow recommendations made by parents.
- (B) The number of professional educators has risen sharply over the last decade even though the number of students has declined.
- (C) Parents' organizations that lobby for changes in school curriculums are generally ineffectual.
- (D) More members of school boards are appointed by school administrators than are elected by the public.
- (E) The use of state-wide curriculum programs increased in the United States during the past two decades.
6. From a certain farming region, trucks can carry vegetables to market in New Mexico in two days for a total cost of \$300. A train will carry the vegetables there in four days for \$200. If reducing time in transit is more important to the owner of the vegetables than is reducing the shipping bill, he or she will send the vegetables by truck.
- Which of the following is an assumption made in the passage above?
- (A) Vegetables can be sold more profitably when shipped by train than by truck.
- (B) Other than speed and cost, there are no significant differences between truck and train transportation from the farming region to New Mexico.
- (C) The time required to ship vegetables by train from the farming region to New Mexico could be reduced to two days if the price for this service were raised.
- (D) Most owners of vegetables in the region are more concerned with shipping costs than with the time involved in shipping vegetables to market.
- (E) Transportation of vegetables by truck is worth at least \$200 per day to owners of the vegetables in the farming region.
7. The expression "the doctrine of unshakable foundations" was once used by a critic in an effort to illuminate the dogmatic nature of certain economic and political philosophies whose adherents, when confronted with the failure of a policy designed to put their philosophy into practice, can conceive of only one reaction: to design another, different policy for putting it into practice.
- It can be inferred from the passage above that the critic would approve if the adherents
- (A) had the courage to try a failed policy again without any changes
- (B) had refrained from trying to put any of their philosophies into practice
- (C) allowed failure of a policy to lead them to question the underpinnings of their philosophies
- (D) concluded from the failure of a policy of theirs that the policy must not have reflected their philosophy adequately
- (E) carefully analyzed those traits of a failed policy that appear promising despite the overall failure

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24. The results of a recent poll in the United States indicate that the public, by 80 percent to 17 percent, opposes relaxation of existing regulation of air pollution. Furthermore, not a single major segment of the public wants environmental laws made less strict. The results of this poll reveal that legislators, by voting for renewal of the Clean Air Act, will be responsive to the will of the public without alienating any significant special-interest groups.
- Which of the following pieces of information would be most useful in evaluating the logic of the argument presented above?
- (A) The groups in the population that were defined as major segments of the public and the groups defined as special-interest groups
- (B) The length of time that current federal environmental laws have been in effect and the length of time that states have regulated air pollution
- (C) The probable economic effect of renewal of the Clean Air Act on those opposed to and those in favor of relaxing environmental laws
- (D) The people whom the author hopes to influence by citing the results of the poll
- (E) The percentage of those surveyed who chose not to respond to the questions asked of them
25. After a rebellion in a certain country was put down, the country's parliament debated how to deal with the defeated rebels. One side proposed that all the rebels be imprisoned in order to deter those who might be strongly tempted to rebel in the future. The other side argued against imprisonment because it would only discourage future insurrectionists from surrendering.
- Both positions logically depend on the assumption that
- (A) imprisonment is a harsh penalty
- (B) a rebel will prefer a sentence of imprisonment to death
- (C) there will be no future rebellion in the country
- (D) it is unlikely that future rebels will surrender
- (E) resistance to authority is weakened by harsh threats

TEST 7

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Her ----- should not be confused with miserliness; as long as I have known her, she has always been willing to assist those who are in need.
(A) intemperance (B) intolerance
(C) apprehension (D) diffidence
(E) frugality
2. Natural selection tends to eliminate genes that cause inherited diseases, acting most strongly against the most severe diseases; consequently, hereditary diseases that are ----- would be expected to be very -----, but, surprisingly, they are not.
(A) lethal..rare
(B) untreated..dangerous
(C) unusual..refractory
(D) new..perplexing
(E) widespread..acute
3. Unfortunately, his damaging attacks on the ramifications of the economic policy have been ----- by his wholehearted acceptance of that policy's underlying assumptions.
(A) supplemented (B) undermined
(C) wasted (D) diverted (E) redeemed
4. During the opera's most famous aria the tempo chosen by the orchestra's conductor seemed -----, without necessary relation to what had gone before.
(A) tedious (B) melodious (C) capricious
(D) compelling (E) cautious
5. In the machinelike world of classical physics, the human intellect appears -----, since the mechanical nature of classical physics does not ----- creative reasoning, the very ability that had made the formulation of classical principles possible.
(A) anomalous..allow for
(B) abstract..speak to
(C) anachronistic..deny
(D) enduring..value
(E) contradictory..exclude
6. During the 1960's assessments of the family shifted remarkably, from general endorsement of it as a worthwhile, stable institution to widespread ----- it as an oppressive and bankrupt one whose ----- was both imminent and welcome.
(A) flight from..restitution
(B) fascination with..corruption
(C) rejection of..vogue
(D) censure of..dissolution
(E) relinquishment of..ascent
7. Documenting science's ----- philosophy would be -----, since it is almost axiomatic that many philosophers use scientific concepts as the foundations for their speculations.
(A) distrust of..elementary
(B) influence on..superfluous
(C) reliance on..inappropriate
(D) dependence on..difficult
(E) differences from..impossible

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Great comic art is never otherwordly, it does not seek to mystify us, and it does not deny ambiguity by branding as evil whatever differs from good. Great comic artists assume that truth may bear all lights, and thus they seek to accentuate contradictions in social action, not gloss over or transcend them by appeals to extrasocial symbols of divine ends, cosmic purpose, or laws of nature. The moment of transcendence in great comic art is a social moment, born out of the conviction that we are human, even though we try to be gods. The comic community to which artists address themselves is a community of reasoning, loving, joyful, compassionate beings, who are willing to assume the human risks of acting rationally. Without invoking gods or demons, great comic art arouses courage in reason, courage which grows out of trust in what human beings can do as humans.

17. The passage suggests that great comic art can be characterized as optimistic about the ability of humans to

(A) rid themselves of pride
(B) transcend the human condition
(C) differentiate clearly between good and evil
(D) avoid social conflicts
(E) act rationally

18. It can be inferred from the passage that the author admires great comic artists primarily for their

(A) ability to understand the frequently subtle differences between good and evil
(B) ability to reconcile the contradictions in human behavior
(C) ability to distinguish between rational and irrational behavior
(D) insistence on confronting the truth about the human condition
(E) insistence on condemning human faults and weaknesses

19. Which of the following is the most accurate description of the organization of the passage?
- (A) A sequence of observations leading to a prediction
(B) A list of inferences drawn from facts stated at the beginning of the passage
(C) A series of assertions related to one general subject
(D) A statement of the major idea, followed by specific examples
(E) A succession of ideas moving from specific to general

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It has long been known that the rate of oxidative metabolism (the process that uses oxygen to convert food into energy) in any animal has a profound effect on its living patterns. The high metabolic rate of small animals, for example, gives them sustained power and activity per unit of weight, but at the cost of requiring constant consumption of food and water. Very large animals, with their relatively low metabolic rates, can survive well on a sporadic food supply, but can generate little metabolic energy per gram of body weight. If only oxidative metabolic rate is considered, therefore, one might assume that smaller, more active, animals could prey on larger ones, at least if they attacked in groups. Perhaps they could if it were not for anaerobic glycolysis, the great equalizer.

Anaerobic glycolysis is a process in which energy is produced, without oxygen, through the breakdown of muscle glycogen into lactic acid and adenosine triphosphate (ATP), the energy provider. The amount of energy that can be produced anaerobically is a function of the amount of glycogen present—in all vertebrates about 0.5 percent of their muscles' wet weight. Thus the anaerobic energy reserves of a vertebrate are proportional to the size of the animal. If, for example, some predators had attacked a 100-ton dinosaur, normally torpid, the dinosaur would have been able to generate almost instantaneously, via anaerobic glycolysis, the energy of 3,000 humans at maximum oxidative metabolic energy production. This explains how many large species have managed to compete with their more active neighbors: the compensation for a low oxidative metabolic rate is glycolysis.

There are limitations, however, to this compensation. The glycogen reserves of any animal are good, at most, for only about two minutes at maximum effort, after which only the normal oxidative metabolic source of energy remains. With the conclusion of a burst of activity, the lactic acid level is high in the body fluids, leaving the large animal vulnerable to attack until the acid is reconverted, via oxidative metabolism, by the liver into glucose, which is then sent (in part) back to the muscles for glycogen resynthesis. During this process the enormous energy debt that the animal has run up through anaerobic glycolysis must be repaid, a debt that is proportionally much greater for the larger vertebrates than for the smaller ones. Whereas the tiny shrew can replace in minutes the glycogen used for maximum effort, for example, the gigantic dinosaur would have required more than three weeks. It might seem that this interminably long recovery time in a large vertebrate would prove a grave disadvantage for survival. Fortunately, muscle glycogen is used only when needed and even then only in whatever quantity is necessary. Only in times of panic or during mortal combat would the entire reserves be consumed.

20. The primary purpose of the passage is to
 - (A) refute a misconception about anaerobic glycolysis
 - (B) introduce a new hypothesis about anaerobic glycolysis
 - (C) describe the limitations of anaerobic glycolysis
 - (D) analyze the chemistry of anaerobic glycolysis and its similarity to oxidative metabolism
 - (E) explain anaerobic glycolysis and its effects on animal survival
21. According to the author, glycogen is crucial to the process of anaerobic glycolysis because glycogen
 - (A) increases the organism's need for ATP
 - (B) reduces the amount of ATP in the tissues
 - (C) is an inhibitor of the oxidative metabolic production of ATP
 - (D) ensures that the synthesis of ATP will occur speedily
 - (E) is the material from which ATP is derived
22. According to the author, a major limitation of anaerobic glycolysis is that it can
 - (A) produce in large animals more lactic acid than the liver can safely reconvert
 - (B) necessitate a dangerously long recovery period in large animals
 - (C) produce energy more slowly than it can be used by large animals
 - (D) consume all of the available glycogen regardless of need
 - (E) reduce significantly the rate at which energy is produced by oxidative metabolism

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23. The passage suggests that the total anaerobic energy reserves of a vertebrate are proportional to the vertebrate's size because
- (A) larger vertebrates conserve more energy than smaller vertebrates
 - (B) larger vertebrates use less oxygen per unit weight than smaller vertebrates
 - (C) the ability of a vertebrate to consume food is a function of its size
 - (D) the amount of muscle tissue in a vertebrate is directly related to its size
 - (E) the size of a vertebrate is proportional to the quantity of energy it can utilize
24. The author suggests that, on the basis of energy production, a 100-ton dinosaur would have been markedly vulnerable to which of the following?
- I. Repeated attacks by a single smaller, more active adversary
 - II. Sustained attack by numerous smaller, more active adversaries
 - III. An attack by an individual adversary of similar size
- (A) II only
 - (B) I and II only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III
25. It can be inferred from the passage that the time required to replenish muscle glycogen following anaerobic glycolysis is determined by which of the following factors?
- I. Rate of oxidative metabolism
 - II. Quantity of lactic acid in the body fluids
 - III. Percentage of glucose that is returned to the muscles
- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) I and III only
 - (E) I, II, and III
26. The author is most probably addressing which of the following audiences?
- (A) College students in an introductory course on animal physiology
 - (B) Historians of science investigating the discovery of anaerobic glycolysis
 - (C) Graduate students with specialized training in comparative anatomy
 - (D) Zoologists interested in prehistoric animals
 - (E) Biochemists doing research on oxidative metabolism
27. Which of the following best states the central idea of the passage?
- (A) The disadvantage of a low oxidative metabolic rate in large animals can be offset by their ability to convert substantial amounts of glycogen into energy.
 - (B) The most significant problem facing animals that have used anaerobic glycolysis for energy is the resynthesis of its by-product, glucose, into glycogen.
 - (C) The benefits to animals of anaerobic glycolysis are offset by the profound costs that must be paid.
 - (D) The major factor ensuring that a large animal will triumph over a smaller animal is the large animal's ability to produce energy via anaerobic glycolysis.
 - (E) The great differences that exist in metabolic rates between species of small animals and species of large animals can have important effects on the patterns of their activities.

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SECTION 2

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The spellings of many Old English words have been ----- in the living language, although their pronunciations have changed.
(A) preserved (B) shortened
(C) preempted (D) revised (E) improved
2. The sheer diversity of tropical plants represents a seemingly ----- source of raw materials, of which only a few have been utilized.
(A) exploited (B) quantifiable
(C) controversial (D) inexhaustible
(E) remarkable
3. For centuries animals have been used as ----- for people in experiments to assess the effects of therapeutic and other agents that might later be used in humans.
(A) benefactors (B) companions
(C) examples (D) precedents
(E) surrogates
4. Social tensions among adult factions can be ----- by politics, but adolescents and children have no such ----- for resolving their conflict with the exclusive world of adults.
(A) intensified..attitude
(B) complicated..relief
(C) frustrated..justification
(D) adjusted..mechanism
(E) revealed..opportunity
5. The state is a network of exchanged benefits and beliefs, ----- between rulers and citizens based on those laws and procedures that are ----- to the maintenance of community.
(A) a compromise..inimical
(B) an interdependence..subsidiary
(C) a counterpoint..incidental
(D) an equivalence..prerequisite
(E) a reciprocity..conducive
6. Far from viewing Jefferson as a skeptical but enlightened intellectual, historians of the 1960's portrayed him as ----- thinker, eager to fill the young with his political orthodoxy while censoring ideas he did not like.
(A) an adventurous (B) a doctrinaire
(C) an eclectic (D) a judicious
(E) a cynical
7. To have true disciples, a thinker must not be too -----: any effective intellectual leader depends on the ability of other people to ----- thought processes that did not originate with them.
(A) popular..dismiss
(B) methodical..interpret
(C) idiosyncratic..reenact
(D) self-confident..revitalize
(E) pragmatic..discourage

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The dark regions in the starry night sky are not pockets in the universe that are devoid of stars as had long been thought. Rather, they are dark because of interstellar dust that hides the stars behind it. Although its visual effect is so pronounced, dust is only a minor constituent of the material, extremely low in density, that lies between the stars. Dust accounts for about one percent of the total mass of interstellar matter. The rest is hydrogen and helium gas, with small amounts of other elements. The interstellar material, rather like terrestrial clouds, comes in all shapes and sizes. The average density of interstellar material in the vicinity of our Sun is 1,000 to 10,000 times less than the best terrestrial laboratory vacuum. It is only because of the enormous interstellar distances that so little material per unit of volume becomes so significant. Optical astronomy is most directly affected, for although interstellar gas is perfectly transparent, the dust is not.

17. According to the passage, which of the following is a direct perceptual consequence of interstellar dust?

- (A) Some stars are rendered invisible to observers on Earth.
- (B) Many visible stars are made to seem brighter than they really are.
- (C) The presence of hydrogen and helium gas is revealed.
- (D) The night sky appears dusty at all times to observers on Earth.
- (E) The dust is conspicuously visible against a background of bright stars.

- 18. It can be inferred from the passage that the density of interstellar material is
 - (A) higher where distances between the stars are shorter
 - (B) equal to that of interstellar dust
 - (C) unusually low in the vicinity of our Sun
 - (D) independent of the incidence of gaseous components
 - (E) not homogeneous throughout interstellar space
- 19. It can be inferred from the passage that it is because space is so vast that
 - (A) little of the interstellar material in it seems substantial
 - (B) normal units of volume seem futile for measurements of density
 - (C) stars can be far enough from Earth to be obscured even by very sparsely distributed matter
 - (D) interstellar gases can, for all practical purposes, be regarded as transparent
 - (E) optical astronomy would be of little use even if no interstellar dust existed

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- In his 1976 study of slavery in the United States, Herbert Gutman, like Fogel, Engerman, and Genovese, has rightly stressed the slaves' achievements. But unlike these historians, Gutman gives plantation owners little credit for these achievements. Rather, Gutman argues that one must look to the Black family and the slaves' extended kinship system to understand how crucial achievements, such as the maintenance of a cultural heritage and the development of a communal consciousness, were possible. His findings compel attention.
- Gutman recreates the family and extended kinship structure mainly through an ingenious use of what any historian should draw upon, quantifiable data, derived in this case mostly from plantation birth registers. He also uses accounts of ex-slaves to probe the human reality behind his statistics. These sources indicate that the two-parent household predominated in slave quarters just as it did among freed slaves after emancipation. Although Gutman admits that forced separation by sale was frequent, he shows that the slaves' preference, revealed most clearly on plantations where sale was infrequent, was very much for stable monogamy. In less conclusive fashion Fogel, Engerman, and Genovese had already indicated the predominance of two-parent households; however, only Gutman emphasizes the preference for stable monogamy and points out what stable monogamy meant for the slaves' cultural heritage. Gutman argues convincingly that the stability of the Black family encouraged the transmission of—and so was crucial in sustaining—the Black heritage of folklore, music, and religious expression from one generation to another, a heritage that slaves were continually fashioning out of their African and American experiences.
- Gutman's examination of other facets of kinship also produces important findings. Gutman discovers that cousins rarely married, an exogamous tendency that contrasted sharply with the endogamy practiced by the plantation owners. This preference for exogamy, Gutman suggests, may have derived from West African rules governing marriage, which, though they differed from one tribal group to another, all involved some kind of prohibition against unions with close kin. This taboo against cousins' marrying is important, argues Gutman, because it is one of many indications of a strong awareness among slaves of an extended kinship network. The fact that distantly related kin would care for children separated from their families also suggests this awareness. When blood relationships were few, as in newly created plantations in the Southwest, "fictive" kinship

arrangements took their place until a new pattern of consanguinity developed. Gutman presents convincing evidence that this extended kinship structure—which he believes developed by the mid-to-late eighteenth century—provided the foundations for the strong communal consciousness that existed among slaves.

In sum, Gutman's study is significant because it offers a closely reasoned and original explanation of some of the slaves' achievements, one that correctly emphasizes the resources that slaves themselves possessed.

20. According to the passage, Fogel, Engerman, Genovese, and Gutman have all done which of the following?
- Discounted the influence of plantation owners on slaves' achievements.
 - Emphasized the achievements of slaves.
 - Pointed out the prevalence of the two-parent household among slaves.
 - Showed the connection between stable monogamy and slaves' cultural heritage.
- (A) I and II only
 (B) I and IV only
 (C) II and III only
 (D) I, III, and IV only
 (E) II, III, and IV only
21. With which of the following statements regarding the resources that historians ought to use would the author of the passage be most likely to agree?
- (A) Historians ought to make use of written rather than oral accounts.
 (B) Historians should rely primarily on birth registers.
 (C) Historians should rely exclusively on data that can be quantified.
 (D) Historians ought to make use of data that can be quantified.
 (E) Historians ought to draw on earlier historical research but they should do so in order to refute it.

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22. Which of the following statements about the formation of the Black heritage of folklore, music, and religious expression is best supported by the information presented in the passage?
- (A) The heritage was formed primarily out of the experiences of those slaves who attempted to preserve the stability of their families.
- (B) The heritage was not formed out of the experiences of those slaves who married their cousins.
- (C) The heritage was formed more out of the African than out of the American experiences of slaves.
- (D) The heritage was not formed out of the experiences of only a single generation of slaves.
- (E) The heritage was formed primarily out of slaves' experiences of interdependence on newly created plantations in the Southwest.
23. It can be inferred from the passage that, of the following, the most probable reason why a historian of slavery might be interested in studying the type of plantations mentioned in line 25 is that this type would
- (A) give the historian access to the most complete plantation birth registers
- (B) permit the historian to observe the kinship patterns that had been most popular among West African tribes
- (C) provide the historian with evidence concerning the preference of freed slaves for stable monogamy
- (D) furnish the historian with the opportunity to discover the kind of marital commitment that slaves themselves chose to have
- (E) allow the historian to examine the influence of slaves' preferences on the actions of plantation owners
24. According to the passage, all of the following are true of the West African rules governing marriage mentioned in lines 46-50 EXCEPT:
- (A) The rules were derived from rules governing fictive kinship arrangements.
- (B) The rules forbade marriages between close kin.
- (C) The rules are mentioned in Herbert Gutman's study.
- (D) The rules were not uniform in all respects from one West African tribe to another.
- (E) The rules have been considered to be a possible source of slaves' marriage preferences.
25. Which of the following statements concerning the marriage practices of plantation owners during the period of Black slavery in the United States can most logically be inferred from the information in the passage?
- (A) These practices began to alter sometime around the mid-eighteenth century.
- (B) These practices varied markedly from one region of the country to another.
- (C) Plantation owners usually based their choice of marriage partners on economic considerations.
- (D) Plantation owners often married earlier than slaves.
- (E) Plantation owners often married their cousins.
26. Which of the following best describes the organization of the passage?
- (A) The author compares and contrasts the work of several historians and then discusses areas for possible new research.
- (B) The author presents his thesis, draws on the work of several historians for evidence to support his thesis, and concludes by reiterating his thesis.
- (C) The author describes some features of a historical study and then uses those features to put forth his own argument.
- (D) The author summarizes a historical study, examines two main arguments from the study, and then shows how the arguments are potentially in conflict with one another.
- (E) The author presents the general argument of a historical study, describes the study in more detail, and concludes with a brief judgment of the study's value.
27. Which of the following is the most appropriate title for the passage, based on its content?
- (A) The Influence of Herbert Gutman on Historians of Slavery in the United States
- (B) Gutman's Explanation of How Slaves Could Maintain a Cultural Heritage and Develop a Communal Consciousness
- (C) Slavery in the United States: New Controversy About an Old Subject
- (D) The Black Heritage of Folklore, Music, and Religious Expression: Its Growing Influence
- (E) The Black Family and Extended Kinship Structure: How They Were Important for the Freed Slave

4. Japanese factory workers are guaranteed lifetime jobs, bonuses paid on the basis of productivity and corporate profits, and a wage rate that is not attached to a particular job. Paradoxically, these guarantees do not discourage factory owners from introducing labor-saving machinery. Such innovations are to the factory owners' advantage despite the fact that the owners must protect the wages of their workers.
- Which of the following, if true, logically explains why the introduction of labor-saving machinery is advantageous to factory owners?
- (A) Before a Japanese factory worker is hired, he or she must present a record of his or her previous productivity.
(B) Labor-saving machinery increases productivity, thus yielding profits that more than cover the cost of retraining workers for other jobs.
(C) The purchase and maintenance of new machinery adds significantly to the final cost of the goods produced.
(D) Factory workers demand a change of procedure in the routine tasks they perform.
(E) Limited competition exists among Japanese factories for consumer markets.
5. Only a member of the Regionalist party would oppose the bill for a new recycling law that would protect the environment from industrial interests. Ellen cannot be a member of the Regionalist party because she supports the bill.
- Which of the following statements points out why the conclusion above is invalidly drawn?
- (A) Regionalist party members have organized to oppose industrial interests on several other issues.
(B) Industrial interests need not oppose the protection of the environment.
(C) Past attempts to protect the environment through recycling laws have failed.
(D) It is possible that some Regionalist party members may not oppose the bill for a new recycling law.
(E) Ellen has attended programs and distributed literature prepared by the Regionalist party.
6. Roberta was born in 1967, and so in 1976 she was nine years old. It is clear from this example that the last two digits of a person's birth year will be the same as the last two digits of the year of that person's ninth birthday, except that the position of the digits will be reversed.
- Which of the following is the best criticism of the assertions made above?
- (A) The generalization is valid only for those birth years that do not end in two zeroes.
(B) The example does not exhibit the same principle as is expressed in the generalization based on it.
(C) The generalization is valid only for those birth years in which the last digit is one greater than the second-to-last digit.
(D) The example cannot be shown to be correct unless the truth of the generalization is already presupposed.
(E) The generalization is valid only for those birth years in which the last digit is greater than five.

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23. A small dose of widely used tranquilizer allows people to lie during lie detector tests without being discovered. The stress responses that lie detector tests measure can be inhibited by the drug without noticeable side effects. One of the implications of this fact is that the drug can also be effective in reducing stress in everyday situations.

An assumption of the passage is that

- (A) tranquilizers are always an effective treatment for stress
- (B) the inhibition of stress responses increases subjective stress
- (C) stress as measured by a lie detector is similar to everyday stress
- (D) persons who lie during a lie detector test always display signs of stress
- (E) it is not desirable to reduce stress in everyday situations

24. The attitude that it is all right to do what harms no one but oneself is usually accompanied by a disregard for the actual interdependence of people. Destroying one's own life or health means not being available to help family members or the community; it means, instead, absorbing the limited resources of the community for food, health services, and education without contributing fully to the community.

Which of the following, if true, most strongly supports the view expressed above?

- (A) The cost of avoidable accidents and illnesses raises health insurance rates for everyone.
- (B) Harm to one person can result in an indirect benefit, such as the availability of work in health-related fields, to others.
- (C) Life would be dull if it were necessary to abstain from all of the minor pleasures that entail some risk of harm to a person who indulges in them.
- (D) The contribution a person makes to the community cannot be measured by that person's degree of health.
- (E) The primary damage caused by the consumption of alcohol, tobacco, and unauthorized drugs is done to the person who uses those substances.

25. Superficially, college graduates in 1982 resemble college graduates of 1964; they are fairly conservative, well dressed, and interested in tradition; they respect their parents. But there is a deep-seated difference: a majority of the members of the class of 1982 who were surveyed in their freshman year stated that making a good income was an important reason for their decision to go to college.

The statements in the passage above, if true, best support which of the following conclusions?

- (A) The concerns of college graduates of 1964 were superficial compared to the financial worries of college graduates of 1982.
- (B) Fewer than half the students of the class of 1964 declared as freshmen that they entered college in order to increase their earning potential.
- (C) Educational background did not play as significant a part in determining income in 1964 as it does in 1982.
- (D) A majority of the members of the class of 1964 revised their reasons for attending college between their freshman year and college graduation.
- (E) College graduates of 1964 were actually less conservative than college graduates of 1982.

6. Experienced pilots often have more trouble than novice pilots in learning to fly the newly developed ultralight airplanes. Being accustomed to heavier aircraft, experienced pilots, when flying ultralight craft, seem not to respect the wind as much as they should.

The passage implies that the heavier aircraft mentioned above are:

- (A) harder to land than ultralight aircraft
 - (B) not as popular with pilots as ultralight aircraft
 - (C) not as safe as ultralight aircraft
 - (D) more fuel-efficient than ultralight aircraft
 - (E) easier to handle in wind than ultralight aircraft
7. One of the truisms of the advertising industry is that it is rarely necessary to say something of substance in an advertisement in order to boost sales. Instead, one only needs to attract the potential customer's attention; memory does the rest, for it is more important for sales that people know of a product than that they know something about it.

Which of the following is implied by the passage above?

- (A) People can remember a product without having much information about it.
- (B) Advertisements, in their own way, function to improve people's memories.
- (C) Attracting a potential customer's attention is a simple matter.
- (D) The advertising industry knows little of substance about the products it promotes.
- (E) Advertisements seldom tell the truth about a product.

8. Spiritualism, the doctrine that it is possible to communicate with the spirits of the deceased through specially talented persons called mediums, is fraudulent. As long ago as the 1870's, Professor Edwin Lankester showed that the purported "spirit writing" of the famed medium Henry Slade was present on a slate before the "spirits" were supposed to have begun writing on it. This example demonstrates that the doctrine of spiritualism is worthless.

If the example above is correctly reported, which of the following is the best argument against the conclusion drawn above?

- (A) There cannot be proof that the spirits of the deceased do not exist.
- (B) The conclusion depends on a historical report, and such reports of past events do not recount all of the circumstances.
- (C) The cited evidence presupposes what is to be proved.
- (D) A single instance of fraud cannot show that the doctrine is false in general.
- (E) The correctness of the report depends on the veracity of antispiritualists, who may be expected to be biased.

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23. Some would have you believe that the economic problems of Western Europe have been caused by the Organization of Petroleum Exporting Countries (OPEC) oil cartel. This is nonsense. After all, Great Britain is not dependent on OPEC oil and yet Great Britain suffers from the same economic problems that afflict France and West Germany.

- The author's point is made primarily by .
- (A) offering Great Britain as a counterexample
 - (B) analyzing the economic difficulties of France and West Germany
 - (C) pointing out a misconception in reasoning
 - (D) proposing an alternative explanation
 - (E) drawing an analogy between France and West Germany

24. The once widely held perception of intellectuals as the clarifiers of fundamental moral issues is no longer valid today. Intellectuals no longer act as advocates for oppressed groups. Instead of applying their insights and analyses to the problems of these groups, they leave the debate to the politicians.

- The logical structure of the passage above depends upon the author's closely linking the clarification of fundamental moral issues with
- (A) intellectualism
 - (B) advocacy on behalf of oppressed groups
 - (C) insight and analysis
 - (D) debate on contemporary practical issues
 - (E) the role of politicians

25. The state with the greatest fraction of its population in urban areas, if the urban areas are considered to include the suburbs, is California. The West is highly urbanized, but California is exceptional even in that region: 91 percent of its population lives in urban areas. Geographically, however, California is rural: 96 percent of its land is outside urban areas.

If all of the statements above are true, which of the following must also be true?

- (A) No state has a smaller fraction of its population in rural areas than California has.
- (B) The current rate of population growth in California's urban areas exceeds the current rate of population growth in California's rural areas.
- (C) In California 96 percent of the population lives on 9 percent of the land.
- (D) No state has a smaller area devoted to urban settlement than California has.
- (E) California's population density is among the highest of all states in the United States.

TEST 8

SECTION 1

Time — 30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Even though formidable winters are the norm in the Dakotas, many people were unprepared for the ----- of the blizzard of 1888.
(A) inevitability (B) ferocity (C) importance
(D) probability (E) mildness
2. As the first streamlined car, the Airflow represented a ----- in automotive development, and although its sales were -----, it had an immense influence on automobile design.
(A) milestone..disappointing
(B) breakthrough..significant
(C) regression..unimportant
(D) misjudgment..calculable
(E) revolution..tolerable
3. While nurturing parents can compensate for adversity, cold or inconsistent parents may ----- it.
(A) exacerbate (B) neutralize (C) eradicate
(D) ameliorate (E) relieve
4. The architects of New York's early skyscrapers, hinting here at a twelfth-century cathedral, there at a fifteenth-century palace, sought to legitimize the city's social strivings by ----- a history the city did not truly -----.
(A) revealing..deserve
(B) displaying..desire
(C) evoking..possess
(D) preserving..experience
(E) flouting..believe
5. Actual events in the history of life on Earth are accidental in that any outcome embodies just one ----- among millions; yet each outcome can be ----- interpreted.
(A) coincidence..randomly
(B) relationship..predictably
(C) fact..readily
(D) happening..uniquely
(E) possibility..rationally
6. Although some of her fellow scientists ----- the unorthodox laboratory methodology that others found innovative, unanimous praise greeted her experimental results: at once pioneering and -----.
(A) ignored..untrustworthy
(B) complimented..foreseeable
(C) welcomed..mundane
(D) decried..unexceptionable
(E) attacked..inconclusive
7. Early critics of Emily Dickinson's poetry mistook for simplemindedness the surface of artlessness that in fact she constructed with such -----.
(A) astonishment (B) vexation (C) allusion
(D) innocence (E) cunning

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

*Line
(5)*
Because of its accuracy in outlining the Earth's subsurface, the seismic-reflection method remains the most important tool in the search for petroleum reserves. In field practice, a subsurface is mapped by arranging a series of wave-train sources, such as small dynamite explosions, in a grid pattern. As each source is activated, it generates a wave train that moves downward at a speed determined uniquely by the rock's elastic characteristics. As rock interfaces are crossed, the elastic characteristics encountered generally change abruptly, which causes part of the energy to be reflected back to the surface, where it is recorded by seismic instruments. The seismic records must be processed to correct for positional differences between the source and the receiver, for unrelated wave trains, and for multiple reflections from the rock interfaces. Then the data acquired at each of the specific source locations are combined to generate a physical profile of the subsurface, which can eventually be used to select targets for drilling.

*(10)
(15)*

17. The passage is primarily concerned with

- (A) describing an important technique
- (B) discussing a new method
- (C) investigating a controversial procedure
- (D) announcing a significant discovery
- (E) promoting a novel application

18. According to the passage, in the seismic-reflection method all of the following have a significant effect on the signal detected by the seismic instruments EXCEPT the

- (A) presence of unrelated wave trains
- (B) placement of the seismic instruments
- (C) number of sources in the grid pattern
- (D) nature of the reflectivity of the rock interfaces
- (E) properties of rocks through which the wave train has traveled

19. It can be inferred from the passage that the seismic-reflection method would be likely to yield an inaccurate physical profile of the subsurface in which of the following circumstances?

- (A) If the speed at which the wave train moved downward changed
- (B) If the receiver were not positioned directly at the wave-train source
- (C) If the rock on one side of a rock interface had similar elastic characteristics to those of the rock on the other side
- (D) If the seismic records obtained for the different sources in a grid were highly similar to each other
- (E) If there were no petroleum deposits beneath the area defined by the grid of wave-train sources

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

- (A) A method is criticized, and an alternative is suggested.
- (B) An illustration is examined, and some errors are exposed.
- (C) An assertion is made, and a procedure is outlined.
- (D) A series of examples is presented, and a conclusion is drawn.
- (E) A hypothesis is advanced, and supporting evidence is supplied.

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Line
(5) Modern archaeological finds can still contribute much to the study of ancient literature. For example, forty years ago a survey of the early Greek dramatist Aeschylus' plays would have started with *The Suppliant Women*. Many factors internal to the play, but perhaps most especially the prominence of the chorus (which in this play has the main role), led scholars to consider it one of Aeschylus' earlier works. The consensus was that here was a drama truly reflecting an early stage in the evolution of tragedy out of choral lyric. The play was dated as early as the 490's B.C., in any event, well before Aeschylus' play *The Persians* of 472 B.C. Then, in 1952, a fragment of papyrus found at Oxyrhynchus was published stating the official circumstances and results of a dramatic contest. The fragment announced that Aeschylus won first prize with his Danaid tetralogy, of which *The Suppliant Women* is the opening play, and defeated Sophocles in the process. Sophocles did not compete in any dramatic contest before 468 B.C., when he won his first victory. Hence, (10) except by special pleading (e.g., that the tetralogy was composed early in Aeschylus' career but not produced until the 460's B.C.), the Danaid tetralogy must be put after 468 B.C. In addition, a few letters in the fragment suggest the name Archedemides, archon in 463 B.C., thus perhaps tying the plays to that precise date, almost exactly halfway between Aeschylus' *Seven Against Thebes* of 467 B.C. and his *Oresteia*.

(15) The implication of the papyrus administered a severe shock to the vast majority of classical scholars, who had confidently asserted that not only the role of the chorus but also language, metrics, and characterization all pointed to an early date. The discovery has resulted in no less than a total reevaluation of every chronological criterion that has been applied to or derived from (20) Aeschylus' plays. The activity has been brisk, and a new creed has now spread. The prominence of the chorus in *The Suppliant Women* now is seen not as a sign of primitivism but as analogous to the massive choral songs of the *Oresteia*. Statistics have been formulated, or reformulated, to show that stylistically *The Suppliant Women* does actually occupy a position after *The Persians* and *Seven Against Thebes*, which now become the "primitive" plays, and before the *Oresteia*. While the new doctrine seems almost certainly correct, the one papyrus (25) fragment raises the specter that another may be unearthed, showing, for instance, that it was a posthumous production of the Danaid tetralogy which bested Sophocles, and throwing the date once more into utter confusion. This is unlikely to happen, but it warns us (30) that perhaps the most salutary feature of the papyrus scrap is its message of the extreme difficulty of classifying and categorizing rigidly the development of a creative artist.

- (35) 21. The author of the passage focuses primarily on
(A) discussing a series of modern archaeological finds and their impact on the study of Greek literature
(B) recounting the effect of one archaeological find on modern ideas concerning a particular author's work
(C) giving a definitive and coherent account of the chronology of a particular author's work
(D) illustrating the many varieties of difficulties involved in establishing facts concerning ancient literature
(E) determining the exact value of archaeological finds in relation to the history of ancient literature
- (40) 22. With respect to the study of ancient literature, which of the following statements best expresses the author's main point concerning modern archaeological finds?
(A) They can profoundly alter accepted views of ancient literary works, and can encourage flexibility in the way scholars look at the creative development of any artist.
(B) They can be severely shocking and can have a revivifying effect on the study of ancient literature, which has recently suffered from a lack of interest on the part of scholars.
(C) They can raise more questions than they answer and can be unreliable sources of information.
(D) They generally confirm scholars' ideas about ancient literary works and allow them to dispense with inferences drawn from the works' internal structure.
(E) They often undermine scholarly consensus in certain areas and create utter confusion concerning an author's work.

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23. According to the passage, in the absence of definite knowledge concerning the dates of composition of ancient literary works, literary historians do which of the following when trying to establish the chronology of an author's work?
- (A) Make assumptions about a single work's date of composition if such assumptions would not seriously affect interpretations of other works by the same author.
- (B) Draw inferences concerning the date of a work's composition based on evidence internal to that work and on the author's other works.
- (C) Ignore the date of a work's composition which is supplied by archaeological research when literary factors internal to the work contradict that date.
- (D) Refrain from speculation concerning a work's date of composition unless archaeological finds produce information concerning it.
- (E) Estimate the date of a work's composition without attempting to relate it to the author's development as an artist.
24. It can be inferred from the passage that which of the following plays or groups of plays is considered the latest in the date of its composition?
- (A) *The Persians* (B) The Danaid tetralogy
(C) The *Oresteia* (D) *Seven Against Thebes*
(E) *The Suppliant Women*
25. With which of the following statements regarding the chronological criteria mentioned in lines 33–34 would the author be most likely to agree?
- (A) Such criteria, whether applied to or derived from the plays, should only be used to confirm already existing knowledge.
- (B) Such criteria, although derived from reliable external and internal evidence, should be changed continually to avoid rigidity in thinking.
- (C) Such criteria, based on statistical analysis, are inherently more reliable than those of forty years ago.
- (D) Such criteria, even when unsupported by external evidence, can resolve most questions.
- (E) Such criteria, based on often ambiguous internal evidence, can lead to erroneous reconstructions of the chronology of an author's work.
26. The author's attitude toward the "activity" mentioned in line 35 and its consequences can best be described as one of
- (A) amused tolerance (B) mocking envy
(C) grave doubt (D) angry disapproval
(E) unrestrained enthusiasm
27. The allusion to the hypothetical papyrus fragment in lines 45–49 does which of the following?
- (A) Supports an argument concerning the date of *The Suppliant Women*.
- (B) Refutes the views of the majority of scholars concerning the Oxyrhynchus papyrus find.
- (C) Predicts the future results of archaeological research proposed in the passage.
- (D) Undermines the validity of the currently accepted chronology of Aeschylus' works.
- (E) Qualifies the author's agreement with the "new creed" developed since the Oxyrhynchus papyrus find.

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7. Grammarians have for years condemned as ungrammatical the English phrase “between you and I,” insisting that the correct phrasing is “between you and me,” with the objective case after a preposition. Such condemnations, however, are obviously unfounded, because Shakespeare himself, in *The Merchant of Venice*, wrote, “All debts are cleared between you and I.”
- Which of the following, if true, most seriously weakens the argument above?
- (A) In his plays, Shakespeare intentionally had some of his characters use phrases he considered ungrammatical.
- (B) The phrase “between you and I” appears infrequently in Shakespeare’s writings.
- (C) The more modern an English word or phrase, the less likely that modern grammarians will consider it acceptable for formal usage.
- (D) Many modern speakers of English sometimes say “between you and I” and sometimes say “between you and me.”
- (E) Most native speakers of English who choose to say “between you and I” do so because they know that Shakespeare used that phrase.
8. Around 1850 there were about 800 farms in Otsego County. By the 1950’s the number of farms had dropped to around 400. By 1988 there were only 81 farms in operation. Therefore, the amount of land in the county that is devoted to farming has dropped by about 90 percent in the past 140 years.
- A major flaw in the argument above is that it
- (A) counts the number of farms only approximately
- (B) fails to say whether the use now being made of the land previously devoted to farming is income-producing
- (C) ignores the possibility that the average size of farms has changed
- (D) gives data for only 3 of the past 140 years
- (E) does not take into account the type of product or crop each farm yields
9. Senator: Jones is highly qualified for appointment as a judge, as evidenced by Jones’s receiving a unanimous vote of “qualified” on the formal rating scale used by the Lawyers’ Committee. That committee advises the Senate on judicial appointments.
- Which of the following, if true, is the best reason for dismissing the senator’s claim that Jones is highly qualified?
- (A) Several members of the Lawyers’ Committee are not themselves qualified for judicial appointments.
- (B) The Lawyers’ Committee does not advise the Senate on all judicial appointments.
- (C) The Lawyers’ Committee gives a unanimous vote of “qualified” only to those candidates for judicial appointments who meet the committee’s stringent standards for appropriate prior experience and ethical conduct.
- (D) The Lawyers’ Committee gives a unanimous vote of either “highly qualified” or “very highly qualified” to 95 percent of all candidates for judicial appointments.
- (E) Jones, like most lawyers, is a member of the professional organization that originally suggested the establishment of the Lawyers’ Committee.

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24. For some women the cost of giving birth can be an unexpectedly large burden. The average normal birth now costs \$3,200, and a birth with complications can cost thousands of dollars more. Of women in the primary childbearing age range of eighteen to twenty-four, who account for about 40 percent of all births in this country annually, more than 25 percent have no health-care insurance to pay maternity costs.

If the statements above are true, which of the following must also be true?

- (A) Each year, about 75 percent of all births in this country are to women who have health-care coverage of maternity costs.
- (B) Each year, about 60 percent of all births in this country are to women who are younger than eighteen or older than twenty-four.
- (C) For an average birth, health-care insurance pays about 75 percent of \$3,200.
- (D) In this country, about 75 percent of the women who do not have health-care coverage of maternity costs are younger than eighteen or older than twenty-four.
- (E) In this country, nearly 75 percent of the women in the primary childbearing age range give birth with no complications.

25. One theory of the Moon's origin is that the Earth, early in its development, was a rapidly rotating body of molten rock in which most of the iron had settled to the core; some of this fluid was cast off from the surface of the spinning mass and later solidified to form the Moon.

Which of the following conclusions can best be supported by the theory above of the Moon's origin, if that theory is correct?

- (A) The Moon is the only sizable heavenly body in orbit around the Earth.
- (B) The Moon has proportionally less iron at its core than the Earth does.
- (C) The surface of the Moon solidified after the surface of the Earth did.
- (D) Most of the fluid cast off from the Earth was dispersed into outer space.
- (E) The Moon, like the Earth, has a solid surface and a molten core.

SECTION 5

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. This project is the first step in a long-range plan of research whose ----- goal, still many years off, is the creation of a new prototype.
(A) cooperative (B) reasoned (C) original
(D) ultimate (E) intentional
2. Eric was frustrated because, although he was adept at making lies sound -----, when telling the truth, he ----- the power to make himself believed.
(A) plausible..lacked (B) convincing..held
(C) honest..found (D) true..acquired
(E) logical..claimed
3. In certain forms of discourse such as the parable, the central point of a message can be effectively communicated even though this point is not -----.
(A) preferred (B) explicit (C) inferable
(D) discerned (E) illustrated
4. Always circumspect, she was reluctant to make judgments, but once arriving at a conclusion, she was ----- in its defense.
(A) nonplussed (B) obsequious
(C) intransigent (D) deferential
(E) negligent
5. The techniques now available to livestock breeders will continue to be -----, but will probably be ----- by new ones under development.
(A) fruitful..reversed
(B) refined..upgraded
(C) inconvenient..reassessed
(D) used..supplemented
(E) harmless..improved
6. Any population increase beyond a certain level necessitates greater ----- vegetable foods; thus, the ability of a society to choose meat over cereals always arises, in part, from ----- the number of people.
(A) reliance on..replenishing
(B) production of..estimating
(C) spending on..concealing
(D) recourse to..limiting
(E) attention to..varying
7. Ethologists are convinced that many animals survive through learning—but learning that is ----- their genetic programming, learning as thoroughly ----- as the most instinctive of behavioral responses.
(A) superseded by..primitive
(B) compatible with..transient
(C) complementary to..familiar
(D) derived from..inventive
(E) dictated by..stereotyped

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line
(5)

(10)

(15)

Scholars often fail to see that music played an important role in the preservation of African culture in the United States. They correctly note that slavery stripped some cultural elements from Black people—their political and economic systems—but they underestimate the significance of music in sustaining other African cultural values. African music, unlike the music of some other cultures, was based on a total vision of life in which music was not an isolated social domain. In African culture music was pervasive, serving not only religion, but all phases of life, including birth, death, work, and play. The methods that a community devises to perpetuate itself come into being to preserve aspects of the cultural legacy that that community perceives as essential. Music, like art in general, was so inextricably a part of African culture that it became a crucial means of preserving the culture during and after the dislocations of slavery.

17. The primary purpose of the passage is to

- (A) analyze the impact that slavery had on African political and economic systems
- (B) review the attempt of recent scholarship to study the influence of African music on other music
- (C) correct the failure of some scholars to appreciate the significance of music in African culture
- (D) survey the ways by which people attempt to preserve their culture against the effects of oppression
- (E) compare the relative importance of music with that of other art forms in culture

18. In line 9, the phrase “isolated social domain” refers to

- (A) African music in relation to contemporary culture as a whole
- (B) music as it may be perceived in non-African cultures
- (C) a feature of African music that aided in transmitting African cultural values
- (D) an aspect of the African cultural legacy
- (E) the influence of music on contemporary culture

19. Which of the following statements concerning the function of African music can be inferred from the passage?

- (A) It preserved cultural values because it was thoroughly integrated into the lives of the people.
- (B) It was more important in the development of African religious life than in other areas of culture.
- (C) It was developed in response to the loss of political and economic systems.
- (D) Its pervasiveness in African culture hindered its effectiveness in minimizing the impact of slavery.
- (E) Its isolation from the economic domains of life enabled it to survive the destructive impact of slavery.

20. According to the author, scholars would err in drawing which of the following conclusions?

- I. Slavery stripped the slaves of their political and economic systems.
 - II. African music was similar to all other traditions of music in that it originated in a total vision of life.
 - III. Music was a crucial part of the African cultural legacy.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III

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- Line
(5)* Traditionally, pollination by wind has been viewed as a reproductive process marked by random events in which the vagaries of the wind are compensated for by the generation of vast quantities of pollen, so that the ultimate production of new seeds is assured at the expense of producing much more pollen than is actually used. Because the potential hazards pollen grains are subject to as they are transported over long distances are enormous, wind-pollinated plants have, in the view above, compensated for the ensuing loss of pollen through happenstance by virtue of producing an amount of pollen that is one to three orders of magnitude greater than the amount produced by species pollinated by insects.
- (10)* However, a number of features that are characteristic of wind-pollinated plants reduce pollen waste. For example, many wind-pollinated species fail to release pollen when wind speeds are low or when humid conditions prevail. Recent studies suggest another way in which species compensate for the inefficiency of wind pollination. These studies suggest that species frequently take advantage of the physics of pollen motion by generating specific aerodynamic environments within the immediate vicinity of their female reproductive organs.
- (15)* It is the morphology of these organs that dictates the pattern of airflow disturbances through which pollen must travel. The speed and direction of the airflow disturbances can combine with the physical properties of a species' pollen to produce a species-specific pattern of pollen collision on the surfaces of female reproductive organs. Provided that these surfaces are strategically located, the consequences of this combination can significantly increase the pollen-capture efficiency of a female reproductive organ.
- (20)* A critical question that remains to be answered is whether the morphological attributes of the female reproductive organs of wind-pollinated species are evolutionary adaptations to wind pollination or are merely fortuitous. A complete resolution of the question is as yet impossible since adaptation must be evaluated for each species within its own unique functional context. However, it must be said that, while evidence of such evolutionary adaptations does exist in some species, one must be careful about attributing morphology to adaptation.
- (25)* For example, the spiral arrangement of scale-bract complexes on ovule-bearing pine cones, where the female reproductive organs of conifers are located, is important to the production of airflow patterns that spiral over the cone's surfaces, thereby passing airborne pollen from one scale to the next. However, these patterns cannot be viewed as an adaptation to wind pollination because the spiral arrangement occurs in a number of non-wind-pollinated plant lineages and is regarded as a characteristic of vascular plants, of which conifers are only one kind, as a whole. Therefore, the spiral arrangement is not likely to be the result of a direct adaptation to wind pollination.
- (30)*
- (35)*
- (40)*
- (45)*
- (50)*
- (55)*
21. The author of the passage is primarily concerned with discussing
- the current debate on whether the morphological attributes of wind-pollinated plants are evolutionary adaptations
 - the kinds of airflow patterns that permit wind-pollinated plants to capture pollen most efficiently
 - the ways in which the reproductive processes of wind-pollinated plants are controlled by random events
 - a recently proposed explanation of a way in which wind-pollinated plants reduce pollen waste
 - a specific morphological attribute that permits one species of wind-pollinated plant to capture pollen
22. The author suggests that explanations of wind pollination that emphasize the production of vast quantities of pollen to compensate for the randomness of the pollination process are
- debatable and misleading
 - ingenious and convincing
 - accurate but incomplete
 - intriguing but controversial
 - plausible but unverifiable
23. According to the passage, the "aerodynamic environments" mentioned in line 23, when they are produced, are primarily determined by the
- presence of insects near the plant
 - physical properties of the plant's pollen
 - shape of the plant's female reproductive organs
 - amount of pollen generated by the plant
 - number of seeds produced by the plant
24. According to the passage, true statements about the release of pollen by wind-pollinated plants include which of the following?
- The release can be affected by certain environmental factors.
 - The amount of pollen released increases on a rainy day.
 - Pollen is sometimes not released by plants when there is little wind.
- II only
 - III only
 - I and II only
 - I and III only
 - I, II, and III

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25. The passage suggests that the recent studies cited in lines 19-21 have not done which of the following?
- (A) Made any distinctions between different species of wind-pollinated plants.
 - (B) Considered the physical properties of the pollen that is produced by wind-pollinated plants.
 - (C) Indicated the general range within which plant-generated airflow disturbances are apt to occur.
 - (D) Included investigations of the physics of pollen motion and its relationship to the efficient capture of pollen by the female reproductive organs of wind-pollinated plants.
 - (E) Demonstrated that the morphological attributes of the female reproductive organs of wind-pollinated plants are usually evolutionary adaptations to wind pollination.
26. It can be inferred from the passage that the claim that the spiral arrangement of scale-bract complexes on an ovule-bearing pine cone is an adaptation to wind pollination would be more convincing if which of the following were true?
- (A) Such an arrangement occurred only in wind-pollinated plants.
 - (B) Such an arrangement occurred in vascular plants as a whole.
 - (C) Such an arrangement could be shown to be beneficial to pollen release.
 - (D) The number of bracts could be shown to have increased over time.
 - (E) The airflow patterns over the cone's surfaces could be shown to be produced by such arrangements.
27. Which of the following, if known, is likely to have been the kind of evidence used to support the view described in the first paragraph?
- (A) Wind speeds need not be very low for wind-pollinated plants to fail to release pollen.
 - (B) The female reproductive organs of plants often have a sticky surface that allows them to trap airborne pollen systematically.
 - (C) Grasses, as well as conifers, generate specific aerodynamic environments within the immediate vicinity of their reproductive organs.
 - (D) Rain showers often wash airborne pollen out of the air before it ever reaches an appropriate plant.
 - (E) The density and size of an airborne pollen grain are of equal importance in determining whether that grain will be captured by a plant.

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7. Pauline and Lorraine are paid the same amount of wages per hour for working at the same company, but Pauline has a more difficult job than Lorraine. Pauline argues that because her job is more difficult, the company should pay her more than it pays Lorraine.

Which of the following statements best supports Pauline's argument?

- (A) Lorraine is not opposed to being paid less than Pauline.
 - (B) The company's pay scale is intended to compensate more difficult work with higher wages.
 - (C) Pauline expects to be promoted to a higher-paying position.
 - (D) Lorraine was paid more than either woman expected Lorraine to be paid.
 - (E) Pauline has fewer years of experience in her current job than Lorraine has in hers.
8. Scientists warn of a global warming, a "greenhouse effect" resulting from increased atmospheric pollutants, including carbon dioxide from the burning of wood, coal, and oil. A coal-industry spokesperson says that the effect need not cause concern in the near future if, as some scientists believe, the Earth faces another ice age within the next thousand years, since each calamity could cancel out the other.

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

- (A) There is a generally cyclical pattern in the recurrence of ice ages on Earth.
- (B) The disastrous results of the greenhouse effect have begun to occur and will probably intensify within the next fifty years.
- (C) Trees absorb some of the carbon dioxide in the lower atmosphere and produce oxygen, which is not a pollutant.
- (D) Much of the carbon dioxide currently being produced comes not from coal but from the burning of trees cleared from large areas of tropical rain forest.
- (E) The greenhouse effect is a scientific conjecture based on incomplete data about gases in the upper atmosphere and on a theory about how those gases could affect the heat from the Sun.

9. Although part of the ivory available on world markets was taken from wild elephants that were killed illegally, some ivory is derived from sources that nearly all nations define as legal, such as elephants that have died natural deaths. The world's few remaining wild elephant herds, therefore, are not endangered when those buying ivory at wholesale make a serious effort to limit their purchases to such legal ivory.

The argument above depends on the assumption that

- (A) wholesale buyers attempting to limit their purchases to legal ivory can reliably distinguish legal from illegal ivory
- (B) the demand for products made from legal ivory will continue to grow in the near future
- (C) there are currently fewer wholesale sources of legal ivory in the world than there are of illegal ivory
- (D) wholesale buyers of ivory products are generally unaware of the reasons for the dwindling world supply of ivory
- (E) a continued supply of legal ivory is ensured because elephants reproduce in captivity

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23. The result of flipping an evenly weighted, or “fair,” coin, a process commonly thought to be random, is, in fact, well determined by the impulse given the coin and by the height above the floor from which the coin starts. Yet it is difficult to predict the result of a fair coin flip.

Which of the following, if true, contributes most to an explanation of why the outcome of a coin flip is difficult to predict even though it is well determined?

- (A) Coin flipping has been used as a prime example of a random process for decades.
- (B) The result of flipping an unevenly weighted coin can be predicted with great accuracy.
- (C) If the impulses of coin flippings remain perfectly constant, the results are determined only by the height from which the coin falls.
- (D) An accurate prediction of the result of a coin flip requires extraordinarily precise estimation of height and impulse.
- (E) That the results of coin flipping are well determined runs counter to the randomness that physicists have been finding in more and more processes once thought to be determined.

24. Police found that ninety percent of the burglaries and attempted burglaries over a five-year period in the city of Crowther occurred in houses that did not have burglar alarm systems. The police concluded that, in Crowther, the presence of a burglar alarm system is usually effective as a deterrent to burglary.

The conclusion reached by the police presupposes which of the following?

- (A) The burglars entered houses only when they thought the occupants were away or asleep.
- (B) The burglars entered houses that had burglar alarm systems only when they anticipated finding particularly valuable goods.
- (C) When they entered a house that had no burglar alarm system, the burglars could take more time to search for valuables.
- (D) Before they entered a house, the burglars could usually tell whether or not it had a burglar alarm system.
- (E) The difference in the burglary rate between houses that had burglar alarm systems and those that did not had remained constant during the five-year period.

25. Partha has withdrawn its troops from Baltia after five years of occupation. Earlier this year the country of Cardena began shipping mules to Baltia’s resistance fighters to facilitate transport of weapons across Baltia’s mountains to the battle areas. Cardena’s diplomats now claim that without Cardena’s aid to Baltia’s resistance fighters, Partha would not have withdrawn.

Which of the following, if true, casts the most serious doubt on the accuracy of the assertion of Cardena’s diplomats?

- (A) No precise figures are available concerning the number of mules shipped to Baltia.
- (B) During the past year, Cardena shipped weapons and food, as well as mules, to resistance fighters in Baltia.
- (C) Last year a new government took power in Partha and decided that national interests were not served by the occupation of Baltia.
- (D) Two years ago Partha had no plans to reduce its forces in Baltia.
- (E) Resistance fighters in Baltia fought for five years against Partha’s occupying troops.

7. The claim that learning computer programming is a sure way to a bright future is analogous to the contention, popular a few years ago, that if one wanted a successful career, one should study law. Now, of course, there are more law students graduating than the market can absorb.

The point of the analogy above is that

- (A) lawyers are making increasing use of computers in their work
- (B) computer programmers will increasingly need the services of lawyers
- (C) there will soon be more jobs for lawyers than there are now
- (D) there will soon be more programming students graduating than there are jobs for them
- (E) graduating law students and programming students will soon be competing with each other for the same jobs

8. Whenever Ned is outdoors and the sun is shining, Ned wears his sunglasses. Whenever Ned is outdoors and the sun is not shining, Ned carries his sunglasses in his pocket. Sometimes the sun is shining when Ned is not outdoors.

If the statements above are true and Ned is not wearing his sunglasses, which of the following statements must also be true?

- (A) Ned is carrying his sunglasses in his pocket.
- (B) Ned is not outdoors.
- (C) Ned is not outdoors and the sun is not shining.
- (D) Ned is not outdoors and/or the sun is not shining.
- (E) Ned is outdoors and/or the sun is not shining.

9. Between 1950 and 1965, the federal government spent one-third more on research and development than industry did from its own funds. In 1980, for the first time, industry spent more on research and development than the federal government did. Representatives of industry claim that these statistics show an increased commitment on the part of industry to develop competitive products.

Which of the following, if true, would help to refute the claim of the representatives of industry?

- (A) In 1980 the federal government spent half as much on research and development as it spent in 1965.
- (B) Between 1965 and 1980, industry in the United States experienced increasing competition from industry in other countries.
- (C) In 1979 the federal government shifted research allocations from pharmaceuticals to electronics.
- (D) Since 1965, industry has developed major product innovations, such as the personal computer.
- (E) Before 1985, money spent by industry on research and development was not taxed by the federal government.

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23. It is impossible to believe scientific predictions that a long “nuclear winter” would envelop the Earth as a result of nuclear war. Atmospheric scientists and weather experts cannot reliably and accurately predict tomorrow’s weather. Yet the effect of nuclear explosions on local and worldwide atmospheric conditions must follow the same laws that control everyday weather changes. If the weather cannot be predicted with present knowledge, neither can a nuclear-winter scenario.

Which of the following, if true, would most seriously weaken the argument made above that if scientists cannot reliably predict the daily weather, their predictions of a “nuclear winter” cannot be believed?

- (A) The scientific theory of a nuclear winter uses data that is available to those who forecast the daily weather.
- (B) Scientists’ predictions about a nuclear winter are necessarily speculative, since they cannot be verified by harmless experimentation.
- (C) Weather forecasters usually do not insist that their predictions are infallible.
- (D) Scientific predictions of catastrophic natural events such as volcanic eruptions and earthquakes usually have less reliability than everyday weather predictions.
- (E) The scientific theory of a nuclear winter is concerned with drastic climatic changes rather than day-to-day fluctuations in the weather.

24. Carla and Joel took five courses together but achieved the same grade in only one of the courses—history. Each course was graded on a scale ranging from 60 to 100.

Which of the following statements allows one to determine whether the average of the grades Carla achieved in the five courses was higher than the average of the grades Joel achieved in those courses?

- (A) Carla’s lowest grade was in history, but Joel’s lowest grade was in math.
- (B) Joel’s highest grade was higher than Carla’s highest grade.
- (C) Carla achieved higher grades than Joel in three courses.
- (D) Carla’s lowest grade and Joel’s highest grade were the same.
- (E) Joel’s lowest grade and Carla’s highest grade were for the same course.

25. In the 1960’s, long-term studies of primate behavior often used as subjects tamarins, small monkeys that were thought ideal because they require only small cages, breed frequently, and grow quickly. Field studies were not used because they were costly and difficult. Tamarins were kept caged in male-female pairs, because otherwise, serious fights erupted between unrelated females. On the basis of the fact that breeding occurred, tamarins were viewed as monogamous.

The view taken by the researchers concerning the monogamy of tamarins depended on a questionable assumption. Which of the following could have served as that assumption?

- (A) The suppression of fighting between related females serves to protect their common genetic inheritance.
- (B) Adult male tamarins contribute to the care of tamarin infants.
- (C) The social system of tamarins requires monogamous pairing.
- (D) Male tamarin monkeys do not display aggressive behavior in the wild.
- (E) The way the tamarins were kept in cages did not affect their mating behavior.

SECTION 2
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Though some of the information the author reveals about Russian life might surprise Americans, her major themes are ----- enough.

(A) familiar (B) thorough (C) vital
(D) original (E) interesting

2. In the early twentieth century, the discovery of radium ----- the popular imagination; not only was its discoverer, Marie Curie, idolized, but its market value ----- that of the rarest gemstone.

(A) stormed..sank to
(B) horrified..approached
(C) taxed..was equal to
(D) enflamed..exceeded
(E) escaped..was comparable to

3. The president's secretary and his chief aide adored him, and both wrote obsessively ----- personal memoirs about him; unfortunately, however, ----- does not make for true intimacy.

(A) fatuous..frankness
(B) devoted..idolatry
(C) garrulous..confidentiality
(D) candid..discretion
(E) rancorous..criticism

4. Despite claims that his philosophy can be traced to ----- source, the philosophy in fact draws liberally on several traditions and methodologies and so could justifiably be termed -----.

(A) a particular..consistent
(B) a schematic..multifaceted
(C) a dominant..cogent
(D) an authoritative..derivative
(E) a single..eclectic

5. Du Bois' foreign trips were the highlight, not the -----, of his travels; he was habitually on the go across and around the United States.
(A) idiosyncrasy (B) result (C) precursor
(D) culmination (E) totality
6. Business forecasts usually prove reasonably accurate when the assumption that the future will be much like the past is -----; in times of major ----- in the business environment, however, forecasts can be dangerously wrong.
(A) specified..discontinuities
(B) questioned..surges
(C) contradicted..improvements
(D) entertained..risks
(E) satisfied..shifts
7. It is almost always desirable to increase the yield of a crop if ----- increases are not also necessary in energy, labor, and other inputs of crop production.
(A) predetermined (B) commensurate
(C) compatible (D) measured (E) equivocal

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Zooplankton, tiny animals adapted to an existence in the ocean, have evolved clever mechanisms for obtaining their food, minuscule phytoplankton (plant plankton).

Line (5) A very specialized feeding adaptation in zooplankton is that of the tadpolelike appendicularian who lives in a walnut-sized (or smaller) balloon of mucus equipped with filters that capture and concentrate phytoplankton. The balloon, a transparent structure that varies in design according to the type of appendicularian inhabiting it, also protects the animal and helps to keep it afloat. Water containing phytoplankton is pumped by the appendicularian's muscular tail into the balloon's incurrent filters, passes through the feeding filter where the appendicularian sucks the food into its mouth, and then goes through an exit passage. Found in all the (10) oceans of the world, including the Arctic Ocean, appendicularians tend to remain near the water's surface where the density of phytoplankton is greatest.

(15)

17. It can be inferred from the passage that which of the following is true of appendicularians?

- (A) They are exclusively carnivorous.
- (B) They have more than one method of obtaining food.
- (C) They can tolerate frigid water.
- (D) They can disguise themselves by secreting mucus.
- (E) They are more sensitive to light than are other zooplankton.

18. The author is primarily concerned with

- (A) explaining how appendicularians obtain food
- (B) examining the flotation methods of appendicularians
- (C) mapping the distribution of appendicularians around the world
- (D) describing how appendicularians differ from other zooplankton
- (E) comparing the various types of balloons formed by appendicularians

19. According to the passage, all of the following are descriptive of appendicularians EXCEPT

- (A) tailed (B) vegetarian (C) small-sized
- (D) single-celled (E) ocean-dwelling

20. The passage suggests that appendicularians tend to remain in surface waters because they

- (A) prefer the warmer water near the surface
- (B) are unable to secrete mucus at the lower levels of the ocean
- (C) use the contrast of light and shadow at the surface to hide from predators
- (D) live in balloons that cannot withstand the water pressure deeper in the ocean
- (E) eat food that grows more profusely near the surface

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Line
(5) Students of United States history, seeking to identify the circumstances that encouraged the emergence of feminist movements, have thoroughly investigated the mid-nineteenth-century American economic and social conditions that affected the status of women. These historians, however, have analyzed less fully the development of specifically feminist ideas and activities during the same period. Furthermore, the ideological origins of feminism in the United States have been obscured because, even when historians did take into account those feminist ideas and activities occurring within the United States, they failed to recognize that feminism was then a truly international movement actually centered in Europe. American feminist activists who have been described as "solitary" and "individual theorists" were in reality connected to a movement—utopian socialism—which was already popularizing feminist ideas in Europe during the two decades that culminated in the first women's rights conference held at Seneca Falls, New York, in 1848. Thus, a complete understanding of the origins and development of nineteenth-century feminism in the United States requires that the geographical focus be widened to include Europe and that the detailed study already made of social conditions be expanded to include the ideological development of feminism.

(10) The earliest and most popular of the utopian socialists were the Saint-Simonians. The specifically feminist part of Saint-Simonianism has, however, been less studied than the group's contribution to early socialism. This is regrettable on two counts. By 1832 feminism was the central concern of Saint-Simonianism and entirely absorbed its adherents' energy; hence, by ignoring its feminism, European historians have misunderstood Saint-Simonianism. Moreover, since many feminist ideas can be traced to Saint-Simonianism, European historians' appreciation of later feminism in France and the United States remained limited.

(15) Saint-Simon's followers, many of whom were women, based their feminism on an interpretation of his project to reorganize the globe by replacing brute force with the rule of spiritual powers. The new world order would be ruled together by a male, to represent reflection, and a female, to represent sentiment. This complementarity reflects the fact that, while the Saint-Simonians did not reject the belief that there were innate differences between men and women, they nevertheless foresaw an equally important social and political role for both sexes in their utopia.

(20) Only a few Saint-Simonians opposed a definition of sexual equality based on gender distinction. This minority believed that individuals of both sexes were born similar in capacity and character, and they ascribed male-female differences to socialization and education.

(25) The envisioned result of both currents of thought, however, was that women would enter public life in the new age and that sexual equality would reward men as well as women with an improved way of life.

21. It can be inferred that the author considers those historians who describe early feminists in the United States as "solitary" to be
- (A) insufficiently familiar with the international origins of nineteenth-century American feminist thought
(B) overly concerned with the regional diversity of feminist ideas in the period before 1848
(C) not focused narrowly enough in their geographical scope
(D) insufficiently aware of the ideological consequences of the Seneca Falls conference
(E) insufficiently concerned with the social conditions out of which feminism developed
22. According to the passage, which of the following is true of the Seneca Falls conference on women's rights?
- (A) It was primarily a product of nineteenth-century Saint-Simonian feminist thought.
(B) It was the work of American activists who were independent of feminists abroad.
(C) It was the culminating achievement of the utopian socialist movement.
(D) It was a manifestation of an international movement for social change and feminism.
(E) It was the final manifestation of the women's rights movement in the United States in the nineteenth century.
23. The author's attitude toward most European historians who have studied the Saint-Simonians is primarily one of
- (A) approval of the specific focus of their research
(B) disapproval of their lack of attention to the issue that absorbed most of the Saint-Simonians' energy after 1832
(C) approval of their general focus on social conditions
(D) disapproval of their lack of attention to links between the Saint-Simonians and their American counterparts
(E) disagreement with their interpretation of the Saint-Simonian belief in sexual equality

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24. The author mentions all of the following as characteristic of the Saint-Simonians EXCEPT:
- (A) The group included many women among its members.
 - (B) The group believed in a world that would be characterized by sexual equality.
 - (C) The group was among the earliest European socialist groups.
 - (D) Most members believed that women should enter public life.
 - (E) Most members believed that women and men were inherently similar in ability and character.
25. It can be inferred from the passage that the Saint-Simonians envisioned a utopian society having which of the following characteristics?
- (A) It would be worldwide.
 - (B) It would emphasize dogmatic religious principles.
 - (C) It would most influence the United States.
 - (D) It would have armies composed of women rather than of men.
 - (E) It would continue to develop new feminist ideas.
26. It can be inferred from the passage that the author believes that study of Saint-Simonianism is necessary for historians of American feminism because such study
- (A) would clarify the ideological origins of those feminist ideas that influenced American feminism
 - (B) would increase understanding of a movement that deeply influenced the utopian socialism of early American feminists
 - (C) would focus attention on the most important aspect of Saint-Simonian thought before 1832
 - (D) promises to offer insight into a movement that was a direct outgrowth of the Seneca Falls conference of 1848
 - (E) could increase understanding of those ideals that absorbed most of the energy of the earliest American feminists
27. According to the passage, which of the following would be the most accurate description of the society envisioned by most Saint-Simonians?
- (A) A society in which women were highly regarded for their extensive education
 - (B) A society in which the two genders played complementary roles and had equal status
 - (C) A society in which women did not enter public life
 - (D) A social order in which a body of men and women would rule together on the basis of their spiritual power
 - (E) A social order in which distinctions between male and female would not exist and all would share equally in political power

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SECTION 4
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Job failure means being fired from a job, being asked to resign, or leaving ----- to protect yourself because you had very strong evidence that one of the first two was -----.
(A) voluntarily..impending
(B) abruptly..significant
(C) knowingly..operative
(D) understandably..pertinent
(E) eventually..intentional
2. The tone of Jane Carlyle's letter is guarded, and her feelings are always ----- by the wit and pride that made ----- plea for sympathy impossible for her.
(A) masked..a direct
(B) bolstered..a needless
(C) controlled..a circumspect
(D) enhanced..an intentional
(E) colored..an untimely
3. French folktales almost always take place within the basic ----- that correspond to the ----- setting of peasant life: on the one hand, the household and village and on the other, the open road.
(A) contexts..hierarchical
(B) structures..personal
(C) frameworks..dual
(D) chronologies..generic
(E) narratives..ambivalent
4. Nurturing the Royal Ballet's artistic growth while preserving its institutional stability has been difficult, because the claims of the latter seem inescapably to ----- development; apparently, attaining artistic success is simpler than ----- it.
(A) ensure..promoting
(B) inhibit..perpetuating
(C) undermine..resurrecting
(D) modify..appreciating
(E) supplement..confining
5. Inspired interim responses to hitherto unknown problems, New Deal economic strategems became ----- as a result of bureaucratization, their flexibility and adaptability destroyed by their transformation into rigid policies.
(A) politicized
(B) consolidated
(C) ossified
(D) ungovernable
(E) streamlined
6. Biologists ----- isolated oceanic islands like the Galapagos, because, in such small, laboratory-like settings, the rich hurly-burly of continental plant and animal communities is reduced to a scientifically ----- complexity.
(A) explore..diverse
(B) desert..manageable
(C) exploit..intimidating
(D) reject..intricate
(E) prize..tractable
7. The startling finding that variations in the rate of the Earth's rotation depend to an ----- degree on the weather has necessitated a complete ----- of the world's time-keeping methods.
(A) unexpected..overhaul
(B) anticipated..recalibration
(C) indeterminate..rejection
(D) unobservable..review
(E) estimated..acceptance

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

*Line
(5)*
Historically, a cornerstone of classical empiricism has been the notion that every true generalization must be confirmable by specific observations. In classical empiricism, the truth of “All balls are red,” for example, is assessed by inspecting balls; any observation of a *non* red ball refutes unequivocally the proposed generalization.

(10)
For W.V.O. Quine, however, this constitutes an overly “narrow” conception of empiricism. “All balls are red,” he maintains, forms one strand within an entire web of statements (our knowledge); individual observations can be referred only to this web as a whole. As new observations are collected, he explains, they must be integrated into the web. Problems occur only if a contradiction develops between a new observation, say, “That ball *(15)* is blue,” and the preexisting statements. In that case, he argues, *any* statement or combination of statements (not merely the “offending” generalization, as in classical empiricism) can be altered to achieve the fundamental requirement, a system free of contradictions, even if, in some cases, the alteration consists of labeling *(20)* the new observation a “hallucination.”

17. The author of the passage is primarily concerned with presenting

- (A) criticisms of Quine’s views on the proper conceptualization of empiricism
- (B) evidence to support Quine’s claims about the problems inherent in classical empiricism
- (C) an account of Quine’s counterproposal to one of the traditional assumptions of classical empiricism
- (D) an overview of classical empiricism and its contributions to Quine’s alternate understanding of empiricism
- (E) a history of classical empiricism and Quine’s reservations about it

18. According to Quine’s conception of empiricism, if a new observation were to contradict some statement already within our system of knowledge, which of the following would be true?

- (A) The new observation would be rejected as untrue.
- (B) Both the observation and the statement in our system that it contradicted would be discarded.
- (C) New observations would be added to our web of statements in order to expand our system of knowledge.
- (D) The observation or some part of our web of statements would need to be adjusted to resolve the contradiction.
- (E) An entirely new field of knowledge would be created.

19. As described in the passage, Quine’s specific argument against classical empiricism would be most strengthened if he did which of the following?

- (A) Provided evidence that many observations are actually hallucinations.
- (B) Explained why new observations often invalidate preexisting generalizations.
- (C) Challenged the mechanism by which specific generalizations are derived from collections of particular observations.
- (D) Mentioned other critics of classical empiricism and the substance of their approaches.
- (E) Gave an example of a specific generalization that has not been invalidated despite a contrary observation.

20. It can be inferred from the passage that Quine considers classical empiricism to be “overly ‘narrow’” (lines 7-8) for which of the following reasons?

- I. Classical empiricism requires that our system of generalizations be free of contradictions.
 - II. Classical empiricism demands that in the case of a contradiction between an individual observation and a generalization, the generalization must be abandoned.
 - III. Classical empiricism asserts that every observation will either confirm an existing generalization or initiate a new generalization.
- (A) II only
 - (B) I and II only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

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Until recently astronomers have been puzzled by the fate of red giant and supergiant stars. When the core of a giant star whose mass surpasses 1.4 times the present mass of our Sun (M_{\odot}) exhausts its nuclear fuel, it is unable to support its own weight and collapses into a tiny neutron star. The gravitational energy released during this implosion of the core blows off the remainder of the star in a gigantic explosion, or a supernova. Since around 50 percent of all stars are believed to begin their lives with masses greater than $1.4 M_{\odot}$, we might expect that one out of every two stars would die as a supernova. But in fact, only one star in thirty dies such a violent death. The rest expire much more peacefully as planetary nebulae. Apparently most massive stars manage to lose sufficient material that their masses drop below the critical value of $1.4 M_{\odot}$ before they exhaust their nuclear fuel.

Evidence supporting this view comes from observations of IRC + 10216, a pulsating giant star located 700 light-years away from Earth. A huge rate of mass loss ($1 M_{\odot}$ every 10,000 years) has been deduced from infrared observations of ammonia (NH_3) molecules located in the circumstellar cloud around IRC + 10216. Recent microwave observations of carbon monoxide (CO) molecules indicate a similar rate of mass loss and demonstrate that the escaping material extends outward from the star for a distance of at least one light-year. Because we know the size of the cloud around IRC + 10216 and can use our observations of either NH_3 or CO to measure the outflow velocity, we can calculate an age for the circumstellar cloud. IRC + 10216 has apparently expelled, in the form of molecules and dust grains, a mass equal to that of our entire Sun within the past ten thousand years. This implies that some stars can shed huge amounts of matter very quickly and thus may never expire as supernovas. Theoretical models as well as statistics on supernovas and planetary nebulae suggest that stars that begin their lives with masses around $6 M_{\odot}$ shed sufficient material to drop below the critical value of $1.4 M_{\odot}$. IRC + 10216, for example, should do this in a mere 50,000 years from its birth, only an instant in the life of a star.

But what place does IRC + 10216 have in stellar evolution? Astronomers suggest that stars like IRC + 10216 are actually “protoplanetary nebulae”—old giant stars whose dense cores have almost but not quite rid themselves of the fluffy envelopes of gas around them. Once the star has lost the entire envelope, its exposed core becomes the central star of the planetary nebula and heats and ionizes the last vestiges of the envelope as it flows away into space. This configuration is a full-fledged planetary nebula, long familiar to optical astronomers.

21. The primary purpose of the passage is to
 - (A) offer a method of calculating the age of circumstellar clouds
 - (B) describe the conditions that result in a star's expiring as a supernova
 - (C) discuss new evidence concerning the composition of planetary nebulae
 - (D) explain why fewer stars than predicted expire as supernovas
 - (E) survey conflicting theories concerning the composition of circumstellar clouds
22. The passage implies that at the beginning of the life of IRC + 10216, its mass was approximately
 - (A) $7.0 M_{\odot}$
 - (B) $6.0 M_{\odot}$
 - (C) $5.0 M_{\odot}$
 - (D) $1.4 M_{\odot}$
 - (E) $1.0 M_{\odot}$
23. The view to which line 18 refers serves to
 - (A) reconcile seemingly contradictory facts
 - (B) undermine a previously held theory
 - (C) take into account data previously held to be insignificant
 - (D) resolve a controversy
 - (E) question new methods of gathering data
24. It can be inferred from the passage that the author assumes which of the following in the discussion of the rate at which IRC + 10216 loses mass?
 - (A) The circumstellar cloud surrounding IRC + 10216 consists only of CO and NH_3 molecules.
 - (B) The circumstellar cloud surrounding IRC + 10216 consists of material expelled from that star.
 - (C) The age of a star is equal to that of its circumstellar cloud.
 - (D) The rate at which IRC + 10216 loses mass varies significantly from year to year.
 - (E) Stars with a mass greater than $6 M_{\odot}$ lose mass at a rate faster than stars with a mass less than $6 M_{\odot}$ do.

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25. According to information provided by the passage, which of the following stars would astronomers most likely describe as a planetary nebula?
- (A) A star that began its life with a mass of $5.5 M_{\odot}$, has exhausted its nuclear fuel, and has a core that is visible to astronomers
- (B) A star that began its life with a mass of $6 M_{\odot}$, lost mass at a rate of $1 M_{\odot}$ per 10,000 years, and exhausted its nuclear fuel in 40,000 years
- (C) A star that has exhausted its nuclear fuel, has a mass of $1.2 M_{\odot}$, and is surrounded by a circumstellar cloud that obscures its core from view
- (D) A star that began its life with a mass greater than $6 M_{\odot}$, has just recently exhausted its nuclear fuel, and is in the process of releasing massive amounts of gravitational energy
- (E) A star that began its life with a mass of $5.5 M_{\odot}$, has yet to exhaust its nuclear fuel, and exhibits a rate of mass loss similar to that of IRC + 10216
26. Which of the following statements would be most likely to follow the last sentence of the passage?
- (A) Supernovas are not necessarily the most spectacular events that astronomers have occasion to observe.
- (B) Apparently, stars that have a mass of greater than $6 M_{\odot}$ are somewhat rare.
- (C) Recent studies of CO and NH₃ in the circumstellar clouds of stars similar to IRC + 10216 have led astronomers to believe that the formation of planetary nebulae precedes the development of supernovas.
- (D) It appears, then, that IRC + 10216 actually represents an intermediate step in the evolution of a giant star into a planetary nebula.
- (E) Astronomers have yet to develop a consistently accurate method for measuring the rate at which a star exhausts its nuclear fuel.
27. Which of the following titles best summarizes the content of the passage?
- (A) New Methods of Calculating the Age of Circumstellar Clouds
- (B) New Evidence Concerning the Composition of Planetary Nebulas
- (C) Protoplanetary Nebula: A Rarely Observed Phenomenon
- (D) Planetary Nebulas: An Enigma to Astronomers
- (E) The Diminution of a Star's Mass: A Crucial Factor in Stellar Evolution

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6. Miko: Academic products developed at a university are properly considered the results of “work for hire” and really belong to the institution. Therefore, the university should own the copyright for any computer software developed by its faculty.
- Kofi: But a copyright policy this restrictive can impede a university’s primary mission of generating and disseminating knowledge.
- Kofi’s response has which of the following relationships to Miko’s argument?
- (A) Kofi contradicts Miko’s evidence.
(B) Kofi points out a hidden assumption required by Miko’s argument.
(C) Kofi points out a problematic consequence of accepting Miko’s argument.
(D) Kofi shows that Miko’s reasoning is circular.
(E) Kofi shows that Miko forms a generalization from an atypical case.
7. Within the last fifty years, the majority of the United States work force has moved from the manufacturing to the service sector of the economy. This shift has occurred, not because of a decline in the production of goods, but because, with applications of new technology, more production of goods can now be achieved with relatively fewer people, and more people are therefore available to satisfy the increased demand for services.
- Which of the following, if true, provides evidence to support the claim made above that more production of goods can now be achieved with relatively fewer people?
- (A) Many manufacturing industries in the United States have lost a significant share of their domestic and foreign markets to foreign producers.
(B) Services accounted for half of all jobs in the late 1940’s but today account for seventy percent of all jobs.
(C) Manufacturing output was one-third higher in 1980 than in 1970, while manufacturing employment grew only five percent during that period.
(D) Manufacturing industries, on average, pay a higher per-hour wage and use fewer part-time employees than do service industries.
(E) Living standards in states that have shifted to manufacturing economies within the last fifty years are closer to the national average now than in 1940.
8. John: I have tried several different types of psychotherapy at various times in my life: three kinds of “talk” therapy (Freudian, Rogerian, and cognitive) and also behavior therapy. Since the periods when I was in therapy were the least happy times of my life, I have concluded that psychotherapy cannot work for me.
- Which of the following statements, if true, would most weaken John’s conclusion?
- (A) Behavior therapy is designed to address different problems from those addressed by “talk” therapies.
(B) The techniques used in behavior therapy are quite different from those used in “talk” therapies.
(C) People who try several different types of psychotherapy tend to be happier than people who try only one type of psychotherapy.
(D) People who try several different types of psychotherapy are more likely to find one that works for them than are people who try only one type of psychotherapy.
(E) People undergoing psychotherapy that ultimately works are often unhappy while they are in therapy.

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24. When school administrators translate educational research into a standardized teaching program and mandate its use by teachers, students learn less and learn less well than they did before, even though the teachers are the same. The translation by the administrators of theory into prescribed practice must therefore be flawed.

The argument above is based on which of the following assumptions?

- (A) Teachers differ in their ability to teach in accordance with standardized programs.
- (B) The educational research on which the standardized teaching programs are based is sound.
- (C) Researchers should be the ones to translate their own research into teaching programs.
- (D) The ways in which teachers choose to implement the programs are ineffective.
- (E) The level of student learning will vary from state to state.

25. Figures issued by the government of a certain country show that in 1980 the public sector and the private sector each employed the same number of people. Between 1980 and 1984, according to the government, total employment decreased in the public sector more than it increased in the private sector.

If, according to governmental figures, the unemployment rate in this country was the same in both 1980 and 1984, which of the following statements must be true about this country?

- (A) Fewer people were in the labor force, as counted by the government, in 1984 than in 1980.
- (B) The competition for the available work increased between 1980 and 1984.
- (C) The government's figures for total employment increased between 1980 and 1984.
- (D) The number of people counted by the government as unemployed was the same in 1980 and 1984.
- (E) In 1984 more people sought work in the private sector than in the public sector.

TEST 10

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. It was a war the queen and her more prudent counselors wished to ----- if they could and were determined in any event to ----- as long as possible.
(A) provoke. .delay
(B) denounce. .deny
(C) instigate. .conceal
(D) curtail. .promote
(E) avoid. .postpone
2. Despite many decades of research on the gasification of coal, the data accumulated are not directly ----- to environmental questions; thus a new program of research specifically addressing such questions is -----.
(A) analogous. .promising
(B) transferable. .contradictory
(C) antithetical. .unremarkable
(D) applicable. .warranted
(E) pertinent. .unnecessary
3. Unlike other creatures, who are shaped largely by their ----- environment, human beings are products of a culture accumulated over centuries, yet one that is constantly being ----- by massive infusions of new information from everywhere.
(A) harsh. .unconfirmed
(B) surrounding. .upheld
(C) immediate. .transformed
(D) natural. .mechanized
(E) limited. .superseded
4. Edith Wharton sought in her memoir to present herself as having achieved a harmonious wholeness by having ----- the conflicting elements of her life.
(A) affirmed
(B) highlighted
(C) reconciled
(D) confined
(E) identified
5. In their preface, the collection's editors plead that certain of the important articles they ----- were published too recently for inclusion, but in the case of many such articles, this ----- is not valid.
(A) discussed. .replacement
(B) omitted. .excuse
(C) revised. .clarification
(D) disparaged. .justification
(E) ignored. .endorsement
6. The labor union and the company's management, despite their long history of unfailingly acerbic disagreement on nearly every issue, have nevertheless reached an unexpectedly -----, albeit still tentative, agreement on next year's contract.
(A) swift
(B) onerous
(C) hesitant
(D) reluctant
(E) conclusive
7. In response to the follies of today's commercial and political worlds, the author does not ----- inflamed indignation, but rather ----- the detachment and smooth aphoristic prose of an eighteenth-century wit.
(A) display. .rails at
(B) rely on. .avoids
(C) suppress. .clings to
(D) express. .affects
(E) resort to. .spurns

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line
(5)

(10)
(15)

The 1960's witnessed two profound social movements: the civil rights movement and the movement protesting the war in Vietnam. Although they overlapped in time, they were largely distinct. For a brief moment in 1967, however, it appeared that the two movements might unite under the leadership of Martin Luther King, Jr.

King's role in the antiwar movement appears to require little explanation, since he was the foremost advocate of nonviolence of his time. But King's stance on the Vietnam War cannot be explained in terms of pacifism alone. After all, he was something of a late-comer to the antiwar movement, even though by 1965 he was convinced that the role of the United States in the war was indefensible. Why then the two years that passed before he translated his private misgivings into public dissent? Perhaps he believed that he could not criticize American foreign policy without endangering the support for civil rights that he had won from the federal government.

17. According to the passage, the delay referred to in lines 12-15 is perhaps attributable to which of the following?
- (A) King's ambivalence concerning the role of the United States in the war in Vietnam
 - (B) King's attempts to consolidate support for his leadership within the civil rights movement
 - (C) King's desire to keep the leadership of the civil rights movement distinct from that of the antiwar movement
 - (D) King's desire to draw support for the civil rights movement from the leadership of the antiwar movement
 - (E) King's reluctance to jeopardize federal support for the civil rights movement

18. The author supports the claim that "King's stance on the Vietnam War cannot be explained in terms of pacifism alone" (lines 10-12) by implying which of the following?
- (A) There is little evidence that King was ever a student of pacifist doctrine.
 - (B) King, despite pacifist sympathies, was not convinced that the policy of the federal government in Vietnam was wrong.
 - (C) King's belief in nonviolence was formulated in terms of domestic policy rather than in terms of international issues.
 - (D) Had King's actions been based on pacifism alone, he would have joined the antiwar movement earlier than he actually did.
 - (E) Opponents of United States foreign policy within the federal government convinced King of their need for support.
19. Which of the following can be inferred from the passage about the movement opposing the war in Vietnam?
- (A) It preceded the civil rights movement.
 - (B) It began in 1965.
 - (C) It was supported by many who otherwise opposed public dissent.
 - (D) It drew support from most civil rights leaders.
 - (E) It was well underway by 1967.
20. Which of the following best describes the passage?
- (A) It discusses an apparent inconsistency and suggests a reason for it.
 - (B) It outlines a sequence of historical events.
 - (C) It shows why a commonly held view is inaccurate.
 - (D) It evaluates an explanation and finally accepts that explanation.
 - (E) It contrasts two views of an issue.

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What causes a helix in nature to appear with either a dextral ("right-handed," or clockwise) twist or a sinistral ("left-handed," or counterclockwise) twist is one of the most intriguing puzzles in the science of form. Most spiral-shaped snail species are predominantly dextral. But at one time, handedness (twist direction of the shell) was equally distributed within some snail species that have become predominantly dextral or, in a few species, predominantly sinistral. What mechanisms control handedness and keep left-handedness rare?

It would seem unlikely that evolution should discriminate against sinistral snails if sinistral and dextral snails are exact mirror images, for any disadvantage that a sinistral twist in itself could confer on its possessor is almost inconceivable. But left- and right-handed snails are not actually true mirror images of one another. Their shapes are noticeably different. Sinistral rarity might, then, be a consequence of possible disadvantages conferred by these other concomitant structural features.

In addition, perhaps left- and right-handed snails cannot mate with each other, having incompatible twist directions. Presumably an individual of the rarer form would have relative difficulty in finding a mate of the same hand, thus keeping the rare form rare or creating geographically separated right- and left-handed populations.

But this evolutionary mechanism combining dissymmetry, anatomy, and chance does not provide an adequate explanation of why right-handedness should have become predominant. It does not explain, for example, why the infrequent unions between snails of opposing hands produce fewer offspring of the rarer than the commoner form in species where each parent contributes equally to handedness. Nor does it explain why, in a species where one parent determines handedness, a brood is not exclusively right- or left-handed when the offspring would have the same genetic predisposition. In the European pond snail *Lymnaea peregra*, a predominantly dextral species whose handedness is maternally determined, a brood might be expected to be exclusively right- or left-handed—and this often occurs. However, some broods possess a few snails of the opposing hand, and in predominantly sinistral broods, the incidence of dextrality is surprisingly high.

Here, the evolutionary theory must defer to a theory based on an explicit developmental mechanism that can favor either right- or left-handedness. In the case of *Lymnaea peregra*, studies indicate that a dextral gene is expressed during egg formation; i.e., before egg fertilization, the gene produces a protein, found in the cytoplasm of the egg, that controls the pattern of cell division and thus handedness. In experiments, an injection of cytoplasm from dextral eggs changes the pattern of sinistral eggs, but an injection from sinistral eggs does not influence dextral eggs. One explanation for the differing effects is that all *Lymnaea peregra* eggs begin left-handed but most switch to being right-handed. Thus, the path to a solution to the puzzle of handedness in all snails appears to be as twisted as the helix itself.

21. Which of the following would serve as an example of "concomitant structural features" (line 19) that might disadvantage a snail of the rarer form?
 - (A) A shell and body that are an exact mirror image of a snail of the commoner form
 - (B) A smaller population of the snails of the rarer form
 - (C) A chip or fracture in the shell caused by an object falling on it
 - (D) A pattern on the shell that better camouflages it
 - (E) A smaller shell opening that restricts mobility and ingestion relative to that of a snail of the commoner form
22. The second paragraph of the passage is primarily concerned with offering possible reasons why
 - (A) it is unlikely that evolutionary mechanisms could discriminate against sinistral snails
 - (B) sinistrality is relatively uncommon among snail species
 - (C) dextral and sinistral populations of a snail species tend to intermingle
 - (D) a theory based on a developmental mechanism inadequately accounts for the predominance of dextrality across snail species
 - (E) dextral snails breed more readily than sinistral snails, even within predominantly sinistral populations
23. In describing the "evolutionary mechanism" (line 27), the author mentions which of the following?
 - (A) The favorable conditions for nurturing new offspring
 - (B) The variable environmental conditions that affect survival of adult snails
 - (C) The availability of potential mates for breeding
 - (D) The structural identity of offspring to parents of the same hand
 - (E) The frequency of unions between snails of different species

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24. According to the passage, which of the following is true of *Lymnaea peregra*?
- (A) Handedness within the species was at one time equally distributed between left and right.
 - (B) Under laboratory conditions, dextral eggs from *Lymnaea peregra* can be artificially induced to develop into sinistral snails.
 - (C) Broods of *Lymnaea peregra* are, without variation, exclusively sinistral or dextral.
 - (D) Handedness in *Lymnaea peregra* offspring is determined by only one of the parents.
 - (E) Geographic factors have played a larger role than has genetics in the evolution of the species.
25. The passage implies that in *Lymnaea peregra*, there will generally be
- (A) more offspring of the nondominant hand in broods where handedness is determined after, rather than before, fertilization
 - (B) a sinistral gene that produces a protein in the cytoplasm of the egg cell
 - (C) fewer sinistral offspring in dextral broods than dextral offspring in sinistral broods
 - (D) equal numbers of exclusively left- and right-handed broods
 - (E) an increasing occurrence of left-handedness in successive broods
26. It can be inferred from the passage that a predominantly sinistral snail species might stay predominantly sinistral for each of the following reasons EXCEPT for
- (A) a developmental mechanism that affects the cell-division pattern of snails
 - (B) structural features that advantage dextral snails of the species
 - (C) a relatively small number of snails of the same hand for dextral snails of the species to mate with
 - (D) anatomical incompatibility that prevents mating between snails of opposing hands within the species
 - (E) geographic separation of sinistral and dextral populations
27. Which of the following accurately describes the relationship between the evolutionary and developmental theories discussed in the passage?
- (A) Although the two theories reach the same conclusion, each is based on different assumptions.
 - (B) They present contradictory explanations of the same phenomenon.
 - (C) The second theory accounts for certain phenomena that the first cannot explain.
 - (D) The second theory demonstrates why the first is valid only for very unusual, special cases.
 - (E) They are identical and interchangeable in that the second theory merely restates the first in less technical terms.

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8. An oil company conducted an investigation of the environmental effects of oil spills and concluded that waterfowl exposed to oil spills have a 95 percent survival rate. The investigation, based on the examination of waterfowl admitted to a veterinary clinic near the site of a recent oil spill, noted that only one in twenty affected waterfowl died.
- Which of the following, if true, would cast the most serious doubt on the investigation's conclusion about the survival rate of the waterfowl?
- (A) Many of the affected waterfowl that survived the spill had suffered serious injuries.
(B) Each affected waterfowl that died was larger than average for its species.
(C) Most of the affected waterfowl were exposed to oil floating on the surface of the water.
(D) Very few of the affected waterfowl were readmitted to the clinic after reexposure to the oil.
(E) Only those affected waterfowl that appeared to stand a good chance of survival were brought to the veterinary clinic.
9. A test of the National Weather Service's storm-detecting radar systems found that the 1957 system is ten times more reliable than the new computerized system. Therefore, the technology used in the new radar system must be less sophisticated than the radar technology used in the 1957 system.
- The conclusion drawn above depends on which of the following questionable assumptions?
- (A) The reliability of storm-detecting radar systems is determined by the frequency of breakdowns.
(B) The level of sophistication of the technology used in storm-detecting radar systems can be determined from the reliability of the system.
(C) The reliability of storm-detecting radar systems is determined by their accuracy in predicting weather patterns.
(D) Computer hardware is now a key component of the new storm-detecting radar systems used by weather forecasting services.
(E) Most of the significant advances in storm-detecting radar systems technology were made in the 1950's.
10. A doctor investigated whether an insufficient amount of dopamine in the brain causes Parkinson's disease. The doctor injected dopamine into the bloodstreams of patients with Parkinson's disease. The progress of the disease was not halted, nor did any of the patients improve. The doctor concluded that Parkinson's disease must be caused by something other than a lack of dopamine in the brain.
- Which of the following, if true, casts the most doubt on the doctor's conclusion?
- (A) Parkinson's disease causes the brain to produce less dopamine than it normally would.
(B) Recent research has shown that dopamine, when injected into the bloodstream, cannot enter the brain.
(C) Research has shown that dopamine often causes diseases other than Parkinson's disease.
(D) Dopamine synthesized in the laboratory for injections is identical at the molecular level to dopamine synthesized in the brain.
(E) Research has shown that many different chemicals interact to influence the workings of the brain.

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23. Geological and historical evidence shows that earthquakes in the eastern United States can be as powerful as those in California and can strike a much larger area. An eastern earthquake will jolt an area 100 times greater than the area that would be affected by a California quake of comparable magnitude.

Which of the following, if true, most helps to explain the difference described above in the size of the affected areas?

- (A) Buildings in the eastern United States are typically older than those in California and will therefore suffer far greater damage in the event of a major earthquake.
- (B) The crust of the Earth in California, compared to that in the eastern United States, has a greater abundance of faults that absorb the shock waves of an earthquake as they travel outward from the epicenter.
- (C) Several of the most powerful and extensive earthquakes that have occurred in the United States were centered somewhere in the eastern United States.
- (D) Since major earthquakes have occurred far less frequently and regularly in the eastern United States than in California, it is harder to predict when the next major eastern quake might strike.
- (E) The causes of earthquakes in California are better understood than those of earthquakes in the eastern United States.

24. The major goal of physical education programs in schools is to help all children become physically fit. But only a small proportion of children ever participate in team sports. Moreover, team sports usually do less to encourage fitness in participants than do physical education programs that focus directly on aerobic exercise.

The considerations above, if true, could be used most effectively to argue against

- (A) the use of in-school physical education programs to encourage lifelong fitness habits in students
- (B) the participation by young children in community sports teams
- (C) schools' relying heavily on aerobic exercise programs to help all children become physically fit
- (D) the use of a large part of a school's physical education curriculum for team sports
- (E) the use of team sports in schools as an occasional activity for talented athletes

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25. United States advertising agencies are increasingly using interviews at shopping malls, called "mall intercepts," to test for advertising effectiveness, product concept viability, and consumer buying habits. Critics of mall intercepts maintain that the shopping habits of mall shoppers are not representative of those of the larger population.

Which of the following, if true, would provide evidence that most supports the critics' claim about mall intercepts?

- (A) Some mall shoppers patronize more than one store in any given shopping trip.
- (B) Mall shoppers, on average, spend 50 percent more time shopping than shoppers at other locations do.
- (C) In the course of any year, 95 percent of all households in the United States have at least one member who does some shopping at a mall.
- (D) Mall shoppers who use public transportation to reach the mall tend to have lower incomes than mall shoppers who drive to the mall.
- (E) Indoor malls often attract the customary numbers of shoppers even during inclement weather when outdoor malls are likely to lose business.

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Vaillant, who has been particularly interested in the means by which people attain mental health, seems to be looking for ----- answers: a way to close the book on at least a few questions about human nature.
(A) definitive
(B) confused
(C) temporary
(D) personal
(E) derivative
2. The well-trained engineer must understand fields as diverse as physics, economics, geology, and sociology; thus, an overly ----- engineering curriculum should be avoided.
(A) narrow
(B) innovative
(C) competitive
(D) rigorous
(E) academic
3. Although supernovas are among the most ----- of cosmic events, these stellar explosions are often hard to -----, either because they are enormously far away or because they are dimmed by intervening dust and gas clouds.
(A) remote. .observe
(B) luminous. .detect
(C) predictable. .foresee
(D) ancient. .determine
(E) violent. .disregard
4. During the widespread fuel shortage, the price of gasoline was so ----- that suppliers were generally thought to be ----- the consumer.
(A) reactive. .shielding
(B) stable. .blackmailing
(C) depressed. .cheating
(D) prohibitive. .placating
(E) excessive. .gouging
5. Art ----- science, but that does not mean that the artist must also be a scientist; an artist uses the fruits of science but need not ----- the theories from which they derive.
(A) precedes. .anticipate
(B) incorporates. .understand
(C) transcends. .abandon
(D) imitates. .repudiate
(E) resembles. .contest
6. Imposing steep fines on employers for on-the-job injuries to workers could be an effective ----- to creating a safer workplace, especially in the case of employers with poor safety records.
(A) antidote
(B) alternative
(C) addition
(D) deterrent
(E) incentive
7. Literature is inevitably a ----- rather than ----- medium for the simple reason that writers interpose their own vision between the reader and reality.
(A) distorting. .a neutral
(B) transparent. .an opaque
(C) colorful. .a drab
(D) flawless. .an inexact
(E) flexible. .a rigid

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Recently some scientists have concluded that meteorites found on Earth and long believed to have a Martian origin might actually have been blasted free of Mars's gravity by the impact on Mars of other meteorites. This conclusion has led to another question: whether meteorite impacts on Earth have similarly driven rocks from this planet to Mars.

According to astronomer S.A. Phinney, kicking a rock hard enough to free it from Earth's gravity would require a meteorite capable of making a crater more than 60 miles across. Moreover, even if Earth rocks were freed by meteorite impact, Mars's orbit is much larger than Earth's, so Phinney estimates that the probability of these rocks hitting Mars is about one-tenth as great as that of Mars's rocks hitting Earth. To demonstrate this estimate, Phinney used a computer to calculate where 1,000 hypothetical particles would go if ejected from Earth in random directions. He found that 17 of the 1,000 particles would hit Mars.

17. The passage is primarily concerned with

- (A) presenting an argument to support a particular hypothesis
- (B) suggesting an answer to a theoretical question
- (C) questioning the assumptions of a research project
- (D) criticizing experimental results
- (E) explaining the origin of certain scientific data

18. According to the passage, which of the following events may have initiated the process that led to the presence on Earth of meteorites from Mars?

- (A) A meteorite struck the Earth with tremendous velocity.
- (B) A meteorite collided with Mars.
- (C) Approximately 1,000 rocks were ejected from Mars.
- (D) The orbits of Earth and Mars brought the planets to their closest points.
- (E) Rocks from a meteorite impact broke free of Earth's gravity.

19. The passage suggests that which of the following is true concerning the probability that a rock, if ejected from Mars, will hit the Earth?

- (A) The probability is increased when particles are ejected from Mars in random directions.
- (B) The probability is increased by the presence of large craters on the surface of Mars.
- (C) The probability is decreased when Mars's orbit brings the planet close to Earth.
- (D) The probability is greater than the probability that a rock from Earth will hit Mars.
- (E) The probability is less than the probability that a rock from Earth will escape Earth's gravity.

20. Which of the following, if true, would cast most doubt on Phinney's estimate of the probability of Earth rocks hitting Mars?

- (A) Rather than going in random directions, about 25 percent of all particles ejected from Earth go in the same direction into space.
- (B) Approximately 100 meteorites large enough to make a noticeable crater hit the Earth each year.
- (C) No rocks of Earth origin have been detected on Mars.
- (D) The velocity of rocks escaping from Earth's gravity is lower than the velocity of meteorites hitting the Earth.
- (E) No craters more than 60 miles across have been found on Mars.

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A “scientific” view of language was dominant among philosophers and linguists who affected to develop a scientific analysis of human thought and behavior in the early part of this century. Under the force of this view, it was perhaps inevitable that the art of rhetoric should pass from the status of being regarded as of questionable worth (because although it might be both a source of pleasure and a means to urge people to right action, it might also be a means to distort truth and a source of misguided action) to the status of being wholly condemned. If people are regarded only as machines guided by logic, as they were by these “scientific” thinkers, rhetoric is likely to be held in low regard; for the most obvious truth about rhetoric is that it speaks to the whole person. It presents its arguments first to the person as a rational being, because persuasive discourse, if honestly conceived, always has a basis in reasoning. Logical argument is the plot, as it were, of any speech or essay that is respectfully intended to persuade people. Yet it is a characterizing feature of rhetoric that it goes beyond this and appeals to the parts of our nature that are involved in feeling, desiring, acting, and suffering. It recalls relevant instances of the emotional reactions of people to circumstances—real or fictional—that are similar to our own circumstances. Such is the purpose of both historical accounts and fables in persuasive discourse: they indicate literally or symbolically how people may react emotionally, with hope or fear, to particular circumstances. A speech attempting to persuade people can achieve little unless it takes into account the aspect of their being related to such hopes and fears.

Rhetoric, then, is addressed to human beings living at particular times and in particular places. From the point of view of rhetoric, we are not merely logical thinking machines, creatures abstracted from time and space. The study of rhetoric should therefore be considered the most humanistic of the humanities, since rhetoric is not directed only to our rational selves. It takes into account what the “scientific” view leaves out. If it is a weakness to harbor feelings, then rhetoric may be thought of as dealing in weakness. But those who reject the idea of rhetoric because they believe it deals in lies and who at the same time hope to move people to action, must either be liars themselves or be very naïve; pure logic has never been a motivating force unless it has been subordinated to human purposes, feelings, and desires, and thereby ceased to be pure logic.

- Line
(5) (10) (15) (20) (25) (30) (35) (40) (45)
21. According to the passage, to reject rhetoric and still hope to persuade people is
- (A) an aim of most speakers and writers
 - (B) an indication either of dishonesty or of credulity
 - (C) a way of displaying distrust of the audience's motives
 - (D) a characteristic of most humanistic discourse
 - (E) a way of avoiding excessively abstract reasoning
22. It can be inferred from the passage that in the late nineteenth century rhetoric was regarded as
- (A) the only necessary element of persuasive discourse
 - (B) a dubious art in at least two ways
 - (C) an outmoded and tedious amplification of logic
 - (D) an open offense to the rational mind
 - (E) the most important of the humanistic studies
23. The passage suggests that the disparagement of rhetoric by some people can be traced to their
- (A) reaction against science
 - (B) lack of training in logic
 - (C) desire to persuade people as completely as possible
 - (D) misunderstanding of the use of the term “scientific”
 - (E) view of human motivation
24. The passage suggests that a speech that attempts to persuade people to act is likely to fail if it does NOT
- (A) distort the truth a little to make it more acceptable to the audience
 - (B) appeal to the self-interest as well as the humanitarism of the audience
 - (C) address listeners' emotions as well as their intellects
 - (D) concede the logic of other points of view
 - (E) show how an immediately desirable action is consistent with timeless principles
25. The passage suggests that to consider people as “thinking machines” (line 37) is to consider them as
- (A) beings separated from a historical context
 - (B) replaceable parts of a larger social machine
 - (C) more complex than other animals
 - (D) liars rather than honest people
 - (E) infallible in their reasoning

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26. Which of the following persuasive devices is NOT used in the passage?

- (A) A sample of an actual speech delivered by an orator
- (B) The contrast of different points of view
- (C) The repetition of key ideas and expressions
- (D) An analogy that seeks to explain logical argument
- (E) Evaluative or judgmental words

27. Which of the following best states the author's main point about logical argument?

- (A) It is a sterile, abstract discipline, of little use in real life.
- (B) It is an essential element of persuasive discourse, but only one such element.
- (C) It is an important means of persuading people to act against their desires.
- (D) It is the lowest order of discourse because it is the least imaginative.
- (E) It is essential to persuasive discourse because it deals with universal truths.

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8. In a physical education class, 20 students were tested on archery target shooting. These students were then given a two-day training course in archery technique. The students were tested again and showed a 30 percent increase in accuracy. This result proves that the course was effective in increasing people's target-shooting accuracy.

Which of the following, if true, gives the strongest support to the argument above?

- (A) The students were all excellent athletes, and excellent athletes tend to be good at target shooting.
(B) The first testing session functioned as a practice session for the second testing session.
(C) The accuracy with which people can shoot arrows is strongly related to the sharpness of their vision.
(D) A similar group of students who were also tested on archery target shooting but were not given the course did not show an increase in accuracy.
(E) Excellence in archery target shooting is an accomplishment achieved by relatively few of the people who take up the sport.
9. Because the number of surgeons is growing faster than the number of operations and because noninvasive medical therapies are increasingly replacing surgery, the average annual number of operations per surgeon has fallen by one-fourth in recent years. It can be concluded that, if these trends continue, a dangerous decline in the level of surgical skill will occur.

The argument above is based on which of the following assumptions?

- (A) A surgeon's skill cannot be properly maintained unless the surgeon performs operations with a certain minimum frequency.
(B) Surgeons now spend a large percentage of their time performing noninvasive medical procedures.
(C) All doctors, but especially surgeons, are receiving poorer training in medical school than they were a few years ago.
(D) The level of skill of each individual surgeon has declined in recent years.
(E) Some experienced surgeons are now performing a greater number of operations than they used to perform.

10. Researchers who conducted a one-year study found that one marijuana cigarette deposits four times more tar in smokers' lungs than does one tobacco cigarette. The researchers concluded that marijuana smokers are more likely to suffer from tar-induced lung cancer than are tobacco smokers.

Which of the following statements, if true, would most seriously weaken the researchers' conclusion described above?

- (A) The marijuana cigarettes used in the study were substantially smaller than the marijuana cigarettes smoked by the typical user.
(B) None of the human participants in the study had ever smoked tobacco or marijuana in the past.
(C) A follow-up examination conducted five years after the original study showed that none of the human participants had tar-induced lung cancer.
(D) The tobacco cigarettes used in the study contained slightly more tar than the tobacco cigarettes smoked by the typical user.
(E) The typical user of marijuana smokes much less frequently than does the typical user of tobacco.

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23. Fewer than half of the jobs in the United States conform even loosely to the standard forty-hour, nine-to-five weekday schedule, according to demographic experts. This is largely due to the rapid increase in the number of service firms and in the proportion of the United States labor force these firms employ, the experts say.

Which of the following, if true, best helps to explain how the growth of the service sector has had the effect noted above?

- (A) In order to supplement their incomes, a small percentage of workers in other sectors of the economy take service-sector jobs as well.
- (B) New service-sector firms have arisen to fill the need for day care for children, a need that was created by the increasing number of families in which both parents are employed.
- (C) More part-time than full-time jobs have been created through the application of new technologies to traditional occupations.
- (D) Manufacturing enterprises and other nonservice firms often operate twenty-four hours a day, seven days a week.
- (E) The largest and fastest-growing segment of the service sector caters to leisure activities pursued outside the standard nine-to-five weekday schedule.

24. "Headhunters" are firms that, for a fee, undertake to recruit for their clients personnel who are greatly needed yet hard to find. The clients, in turn, require that they be off-limits to headhunters whose services they buy; i.e., headhunters cannot raid one client's staff on behalf of other clients.

Of the following, which would, if feasible, be the best strategy for a company to pursue if that company wanted both to use headhunters to fill a vacancy and, if successful in filling the vacancy, to reduce the risk of losing the newly hired employee to a competitor?

- (A) Find out which headhunters recruit workers of the sort being sought and employ all those headhunters.
- (B) Find out which headhunter has the highest success rate in recruiting for its clients and hire that firm.
- (C) Find out how much the company's competitors currently pay staff of the sort being sought and offer to pay prospective employees higher salaries.
- (D) Find out whether any of the company's competitors are seeking to recruit workers of the sort being sought and, if so, make sure not to hire the same headhunters that they hire.
- (E) Find out which of the company's competitors are on the client lists of the headhunters who are being considered for the job.

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25. Angler: Fish such as suckers, shiners, and chubs are neither fun to catch nor good to eat. They should be eliminated from mountain ponds to make way for trout.

Fish and Game Commissioner: The state's policy is to preserve any aquatic ecosystems that are indigenous to a given area. Interfering with fish populations in these ponds would violate this policy.

Which of the following, if true, would cast most doubt on the Fish and Game Commissioner's position that the angler's proposal is a violation of state policy?

- (A) The suckers, shiners, and chubs in mountain ponds are descendants of fish brought to those ponds by anglers for use as bait in catching the once abundant trout.
- (B) The state's policy of preserving natural aquatic ecosystems favors the interests and hobbies of one group of people over those of other groups.
- (C) Suckers, shiners, and chubs are dull, unattractive fish with none of the graceful beauty of trout.
- (D) People who fish in mountain ponds have a deeper appreciation of nature than do people who never visit such areas.
- (E) A large percentage of the fish in mountain ponds could be eliminated and replaced with trout without seriously disturbing any plants or animals in the surrounding woodlands.

5. Research has proved that eating lots of fish greatly decreases the risk of developing heart disease. The key factor providing protection has been identified as omega-3 fatty acids, a family of fatty acids found in fish oils. Therefore, if people take dietary supplements of omega-3's in capsule form, they will decrease their risk of developing heart disease.

Which of the following, if true, would most seriously weaken the conclusion drawn above?

- (A) Some dietary supplements have been shown to have harmful side effects.
- (B) Omega-3's occur in extremely low quantities in some kinds of fish.
- (C) Omega-3's are effective only because they interact with other substances found mainly in fish.
- (D) The majority of people who eat fish say that they do so because they like the taste of fish.
- (E) Researchers have found evidence that fish oil supplements would also reduce the effects of asthma and arthritis for some persons.

6. It is no wonder that some domestic car companies have to attract potential buyers with rebates and low interest rates. Why do not those companies produce cars that are more fuel-efficient? If all domestic manufacturers built cars that were as fuel-efficient as imported cars, rebates and low interest rates would not be needed.

The argument above would be most strengthened if which of the following were true?

- (A) The offer of rebates has always signified that an industry is in decline.
- (B) For a majority of buyers of new cars, high fuel efficiency is the most important criterion in choosing a car.
- (C) Some cars built by domestic manufacturers are more fuel-efficient than many of the popular imported cars.
- (D) Many car buyers prefer to purchase midsize and larger cars.
- (E) Many car buyers rate operating costs as less important than initial purchase price when choosing a car.

7. Ergot is a fungus that can infest the seed heads of any grain crop but is common only on rye. Ergot contains chemicals poisonous to humans.

Rye was introduced in Europe in the Middle Ages as a crop for land too poor and damp for wheat to grow well. Thus, rye tended to be the staple of the poorer peasants.

Which of the following hypotheses is best supported by the information above?

- (A) Ergot did not occur in Europe prior to the Middle Ages.
- (B) People in the Middle Ages were well aware of the toxicity of ergot.
- (C) Before the introduction of rye, no attempts had been made to cultivate the poor and damp land in Europe.
- (D) In Europe during the Middle Ages, prosperous people were less at risk from ergot poisoning than poor people were.
- (E) Prior to the Middle Ages, Europe was as densely populated as dependence on a single grain crop permitted.

GO ON TO THE NEXT PAGE.

23. During the last twenty years, eleven percent of those people who received certification to practice in a particular profession were women, and all those people who received certification during those years obtained full-time positions. Nevertheless, only five percent of the full-time positions in this profession are currently held by women.

Which of the following, if true, could explain the difference in the percentages mentioned in the passage above?

- (A) It was easier to obtain certification twenty years ago than it is currently.
- (B) The majority of those currently in the profession were hired more than twenty years ago, when virtually everyone in the profession was male.
- (C) The women certified in the last twenty years have tended to choose different specialties within the profession than the men have tended to choose.
- (D) Male and female members of the profession have been paid according to equal pay scales for all of the past twenty years.
- (E) Although women currently hold five percent of the full-time positions in the profession, they hold only two percent of the supervisory positions.

24. To be mentally healthy, people must have self-respect. People can maintain self-respect only by continually earning the respect of others they esteem. They can earn this respect only by treating these others morally.

Which of the following conclusions can be properly drawn from the statements above?

- (A) People who are mentally healthy will be treated morally by others.
- (B) People who are mentally healthy will have treated morally those they esteem.
- (C) People who are mentally healthy must have self-respect in order to be treated morally by others.
- (D) People can expect to be treated morally by others only if they esteem these others.
- (E) People who have self-respect seldom treat morally those they esteem.

25. People often recall having felt chilled before the onset of a cold. This supports the hypothesis that colds are, at least sometimes, caused by becoming chilled; it is the chill that allows a rhinovirus, if present, to infect a person.

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

- (A) Being chilled is a form of stress, and stress lowers the defenses of a person's immune system, which guards against infection.
- (B) After a rhinovirus has incubated in a person for several days, the first symptom it causes is a feeling of chilliness.
- (C) People who are tired and then become chilled are more likely to catch severe colds than are people who are chilled without being tired.
- (D) Some people who catch colds are not sure what it was that allowed them to catch cold.
- (E) Rhinoviruses are not always present in the environment, and so a person could become chilled without catching a cold.

SECTION 3
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. With its maverick approach to the subject, Shere Hite's book has been more widely debated than most; the media throughout the country have brought the author's ----- opinions to the public's attention.
(A) controversial
(B) authoritative
(C) popular
(D) conclusive
(E) articulate
2. Though many medieval women possessed devotional books that had belonged to their mothers, formal written evidence of women bequeathing books to their daughters is scarce, which suggests that such bequests were ----- and required no -----.
(A) unselfish..rationalization
(B) tangential..approval
(C) customary..documentation
(D) covert..discretion
(E) spurious..record
3. Although their initial anger had ----- somewhat, they continued to ----- the careless worker who had broken the machine.
(A) blazed..assail
(B) diminished..appease
(C) abated..berate
(D) subsided..condone
(E) intensified..torment
4. Borrowing a copyrighted book from a library amounts to a form of theft ----- by entrenched custom: the copyright owner's property, the book, is used repeatedly without ----- for such use.
(A) engendered..application
(B) anticipated..acknowledgment
(C) sanctioned..compensation
(D) provoked..adjustment
(E) perpetrated..permission
5. The notion that a parasite can alter the behavior of a host organism is not mere fiction; indeed, the phenomenon is not even -----.
(A) observable (B) real (C) comprehended
(D) rare (E) imaginable
6. Although Shakespeare received little formal education, scholarship has in recent years ----- the view that he was ----- the work of classical authors.
(A) substantiated..unimpressed by
(B) eroded..obsessed by
(C) supported..oblivious to
(D) questioned..influenced by
(E) undermined..unfamiliar with
7. Darwin's method did not really ----- the idea of race as an important conceptual category; even the much more central idea of species was little more than a theoretical -----.
(A) require..convenience
(B) apply..measurement
(C) exclude..practice
(D) subsume..validation
(E) reject..fact

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

(The article from which the passage was taken appeared in 1982.)

Line (5) Theorists are divided concerning the origin of the Moon. Some hypothesize that the Moon was formed in the same way as were the planets in the inner solar system (Mercury, Venus, Mars, and Earth)—from planet-forming materials in the presolar nebula. But, unlike the cores of the inner planets, the Moon's core contains little or no iron, while the typical planet-forming materials were quite rich in iron. Other theorists propose that the Moon was ripped out of the Earth's rocky mantle by the Earth's collision with another large celestial body after much of the Earth's iron fell to its core. One problem with the collision hypothesis is the question of how a satellite formed in this way could have settled into the nearly circular orbit that the Moon has today. Fortunately, the collision hypothesis is testable. If it is true, the mantlerocks of the Moon and the Earth should be the same geochemically.

(10) (15)

17. The primary purpose of the passage is to
- (A) present two hypotheses concerning the origin of the Moon
 - (B) discuss the strengths and weaknesses of the collision hypothesis concerning the origin of the Moon
 - (C) propose that hypotheses concerning the Moon's origin be tested
 - (D) argue that the Moon could not have been formed out of the typical planet-forming materials of the presolar nebula
 - (E) describe one reason why the Moon's geochemical makeup should resemble that of the Earth

18. According to the passage, Mars and the Earth are similar in which of the following ways?

- I. Their satellites were formed by collisions with other celestial bodies.
 - II. Their cores contain iron.
 - III. They were formed from the presolar nebula.
- (A) III only
 - (B) I and II only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

19. The author implies that a nearly circular orbit is unlikely for a satellite that
- (A) circles one of the inner planets
 - (B) is deficient in iron
 - (C) is different from its planet geochemically
 - (D) was formed by a collision between two celestial bodies
 - (E) was formed out of the planet-forming materials in the presolar nebula
20. Which of the following, if true, would be most likely to make it difficult to verify the collision hypothesis in the manner suggested by the author?
- (A) The Moon's core and mantlerock are almost inactive geologically.
 - (B) The mantlerock of the Earth has changed in composition since the formation of the Moon, while the mantlerock of the Moon has remained chemically inert.
 - (C) Much of the Earth's iron fell to the Earth's core long before the formation of the Moon, after which the Earth's mantlerock remained unchanged.
 - (D) Certain of the Earth's elements, such as platinum, gold, and iridium, followed iron to the Earth's core.
 - (E) The mantlerock of the Moon contains elements such as platinum, gold, and iridium.

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Surprisingly enough, modern historians have rarely interested themselves in the history of the American South in the period before the South began to become self-consciously and distinctively “Southern”—the decades after 1815. Consequently, the cultural history of Britain’s North American empire in the seventeenth and eighteenth centuries has been written almost as if the Southern colonies had never existed. The American culture that emerged during the Colonial and Revolutionary eras has been depicted as having been simply an extension of New England Puritan culture. However, Professor Davis has recently argued that the South stood apart from the rest of American society during this early period, following its own unique pattern of cultural development. The case for Southern distinctiveness rests upon two related premises: first, that the cultural similarities among the five Southern colonies were far more impressive than the differences, and second, that what made those colonies alike also made them different from the other colonies. The first, for which Davis offers an enormous amount of evidence, can be accepted without major reservations; the second is far more problematic.

What makes the second premise problematic is the use of the Puritan colonies as a basis for comparison. Quite properly, Davis decries the excessive influence ascribed by historians to the Puritans in the formation of American culture. Yet Davis inadvertently adds weight to such ascriptions by using the Puritans as the standard against which to assess the achievements and contributions of Southern colonials. Throughout, Davis focuses on the important, and undeniable, differences between the Southern and Puritan colonies in motives for and patterns of early settlement, in attitudes toward nature and Native Americans, and in the degree of receptivity to metropolitan cultural influences.

However, recent scholarship has strongly suggested that those aspects of early New England culture that seem to have been most distinctly Puritan, such as the strong religious orientation and the communal impulse, were not even typical of New England as a whole, but were largely confined to the two colonies of Massachusetts and Connecticut. Thus, what in contrast to the Puritan colonies appears to Davis to be peculiarly Southern—acquisitiveness, a strong interest in politics and the law, and a tendency to cultivate metropolitan cultural models—was not only more typically English than the cultural patterns exhibited by Puritan Massachusetts and Connecticut, but also almost certainly characteristic of most other early modern British colonies from Barbados north to Rhode Island and New Hampshire. Within the larger framework of American colonial life, then, not the Southern but the Puritan colonies appear to have been distinctive, and even they seem to have been rapidly assimilating to the dominant cultural patterns by the late Colonial period.

- Line
(5) (10) (15) (20) (25) (30) (35) (40) (45) (50)
21. The author is primarily concerned with
- (A) refuting a claim about the influence of Puritan culture on the early American South
 - (B) refuting a thesis about the distinctiveness of the culture of the early American South
 - (C) refuting the two premises that underlie Davis’ discussion of the culture of the American South in the period before 1815
 - (D) challenging the hypothesis that early American culture was homogeneous in nature
 - (E) challenging the contention that the American South made greater contributions to early American culture than Puritan New England did
22. The passage implies that the attitudes toward Native Americans that prevailed in the Southern colonies
- (A) were in conflict with the cosmopolitan outlook of the South
 - (B) derived from Southerners’ strong interest in the law
 - (C) were modeled after those that prevailed in the North
 - (D) differed from those that prevailed in the Puritan colonies
 - (E) developed as a response to attitudes that prevailed in Massachusetts and Connecticut
23. According to the author, the depiction of American culture during the Colonial and Revolutionary eras as an extension of New England Puritan culture reflects the
- (A) fact that historians have overestimated the importance of the Puritans in the development of American culture
 - (B) fact that early American culture was deeply influenced by the strong religious orientation of the colonists
 - (C) failure to recognize important and undeniable cultural differences between New Hampshire and Rhode Island on the one hand and the Southern colonies on the other
 - (D) extent to which Massachusetts and Connecticut served as cultural models for the other American colonies
 - (E) extent to which colonial America resisted assimilating cultural patterns that were typically English

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24. The author of the passage is in agreement with which of the following elements of Davis' book?
- I. Davis' claim that acquisitiveness was a characteristic unique to the South during the Colonial period
 - II. Davis' argument that there were significant differences between Puritan and Southern culture during the Colonial period
 - III. Davis' thesis that the Southern colonies shared a common culture
- (A) I only
(B) II only
(C) III only
(D) I and II only
(E) II and III only
25. It can be inferred from the passage that the author would find Davis' second premise (lines 18-20) more plausible if it were true that
- (A) Puritan culture had displayed the tendency characteristic of the South to cultivate metropolitan cultural models
 - (B) Puritan culture had been dominant in all the non-Southern colonies during the seventeenth and eighteenth centuries
 - (C) the communal impulse and a strong religious orientation had been more prevalent in the South
 - (D) the various cultural patterns of the Southern colonies had more closely resembled each other
 - (E) the cultural patterns characteristic of most early modern British colonies had also been characteristic of the Puritan colonies
26. The passage suggests that by the late Colonial period the tendency to cultivate metropolitan cultural models was a cultural pattern that was
- (A) dying out as Puritan influence began to grow
 - (B) self-consciously and distinctively Southern
 - (C) spreading to Massachusetts and Connecticut
 - (D) more characteristic of the Southern colonies than of England
 - (E) beginning to spread to Rhode Island and New Hampshire
27. Which of the following statements could most logically follow the last sentence of the passage?
- (A) Thus, had more attention been paid to the evidence, Davis would not have been tempted to argue that the culture of the South diverged greatly from Puritan culture in the seventeenth century.
 - (B) Thus, convergence, not divergence, seems to have characterized the cultural development of the American colonies in the eighteenth century.
 - (C) Thus, without the cultural diversity represented by the American South, the culture of colonial America would certainly have been homogeneous in nature.
 - (D) Thus, the contribution of Southern colonials to American culture was certainly overshadowed by that of the Puritans.
 - (E) Thus, the culture of America during the Colonial period was far more sensitive to outside influences than historians are accustomed to acknowledge.

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6. Injections of small quantities of a drug, the active ingredient of which is a human hormone, have been shown to reverse very high blood pressure rapidly and without causing undesirable side effects. However, high blood pressure is a condition that must be treated for a patient's entire lifetime, and because the frequency of injections that would be necessary renders the drug unsatisfactory for such long-term treatment, doctors continue to treat patients with injections of other medications.
- Which of the following can be properly concluded from the statements above?
- (A) The beneficial effects of the drug in the doses in which it is administered are short-lived compared to the effects of some other injected medications.
- (B) Less-frequent injections of the drug in larger doses would provide a satisfactory treatment for very high blood pressure.
- (C) The human body can be stimulated to produce the hormone whenever blood pressure reaches dangerously high levels.
- (D) When the drug is administered orally rather than by injection, it reverses very high blood pressure but also causes undesirable side effects.
- (E) Drugs that are administered orally can reverse very high blood pressure even more rapidly than can drugs taken by injection.
7. The neurons in the human brain have a unique property: they are cells that, in adults, do not divide. This property makes them immune from cancer. If the mechanism that keeps neurons from proliferating can be found and transferred to other types of cells, the complete prevention of the cancers afflicting those cells will be possible.
- Which of the following, if true, would provide a good reason for not trying to prevent cancer by the method indicated above?
- (A) The human brain contains cell types other than neurons.
- (B) The process of normal cell division has been studied extensively and is well understood.
- (C) Most human tissue depends on the periodic division of cells for its health.
- (D) The mechanism that keeps neurons from proliferating in adults has never been known to fail.
- (E) Some kinds of cancer whose causes are known can be prevented now, but there are few kinds for which it is practically feasible to eliminate the causes.
8. Twenty percent of all energy consumed in the United States is consumed by home appliances. If appliances that are twice as energy-efficient as those currently available are produced, this figure will eventually be reduced to about ten percent. The argument above requires which of the following assumptions?
- (A) Home-appliance usage would not increase along with the energy efficiency of the appliances.
- (B) It would not be expensive to produce home appliances that are energy-efficient.
- (C) Home-appliance manufacturers now have the technology to produce appliances that are twice as energy-efficient as those currently available.
- (D) The cost of energy to the consumer would rise with increases in the energy efficiency of home appliances.
- (E) The percentage of energy consumed by home appliances will increase if existing appliances are not replaced by more energy-efficient models.

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23. When a large bird, the dodo, still inhabited the island of Mauritius, one of its favorite foods was the fruit of a particular species of tree. After the dodo became extinct, new fruit trees of that species ceased to sprout on the island.

Which of the following, if true, would most help to account for the phenomenon described above?

- (A) The dodo ate a variety of other fruits as well; trees producing these other fruits continued to flourish after the dodo's extinction.
- (B) Although other birds also ate the tree's fruit, the dodo was the largest and thus required the greatest quantities of fruit.
- (C) When the fruit of the tree was not eaten, it gradually decayed, and the seeds within the fruit were deposited in soil.
- (D) The dodo's digestive processes softened the seeds of the tree's fruit before the dodo excreted the seeds; the seeds germinated only after being thus softened.
- (E) The dodo tended to live where the tree's fruit was plentiful; it was in these areas that new fruit trees of that species sprouted before the dodo's extinction.

Questions 24-25

Mercury, one of the deadliest toxins, makes up approximately fifty percent of the amalgam used by dentists in silver fillings. The effects of acute mercury poisoning are well known—kidney failure, muscle tremors, memory loss, and even death. It is clear that responsible dentists should remove all of their patients' silver fillings and replace them with fillings of plastic composites.

24. Which of the following, if true, most seriously weakens the author's argument?

- (A) Plastic composite fillings are more expensive than silver fillings.
- (B) Most patients are satisfied with the durability of their silver fillings.
- (C) A patient's exposure to mercury from multiple silver fillings is at a harmless level.
- (D) Most dental insurance plans do not consider the replacing of silver fillings to be necessary.
- (E) Mercury is also present in certain seafoods, alcoholic beverages, and medications.

25. Which of the following, if true, most strengthens the author's argument?

- (A) Silver fillings gradually corrode and small amounts of mercury leak from the amalgam.
- (B) It is difficult to measure the amount of mercury in a person's body.
- (C) Some patients have more than one filling per tooth.
- (D) Mercury poisoning produces a range of subtle but distinctive symptoms.
- (E) The materials for plastic composite fillings are readily available to dentists.

SECTION 6
Time — 30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The functions of the hands, eyes, and brain are so ----- that using the hands during early childhood helps to promote the child's entire ----- development.
(A) intertwined..perceptual
(B) unalterable..intellectual
(C) enigmatic..psychological
(D) regulated..adolescent
(E) individualized..social
2. Before 1500 North America was inhabited by more than 300 cultural groups, each with different customs, social structures, world views, and languages; such diversity ----- the existence of a single Native American culture.
(A) complements (B) implies (C) reiterates
(D) argues against (E) explains away
3. That dealers ----- enough to nurture a young modern painter's career rather than plunder it exist is not impossible, but the public's ----- appetite for modern art makes such dealers less and less likely.
(A) chivalrous..discriminating
(B) magnanimous..quirky
(C) patient..insatiable
(D) cynical..finicky
(E) reckless..zealous
4. In the absence of any ----- caused by danger, hardship, or even cultural difference, most utopian communities deteriorate into ----- but enervating backwaters.
(A) turmoil..frantic
(B) mistrust..naïve
(C) amelioration..ignorant
(D) decimation..intrusive
(E) stimulation..placid
5. As Juanita argued, this new code of conduct is laughable; its principles are either -----, offering no wisdom but the obvious, or are so devoid of specific advice as to make almost any action -----.
(A) irresolute..unlikely
(B) corroborative..redundant
(C) platitudeous..justifiable
(D) homogeneous..impartial
(E) labyrinthine..unacceptable
6. Histocompatibility antigens that attack foreign tissue in the body cannot have been ----- through evolution expressly to ----- organ transplantation; on the contrary, they have been found to facilitate many essential biological functions.
(A) designed..retain
(B) produced..aid
(C) developed..enhance
(D) selected..promote
(E) conserved..foil
7. Their air of cheerful self-sacrifice and endless complaisance won them undeserved praise, for their seeming gallantry was wholly motivated by a ----- wish to avoid conflict of any sort.
(A) poignant
(B) sincere
(C) plaintive
(D) laudable
(E) craven

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line (5) For some time scientists have believed that cholesterol plays a major role in heart disease because people with familial hypercholesterolemia, a genetic defect, have six to eight times the normal level of cholesterol in their blood and they invariably develop heart disease. These people lack cell-surface receptors for low-density lipoproteins (LDL's), which are the fundamental carriers of blood cholesterol to the body cells that use cholesterol. Without an adequate number of cell-surface receptors to remove LDL's from the blood, the cholesterol-carrying LDL's remain in the blood, increasing blood cholesterol levels. Scientists also noticed that people with familial hypercholesterolemia appear to produce more LDL's than normal individuals. How, scientists (10) wondered, could a genetic mutation that causes a slowdown in the removal of LDL's from the blood also result in an increase in the synthesis of this cholesterol-carrying protein?

(15)

(20) Since scientists could not experiment on human body tissue, their knowledge of familial hypercholesterolemia was severely limited. However, a breakthrough came in the laboratories of Yoshio Watanabe of Kobe University in Japan in 1980. Watanabe noticed that a male rabbit in his colony had ten times the normal concentration of cholesterol in its blood. By appropriate breeding, (25) Watanabe obtained a strain of rabbits that had very high cholesterol levels. These rabbits spontaneously developed heart disease. To his surprise, Watanabe further found that the rabbits, like humans with familial hypercholesterolemia, lacked LDL receptors. Thus, scientists could (30) study these Watanabe rabbits to gain a better understanding of familial hypercholesterolemia in humans.

(35) Prior to the breakthrough at Kobe University, it was known that LDL's are secreted from the liver in the form of a precursor, called very low-density lipoproteins (VLDL's), which carry triglycerides as well as relatively small amounts of cholesterol. The triglycerides are removed from the VLDL's by fatty and other tissues. What remains is a remnant particle that must (40) be removed from the blood. What scientists learned by studying the Watanabe rabbits is that the removal of the VLDL remnant requires the LDL receptor. Normally, the majority of the VLDL remnants go to the liver where they bind to LDL receptors and are degraded. In the Watanabe rabbit, due to a lack of LDL (45) receptors on liver cells, the VLDL remnants remain in the blood and are eventually converted to LDL's. The LDL receptors thus have a dual effect in controlling LDL levels. They are necessary to prevent oversynthesis of LDL's from VLDL remnants and they are necessary for the normal removal of LDL's from the blood. With (50) this knowledge, scientists are now well on the way toward developing drugs that dramatically lower cholesterol levels in people afflicted with certain forms of familial hypercholesterolemia.

17. In the passage, the author is primarily concerned with
- (A) presenting a hypothesis and describing compelling evidence in support of it
 - (B) raising a question and describing an important discovery that led to an answer
 - (C) showing that a certain genetically caused disease can be treated effectively with drugs
 - (D) explaining what causes the genetic mutation that leads to heart disease
 - (E) discussing the importance of research on animals for the study of human disease
18. Which of the following drugs, if developed, would most likely be an example of the kind of drug mentioned in line 53?
- (A) A drug that stimulates the production of VLDL remnants
 - (B) A drug that stimulates the production of LDL receptors on the liver
 - (C) A drug that stimulates the production of an enzyme needed for cholesterol production
 - (D) A drug that suppresses the production of body cells that use cholesterol
 - (E) A drug that prevents triglycerides from attaching to VLDL's
19. The passage supplies information to answer which of the following questions?
- (A) Which body cells are the primary users of cholesterol?
 - (B) How did scientists discover that LDL's are secreted from the liver in the form of a precursor?
 - (C) Where in the body are VLDL remnants degraded?
 - (D) Which body tissues produce triglycerides?
 - (E) What techniques are used to determine the presence or absence of cell-surface receptors?

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20. According to the passage, by studying the Watanabe rabbits scientists learned that
- (A) VLDL remnants are removed from the blood by LDL receptors in the liver
 - (B) LDL's are secreted from the liver in the form of precursors called VLDL's
 - (C) VLDL remnant particles contain small amounts of cholesterol
 - (D) triglycerides are removed from VLDL's by fatty tissues
 - (E) LDL receptors remove LDL's from the blood
21. The development of drug treatments for some forms of familial hypercholesterolemia is regarded by the author as
- (A) possible, but not very important
 - (B) interesting, but too costly to be practical
 - (C) promising, but many years off
 - (D) extremely unlikely
 - (E) highly probable
22. The passage implies that if the Watanabe rabbits had had as many LDL receptors on their livers as do normal rabbits, the Watanabe rabbits would have been
- (A) less likely than normal rabbits to develop heart disease
 - (B) less likely than normal rabbits to develop high concentrations of cholesterol in their blood
 - (C) less useful than they actually were to scientists in the study of familial hypercholesterolemia in humans
 - (D) unable to secrete VLDL's from their livers
 - (E) immune to drugs that lower cholesterol levels in people with certain forms of familial hypercholesterolemia
23. The passage implies that Watanabe rabbits differ from normal rabbits in which of the following ways?
- (A) Watanabe rabbits have more LDL receptors than do normal rabbits.
 - (B) The blood of Watanabe rabbits contains more VLDL remnants than does the blood of normal rabbits.
 - (C) Watanabe rabbits have fewer fatty tissues than do normal rabbits.
 - (D) Watanabe rabbits secrete lower levels of VLDL's than do normal rabbits.
 - (E) The blood of Watanabe rabbits contains fewer LDL's than does the blood of normal rabbits.

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(The article from which this passage was taken appeared in 1981.)

*Line
(5)* When speaking of Romare Bearden, one is tempted to say, "A great Black American artist." The subject matter of Bearden's collages is certainly Black. Portrayals of the folk of Mecklenburg County, North Carolina, whom he remembers from early childhood, of the jazz musicians and tenement roofs of his Harlem days, of Pittsburgh steelworkers, and his reconstruction of classical Greek myths in the guise of the ancient Black kingdom of Benin, attest to this. In natural harmony with this choice of subject matter are the social sensibilities of the artist, who remains active today with the Cinque Gallery in Manhattan, which he helped found and which is devoted to showing the work of minority artists.

(10)

(15) Then why not call Bearden a Black American artist? Because ultimately this categorization is too narrow. "What stands up in the end is structure," Bearden says. "What I try to do is amplify. If I were just creating a picture of a farm woman from back home, it would have meaning to her and people there. But art amplifies itself to something universal."

(20)

24. According to the passage, all of the following are depicted in Bearden's collages EXCEPT

- (A) workers in Pittsburgh's steel mills
- (B) scenes set in the ancient kingdom of Benin
- (C) people Bearden knew as a child
- (D) traditional representations of the classical heroes of Greek mythology
- (E) the jazz musicians of the Harlem Bearden used to know

25. The author suggests that Bearden should not be called a Black American artist because

- (A) there are many collages by Bearden in which the subject matter is not Black
- (B) Bearden's work reflects the Black American experience in a highly individual style
- (C) through the structure of Bearden's art his Black subjects come to represent all of humankind
- (D) Bearden's true significance lies not so much in his own work as in his efforts to help other minority artists
- (E) much of Bearden's work uses the ancient Black kingdom of Benin for its setting

26. Bearden's social sensibilities and the subject matter of his collages are mentioned by the author in order to explain

- (A) why one might be tempted to call Bearden a Black American artist
- (B) why Bearden cannot be readily categorized
- (C) why Bearden's appeal is thought by many to be ultimately universal
- (D) how deeply an artist's artistic creations are influenced by the artist's social conscience
- (E) what makes Bearden unique among contemporary Black American artists

27. The author of the passage is chiefly concerned with

- (A) discussing Bearden's philosophy of art
- (B) assessing the significance of the ethnic element in Bearden's work
- (C) acknowledging Bearden's success in giving artistic expression to the Black American experience
- (D) pointing out Bearden's helpfulness to other minority artists
- (E) tracing Bearden's progress toward artistic maturity

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7. The presence of microorganisms that produce a toxin causes seawater to turn brownish red, a phenomenon known as a red tide. Sea otters do not feed in areas where clams, their main source of food, have become contaminated with this toxin. According to a proposed explanation of the otters' behavior, the otters sample the clams in a potential feeding area and can taste any toxin in them.

Which of the following, if true, would most strongly indicate that the hypothesis described in the last sentence of the passage is not correct?

- (A) In some of the areas where red tides occur, neither clams nor sea otters are indigenous species.
- (B) The presence of sea otters in a given area has a significant effect on which other marine organisms are to be found in that area.
- (C) When seawater in an area unaffected by red tide is artificially dyed brownish red, sea otters do not feed on the clams in that area.
- (D) If the clams in a given area are contaminated with toxins, sea otters move to other areas in search of food.
- (E) Although very small amounts of the toxin produced during a red tide are not harmful, large doses can be fatal to animals the size of sea otters.

8. An acre of average farmland produces only about 400 pounds of grain amaranth, as against 2,400 pounds per acre, or six times as much, for wheat. It follows that whenever the grain-amaranth price is projected to be more than six times the projected price of wheat, farmers wishing to maximize profits will grow grain amaranth rather than wheat.

The argument above is based on which of the following assumptions?

- (A) An acre's worth of grain amaranth is no more expensive to grow and bring to market than an acre's worth of wheat.
- (B) There is no crop that produces a higher yield in terms of pounds harvested per acre than wheat.
- (C) By choosing which crops to grow, farmers can exert a significant influence on the prices of those crops.
- (D) Farmers are no less motivated by the desire to maximize profits than are other occupational groups.
- (E) Prices of grain crops can change faster than farmers can change the acreage devoted to various grain crops.

9. Most road repairs require more time and money than is budgeted, but last summer's nighttime repairs of Highway 93 and similar roads required no more time or money than had been budgeted. Therefore, making summer repairs to major roads at night would save both time and money.

Which of the following, if true, most strongly supports the conclusion drawn above?

- (A) The smaller number of cars on the roads at night and more comfortable nighttime temperatures allow road workers to work more quickly.
- (B) Road repair crews that work at night mark their work sites with bright flashing lights in addition to the orange cones they use during the daytime.
- (C) The budget for the repairs to Highway 93 was generous enough to make it unlikely that it would be exceeded.
- (D) Road workers who are willing to work at night have an easier time finding jobs, since most people would rather work in the daytime.
- (E) Asphalt used in road repair tends to expand in warmer temperatures and contract in cooler temperatures.

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23. If oven cleaner is added to household bleach, the mixture emits chlorine gas. A mixture of bathtub cleanser and household bleach also emits chlorine gas. If ordinary soap is added to household bleach, no gases are emitted. When an unidentified cleaning agent was added to household bleach, no chlorine gas was emitted.
- If the statements above are all true, which of the following can be determined conclusively on the basis of them about the unidentified cleaning agent?
- (A) It was ordinary soap.
(B) It was either oven cleaner or bathtub cleanser.
(C) It was neither oven cleaner nor bathtub cleanser.
(D) It contained ordinary soap and either oven cleaner or bathtub cleanser.
(E) It contained ordinary soap and neither oven cleaner nor bathtub cleanser.
24. Which of the following, if true, provides the most logical completion of the passage below?
- Cars fueled by methanol have a much lower level of emissions of pollutants such as carbon monoxide and environmentally harmful hydrocarbons than gasoline-fueled cars do. Methanol fuel does produce somewhat higher formaldehyde emissions than gasoline does. Nevertheless, a methanol-powered car actually produces less atmospheric formaldehyde pollution than a comparable gasoline-powered car, because -----.
- (A) compared to carbon monoxide and some hydrocarbons produced by gasoline-powered cars, formaldehyde pollution is not a serious threat to the environment
(B) the technical difficulties involved in mass-producing methanol-powered cars will prevent them from seriously competing with gasoline-powered cars for several years
(C) gasoline-powered cars are required by United States law to be equipped with catalytic converters that reduce emissions of many pollutants
(D) measuring a car's emissions is generally an accurate method of assessing that car's contribution to atmospheric pollution
(E) most formaldehyde pollution generated by gasoline-powered cars results from the photochemical conversion of hydrocarbon emissions into formaldehyde in the atmosphere
25. Until recently experts believed that environment, not genetics, largely determines human personality. A new study, however, has shown that there is more similarity in personality between identical twins raised together than between nonidentical twins raised together. The study concluded that genetics, therefore, does play an important role in determining personality.
- Which of the following, if found to be true, would cast the most doubt on the study's conclusion?
- (A) Identical twins raised separately in different adoptive families are usually more similar in personality than are nonidentical twins raised separately in different adoptive families.
(B) No matter how twins behave, parents treat identical twins in ways that tend to elicit similar personality traits but do not treat nonidentical twins in such ways.
(C) Parents of both identical and nonidentical twins have long claimed that their children, from early infancy, had definite and well-established personality traits.
(D) Birth parents and their identical twin children tend to become more similar to each other in personality over time, but adoptive parents and their identical twin children do not.
(E) Neither identical nor nonidentical twins are likely to display drastic changes in their individual personalities as they grow up.

SECTION 3

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. By idiosyncratically refusing to dismiss an insubordinate member of his staff, the manager not only ----- established policy, but he also ----- his heretofore good chances for promotion.
(A) instituted..bettered
(B) recognized..protected
(C) contravened..jeopardized
(D) reiterated..computed
(E) delimited..restricted
2. Congress is having great difficulty developing a consensus on energy policy, primarily because the policy objectives of various members of Congress rest on such ----- assumptions.
(A) commonplace .. (B) trivial
(C) explicit .. (D) divergent
(E) fundamental
3. The widespread public shock at the news of the guilty verdict was caused partly by ----- news stories that had ----- acquittal.
(A) sensational..condemned
(B) buried..urged
(C) impartial..mentioned
(D) biased..predicted
(E) local..denounced
4. The idealized paintings of nature produced in the eighteenth century are evidence that the medieval ----- natural settings had been ----- and that the outdoors now could be enjoyed without trepidation.
(A) fear of..exorcised
(B) concerns about..regained
(C) affection for..surmounted
(D) disinterest in..alleviated
(E) enthusiasm for..confronted
5. Some paleontologists debate whether the diversity of species has ----- since the Cambrian period, or whether imperfections in the fossil record only suggest greater diversity today, while in actuality there has been either ----- or decreased diversity.
(A) changed..escalation
(B) increased..stasis
(C) expanded..discontinuity
(D) declined..reduction
(E) improved..deviation
6. Manipulating laboratory tissue cultures with hormones is one thing; using hormones to treat human beings, however, is contingent on whether hormones that ----- in the laboratory can affect ----- organisms, and in predictable ways.
(A) develop..similar
(B) succeed..simpler
(C) fail..cellular
(D) work..whole
(E) reproduce..unknown
7. The astronomer and feminist Maria Mitchell's own prodigious activity and the vigor of the Association for the Advancement of Women during the 1870's ----- any assertion that feminism was ----- in that period.
(A) exclude..thriving
(B) contradict..prospering
(C) pervade..remote
(D) buttress..dormant
(E) belie..quiescent

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The more that is discovered about the intricate organization of the nervous system, the more it seems remarkable that genes can successfully specify the development of that system. Human genes contain too little information even to specify which hemisphere of the brain each of a human's 10^{11} neurons should occupy, let alone the hundreds of connections that each neuron makes. For such reasons, we can assume that there must be an important random factor in neural development, and in particular, that errors must and do occur in the development of all normal brains.

The most vivid expression of such errors occurs in genetically identical (isogenic) organisms. Even when reared under the same conditions, isogenic organisms are rarely exact copies of one another, and their differences have revealed much about the random variations that result from an organism's limited supply of genetic information. In isogenic Daphniae, for example, even though the position, size, and branching pattern of each optic neuron are remarkably constant, there is some variability in connectivity, and the number of synapses varies greatly. This variability is probably the result of random scatter beyond the resolution of genetic control and is best termed "imprecision," since its converse, the degree of clustering about a mean, is conventionally called "precision."

Imprecision should be distinguished from developmental mistakes: wrongly migrated neurons, incorrect connections, and the like. To use a computer analogy, minor rounding-off errors occur universally and are analogous to imprecision, but occasionally a binary digit is incorrectly transmitted, perhaps ruining a calculation, and this incorrect transmission is analogous to a developmental mistake. Thus, imprecision is a form of inaccuracy inherent within the limits of design, but mistakes are forms of gross fallibility.

Both imprecision and gross fallibility can plausibly be blamed on the insufficiency of genetic information, since either could be reduced by adding more information. It is universally accepted among information theorists that codes and languages can be made mistake-resistant by incorporating redundancy. However, since the amount of space available in any information system is limited, increased redundancy results in decreased precision. For example, π when written incorrectly in English, "three point oen four two," can be understood correctly even

though a typographical error has occurred. More precision could be gained, however, if those 24 spaces were filled with Arabic numerals; then π could be expressed to 23 significant digits, although any error would significantly change the meaning. There exists a trade-off; the more precisely a system is specified, using a given limited amount of information, the greater the danger of gross mistakes. The overall scheme by which genetic information is rationed out in organisms, therefore, must involve a compromise between two conflicting priorities: precision and the avoidance of gross mistakes.

17. Which of the following best expresses the main idea of the passage?

- (A) Although studies of isogenic organisms have shown that all organisms are subject to developmental variations, there is still scientific debate over the exact causes of these variations.
- (B) Because of limitations on the amount of information contained in the genes of organisms, developing nervous systems are subject to two basic kinds of error, the likelihood of one of which is reduced only when the likelihood of the other is increased.
- (C) The complexity of an organism's genetic information means that much of the unusual variation that occurs among organisms can best be explained as the result of developmental mistakes.
- (D) New findings about the nature of the genetic control of neural development support the work of some scientists who argue that the computer is an extremely useful model for understanding the nervous system.
- (E) The major discovery made by scientists studying the genetic control of neural development is that both imprecision and gross developmental error can be traced to specific types of mutations in specific genes.

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18. According to the passage, one of the reasons it has been assumed that there is an important random element in human neural development is that
- (A) genes cannot specify certain types of developmental processes as well as they can others
 - (B) the intricacy of the nervous system allows small developmental errors to occur without harmful effects
 - (C) the amount of information contained in the genes is less than the amount necessary to specify the location of the neurons
 - (D) the number of neurons in the human brain varies greatly from individual to individual
 - (E) it is theoretically impossible for an organism to protect itself completely from gross developmental mistakes
19. The author suggests which of the following about the findings of information theorists?
- (A) Their findings provocatively challenge the standard explanation of redundancy in genes.
 - (B) Their findings provide useful insights into understanding the rationing of genetic information.
 - (C) Their findings help to explain why imprecision can occur in neural development but not why gross mistakes can occur.
 - (D) Their findings suggest that genes may be able to specify neural development more accurately than had previously been thought.
 - (E) Their findings support the work of those who use computer operations as models for understanding genetic control.
20. According to the passage, of the following aspects of the optic neurons of isogenic Daphniae, which varies the most?
- (A) Size
 - (B) Connectivity
 - (C) Position
 - (D) Branching pattern
 - (E) Number of synapses
21. Which of the following best describes the organization of the first paragraph?
- (A) A specific case is presented, its details are analyzed, and a conclusion is drawn from it.
 - (B) A discovery is announced, its most significant application is discussed, and possibilities for the future are suggested.
 - (C) A generalization is made, specific situations in which it is applicable are noted, and problems with it are suggested.
 - (D) An observation is made, specifics are provided to support it, and a generalization is derived.
 - (E) A hypothesis is presented, its implications are clarified, and applications of it are discussed.
22. The author uses all of the following to clarify the distinction between imprecision and gross mistake in neural development EXCEPT
- (A) classification of borderline phenomena
 - (B) a description of the relationship between the phenomena denoted by each term
 - (C) specific examples of the phenomena denoted by each term
 - (D) an explanation of at least one of the key terms involved
 - (E) analogies to other types of phenomena
23. Which of the following can be inferred from the passage about the genetic information of Daphniae?
- I. There is probably some degree of redundancy in the information controlling neural development.
 - II. Most of the information for neural development stored in the genes is used to specify the positions of the optic neurons.
 - III. There is sufficient information to preclude the occurrence of gross mistakes during neural development.
- (A) I only
 - (B) II only
 - (C) III only
 - (D) I and II only
 - (E) II and III only

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Line
(5) In a recent study, David Cressy examines two central questions concerning English immigration to New England in the 1630's: what kinds of people immigrated and why? Using contemporary literary evidence, shipping lists, and customs records, Cressy finds that most adult immigrants were skilled in farming or crafts, were literate, and were organized in families. Each of these characteristics sharply distinguishes the 21,000 people who left for New England in the 1630's from most of the approximately 377,000 English people who had immigrated to America by 1700.

(10) (15) With respect to their reasons for immigrating, Cressy does not deny the frequently noted fact that some of the immigrants of the 1630's, most notably the organizers and clergy, advanced religious explanations for departure, but he finds that such explanations usually assumed primacy only in retrospect. When he moves beyond the principal actors, he finds that religious explanations were less frequently offered and he concludes that most people immigrated because they were recruited by promises of material improvement.

24. In the passage, the author is primarily concerned with
- (A) summarizing the findings of an investigation
 - (B) analyzing a method of argument
 - (C) evaluating a point of view
 - (D) hypothesizing about a set of circumstances
 - (E) establishing categories
25. According to the passage, Cressy would agree with which of the following statements about the organizers among the English immigrants to New England in the 1630's?
- I. Most of them were clergy.
 - II. Some of them offered a religious explanation for their immigration.
 - III. They did not offer any reasons for their immigration until some time after they had immigrated.
 - IV. They were more likely than the average immigrant to be motivated by material considerations.
- (A) I only
 - (B) II only
 - (C) II and III only
 - (D) I, III, and IV only
 - (E) II, III, and IV only

26. According to the passage, Cressy has made which of the following claims about what motivated English immigrants to go to New England in the 1630's?
- (A) They were motivated by religious considerations alone.
 - (B) They were motivated by economic considerations alone.
 - (C) They were motivated by religious and economic considerations equally.
 - (D) They were motivated more often by economic than by religious considerations.
 - (E) They were motivated more often by religious than by economic considerations.
27. The passage suggests that the majority of those English people who had immigrated to America by the late seventeenth century were
- (A) clergy
 - (B) young children
 - (C) organized in families
 - (D) skilled in crafts
 - (E) illiterate

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8. Popcorn kernels explode, or “pop,” when the moisture inside the kernel is heated and steam builds up pressure inside the kernel. Uniform moisture content in a batch of popcorn kernels ensures uniform popping time, which in turn ensures fewer unpopped kernels. In practice, the percentage of unpopped kernels in a batch can be reduced by sorting popcorn kernels by size.

Which of the following, if true, best helps explain why the percentage of unpopped kernels is lower when popcorn kernels are of uniform size?

- (A) The percentage of unpopped kernels can be reduced by increasing cooking time.
(B) All popcorn kernels, no matter what their size, will pop under proper conditions.
(C) Yellow popcorn kernels have more moisture content than do white or blue popcorn kernels.
(D) A popcorn kernel’s moisture content is fully determined by its size.
(E) Damaged kernels, another cause of unpopped kernels, have a lower moisture content than intact kernels.

9. Two percent of the ocean is coastal ocean—shallow coastal waters in which most fish live. The rest is deep ocean, where fewer fish live. Much of the garbage burned or dumped on land eventually is deposited in coastal ocean. To keep coastal ocean free of garbage, therefore, garbage should be dumped in the deep ocean.

Which of the following, if true, constitutes the strongest basis for criticizing the argument above?

- (A) Currents far below the ocean’s surface bring deep-ocean waters to the coastal ocean.
(B) Deep-ocean dumping would require a substantial change in the processing and packaging of waste.
(C) Hazardous industrial waste has increasingly been dumped illegally into coastal-ocean waters.
(D) There are at present no international agreements regulating dumping in the deep ocean.
(E) The few species of fish that inhabit the deep ocean are of no commercial value.

10. Unlike the lungs and the kidneys, the liver is an organ well suited for living-donor transplants to children because the portion of the liver which must be removed from a healthy adult to replace the diseased liver of a child will be regenerated in the healthy adult within a few months.

Which of the following, if true, provides the most additional support for the conclusion drawn above?

- (A) The success rate of liver transplants is slightly lower in children than in adults.
(B) In removing the portion of liver for transplant there is danger of causing damage to the spleen of the donor, and that could necessitate the removal of the spleen.
(C) There is less danger that a transplanted organ will be rejected when the organ donor is a close relative of the recipient.
(D) There are so few suitable donors that about one-half of the babies with liver disease born in the United States each year die before they can receive a liver transplant.
(E) Each lobe of the liver functions separately, and it is possible to extract a portion of one lobe without disrupting critical liver functions.

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23. Only in a social milieu in which many parties are scheduled for the same time do party hosts buy visually striking invitations in order to attract the invited guests to the parties. A business that produces visually striking party invitations is currently located in Los Angeles. Thus, it can be concluded that the schedule of parties in Los Angeles must be very crowded.

The argument above is properly drawn if the truth of which of the following is assumed?

- (A) There is also a business in Los Angeles that produces ordinary party invitations.
 - (B) Party guests can attend no more than one party per evening.
 - (C) At most parties, there are uninvited guests who add to the number of people in attendance.
 - (D) Many of the visually striking party invitations produced in Los Angeles are bought for parties in Los Angeles.
 - (E) Sending party invitations is a duty that hosts rarely delegate to others.
24. The town of Stavanger, Norway, was quiet and peaceful until the early 1960's, when Stavanger became Norway's center for offshore oil exploration. Between then and now, violent crime and vandalism in Stavanger have greatly increased. Clearly, these social problems are among the results of Stavanger's oil boom.
- Which of the following, if it occurred between the early 1960's and now, gives the strongest support to the argument above?
- (A) The people of Stavanger rarely regret that their town was chosen to be Norway's center for offshore oil exploration.
 - (B) Norwegian sociologists expressed grave concern about the increase in violent crime and vandalism in Stavanger.
 - (C) Violent crime and vandalism have remained low in Norwegian towns that had no oil boom.
 - (D) Nonviolent crime, drug addiction, and divorce in Stavanger increased approximately as much as violent crime and vandalism did.
 - (E) The oil boom necessitated the building of wider roads for the increased traffic in Stavanger.

25. Students can learn mathematics only by exploring it on their own, with generous room for trial and error. For what matters in the long run is not acquiring particular computational skills (since without constant use skills rapidly fade), but knowing how to find and use suitable mathematical tools whenever they become necessary.

If the position expressed above is correct, then each of the following can be true EXCEPT:

- (A) Mathematics teachers are often afraid that someone will ask a question that they cannot answer, and this insecurity frequently leads to authoritarianism in the classroom.
- (B) Prospective teachers should themselves learn mathematics as a process of constructing and interpreting patterns, of devising strategies for solving problems, and of discovering the beauties and applications of mathematics.
- (C) Political leaders must accept responsibility for coordinating a nationwide plan for all levels of instruction if mathematics education is to improve.
- (D) The most effective method for teaching students mathematics is for teachers to state the definitive rule for solving exercises of a given type and then to insist on rote practice in its proper application.
- (E) Most current teaching presents mathematics as established doctrine, stressing the production of right answers rather than the ability to communicate reasons.

SECTION 6

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Only by ignoring decades of mismanagement and inefficiency could investors conclude that a fresh infusion of cash would provide anything more than a ----- solution to the company's financial woes.
(A) fair
(B) temporary
(C) genuine
(D) realistic
(E) complete
2. Although the discovery of antibiotics led to great advances in clinical practice, it did not represent a ----- bacterial illness, for there are some bacteria that cannot be ----- treated with antibiotics.
(A) breakthrough in..consistently
(B) panacea for..effectively
(C) neglect of..efficiently
(D) reexamination of..conventionally
(E) resurgence of..entirely
3. A misconception frequently held by novice writers is that sentence structure mirrors thought: the more convoluted the structure, the more ----- the ideas.
(A) complicated
(B) inconsequential
(C) elementary
(D) fanciful
(E) blatant
4. Jones was unable to recognize the contradictions in his attitudes that were obvious to everyone else; even the hint of an untruth was ----- to him, but he ----- serious trouble by always cheating on his taxes.
(A) acceptable..risked
(B) exciting..averted
(C) repugnant..courted
(D) anathema..evaded
(E) tempting..hazarded
5. Even though the general's carefully qualified public statement could hardly be -----, some people took ----- it.
(A) respected..liberties with
(B) inoffensive..umbrage at
(C) faulted..exception to
(D) credited..potshots at
(E) dismissed..interest in
6. Though feminist in its implications, Yvonne Rainer's 1974 film ----- the filmmaker's active involvement in feminist politics.
(A) preserved
(B) portrayed
(C) encouraged
(D) renewed
(E) antedated
7. The chances that a species will ----- are reduced if any vital function is restricted to a single kind of organ; ----- by itself possesses an enormous survival advantage.
(A) degenerate..complexity
(B) expire..size
(C) disappear..variety
(D) flourish..symmetry
(E) persist..redundancy

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

[This passage was excerpted from an article published in 1975.]

Line (5) Is the literary critic like the poet, responding creatively, intuitively, subjectively to the written word as the poet responds to human experience? Or is the critic more like a scientist, following a series of demonstrable, verifiable steps, using an objective method of analysis?

(10) For the woman who is a practitioner of feminist literary criticism, the subjectivity *versus* objectivity, or critic-as-artist-or-scientist, debate has special significance; for her, the question is not only academic, but political as well, and her definition will court special risks whichever side of the issue it favors. If she defines feminist criticism as objective and scientific—a valid, verifiable, intellectual method that anyone, whether man or woman, can perform—the definition not only precludes the critic-as-artist approach, but may also impede accomplishment of the utilitarian political objectives of those who seek to change the academic establishment and its thinking, especially about sex roles. If she defines feminist criticism as creative and intuitive, privileged as art, then her work becomes vulnerable to the prejudices of stereotypic ideas about the ways in which women think, and will be dismissed by much of the academic establishment. Because of these prejudices, women who use an intuitive approach in their criticism may find themselves charged with inability to be analytical, to be objective, or to think critically. Whereas men may be free to claim the role of critic-as-artist, women run different professional risks when they choose intuition and private experience as critical method and defense.

(15) (20) (25) (30) These questions are political in the sense that the debate over them will inevitably be less an exploration of abstract matters in a spirit of disinterested inquiry than an academic power struggle in which the careers and professional fortunes of many women scholars—only now entering the academic profession in substantial numbers—will be at stake, and with them the chances for a distinctive contribution to humanistic understanding, a contribution that might be an important influence against sexism in our society.

(35) (40) (45) As long as the academic establishment continues to regard objective analysis as “masculine” and an intuitive approach as “feminine,” the theoretician must steer a delicate philosophical course between the two. If she wishes to construct a theory of feminist criticism, she would be well advised to place it within the framework of a general theory of the critical process that is neither purely objective nor purely intuitive. Her theory is then more likely to be compared and contrasted with other theories of criticism with some degree of dispassionate distance.

17. Which of the following titles best summarizes the content of the passage?

- (A) How Theories of Literary Criticism Can Best Be Used
- (B) Problems Confronting Women Who Are Feminist Literary Critics
- (C) A Historical Overview of Feminist Literary Criticism
- (D) A New Theory of Literary Criticism
- (E) Literary Criticism: Art or Science?

18. It can be inferred that the author believes which of the following about women who are literary critics?

- I. They can make a unique contribution to society.
 - II. They must develop a new theory of the critical process.
 - III. Their criticisms of literature should be entirely objective.
- (A) I only
 - (B) II only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

19. The author specifically mentions all of the following as difficulties that particularly affect women who are theoreticians of feminist literary criticism EXCEPT the

- (A) tendency of a predominantly male academic establishment to form preconceptions about women
- (B) limitations that are imposed when criticism is defined as objective and scientific
- (C) likelihood that the work of a woman theoretician who claims the privilege of art will be viewed with prejudice by some academics
- (D) inescapability of power struggles between women in the academic profession and the academic establishment
- (E) tendency of members of the academic establishment to treat all forms of feminist literary theory with hostility

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20. According to the author, the debate mentioned in the passage has special significance for the woman who is a theoretician of feminist literary criticism for which of the following reasons?
- (A) There are large numbers of capable women working within the academic establishment.
(B) There are a few powerful feminist critics who have been recognized by the academic establishment.
(C) Like other critics, most women who are literary critics define criticism as either scientific or artistic.
(D) Women who are literary critics face professional risks different from those faced by men who are literary critics.
(E) Women who are literary critics are more likely to participate in the debate than are men who are literary critics.
21. Which of the following is presented by the author in support of the suggestion that there is stereotypical thinking among members of the academic establishment?
- (A) A distinctively feminist contribution to humanistic understanding could work against the influence of sexism among members of the academic establishment.
(B) Women who define criticism as artistic may be seen by the academic establishment as being incapable of critical thinking.
(C) The debate over the role of the literary critic is often seen as a political one.
(D) Women scholars are only now entering academia in substantial numbers.
(E) The woman who is a critic is forced to construct a theory of literary criticism.
22. Which of the following is most likely to be one of the “utilitarian political objectives” mentioned by the author in line 16?
- (A) To forge a new theory of literary criticism
(B) To pursue truth in a disinterested manner
(C) To demonstrate that women are interested in literary criticism that can be viewed either subjectively or objectively
(D) To convince the academic establishment to revise the ways in which it assesses women scholars’ professional qualities
(E) To dissuade women who are literary critics from taking a subjective approach to literary criticism
23. It can be inferred that the author would define as “political” (line 30) questions that
- (A) are contested largely through contentions over power
(B) are primarily academic in nature and open to abstract analysis
(C) are not in themselves important
(D) cannot be resolved without extensive debate
(E) will be debated by both men and women

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[This passage was excerpted from an article published in 1979.]

Quantum mechanics is a highly successful theory: it supplies methods for accurately calculating the results of diverse experiments, especially with minute particles. The predictions of quantum mechanics, however, give only the probability of an event, not a deterministic statement of whether or not the event will occur.

Because of this probabilism, Einstein remained strongly dissatisfied with the theory throughout his life, though he did not maintain that quantum mechanics is wrong.

Rather, he held that it is incomplete: in quantum mechanics the motion of a particle must be described in terms of probabilities, he argued, only because some parameters that determine the motion have not been specified. If these hypothetical "hidden parameters" were known, a fully deterministic trajectory could be defined. Significantly, this hidden-parameter quantum theory leads to experimental predictions different from those of traditional quantum mechanics. Einstein's ideas have been tested by experiments performed since his death, and as most of these experiments support traditional quantum mechanics, Einstein's approach is almost certainly erroneous.

24. The author regards the idea that traditional quantum mechanics is incomplete with

- (A) approval
- (B) surprise
- (C) indifference
- (D) apprehension
- (E) skepticism

25. It can be inferred from the passage that the author's conclusion that Einstein's approach is "erroneous" (line 22) might have to be modified because

- (A) it is theoretically possible to generate plausible theories with hidden parameters within them
- (B) some experimental tests of Einstein's theory do not disconfirm the hidden-parameter theory of quantum mechanics
- (C) it is possible for a theory to have hidden parameters and yet be probabilistic
- (D) traditional quantum mechanics has not yet been used to analyze all of the phenomena to which it could be applied
- (E) there are too many possible hidden parameters to develop meaningful tests of hidden-parameter theories

26. According to the passage, Einstein posed objections to the

- (A) existence of hidden parameters in quantum theory
- (B) probabilistic nature of quantum mechanics
- (C) idea that quantum mechanics is incomplete
- (D) results of experiments testing quantum theory
- (E) importance accorded quantum mechanics in physics

27. The passage suggests that which of the following would have resulted if the experiments mentioned in lines 18-20 had not supported the predictions of traditional quantum mechanics?

- (A) Einstein, had he been alive, would have revised his approach to quantum mechanics.
- (B) Hidden-parameter theories would have been considered inaccurate descriptions of real-world phenomena.
- (C) A deterministic description of the motion of a particle might still be considered possible.
- (D) Quantum mechanics would have ceased to attract the attention of physicists.
- (E) Einstein, had he been alive, would have abandoned attempts to specify the hidden parameters that describe motion.

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TEST 13

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence that follows has one or two blanks, each blank indicating that something has been omitted. Following the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The availability of oxygen is an essential ----- for animal life, while carbon dioxide is equally ----- for plant life.

(A) choice..optional
(B) duplication..selective
(C) conversion..exchangeable
(D) condition..necessary
(E) luxury..harmful

2. Prudery actually draws attention to the vice it is supposed to -----; the very act that forbids speech or prohibits sight ----- what is hidden.

(A) condemn..distorts
(B) monitor..signals
(C) repress..dramatizes
(D) obviate..fosters
(E) divulge..conceals

3. After thirty years of television, people have become “speed watchers”; consequently, if the camera lingers, the interest of the audience -----.

(A) broadens (B) begins (C) varies
(D) flags (E) clears

4. Compared mathematically to smoking and driving, almost everything else seems relatively risk-free, ----- almost nothing seems worth regulating.

(A) yet (B) since (C) so
(D) even though (E) as long as

5. Ironically, Carver’s precision in sketching lives on the edge of despair ensures that his stories will sometimes be read too narrowly, much as Dickens’ social-reformer role once caused his broader concerns to be -----.

(A) ignored (B) reinforced (C) contradicted
(D) diminished (E) diversified

6. The demise of the rigorous academic curriculum in high school resulted, in part, from the progressive rhetoric that ----- the study of subjects previously thought ----- as part of school learning.

(A) advocated..necessary
(B) enhanced..indispensable
(C) restricted..impractical
(D) undermined..popular
(E) sanctioned..inappropriate

7. While some see in practical jokes a wish for mastery in miniature over a world that seems very -----, others believe that the jokes’ purpose is to disrupt, by reducing all transactions to -----.

(A) dubious..confusion
(B) disorderly..symmetry
(C) harmonious..dissonance
(D) unruly..chaos
(E) turbulent..uniformity

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Classical physics defines the vacuum as a state of absence: a vacuum is said to exist in a region of space if there is nothing in it. In the quantum field theories that describe the physics of elementary particles, the vacuum becomes somewhat more complicated. Even in empty space, particles can appear spontaneously as a result of fluctuations of the vacuum. For example, an electron and a positron, or antielectron, can be created out of the void. Particles created in this way have only a fleeting existence; they are annihilated almost as soon as they appear, and their presence can never be detected directly. They are called virtual particles in order to distinguish them from real particles, whose lifetimes are not constrained in the same way, and which can be detected. Thus it is still possible to define the vacuum as a space that has no real particles in it.

One might expect that the vacuum would always be the state of lowest possible energy for a given region of space. If an area is initially empty and a real particle is put into it, the total energy, it seems, should be raised by at least the energy equivalent of the mass of the added particle. A surprising result of some recent theoretical investigations is that this assumption is not invariably true. There are conditions under which the introduction of a real particle of finite mass into an empty region of space can reduce the total energy. If the reduction in energy is great enough, an electron and a positron will be spontaneously created. Under these conditions the electron and positron are not a result of vacuum fluctuations but are real particles, which exist indefinitely and can be detected. In other words, under these conditions the vacuum is an unstable state and can decay into a state of lower energy; i.e., one in which real particles are created.

The essential condition for the decay of the vacuum is the presence of an intense electric field. As a result of the decay of the vacuum, the space permeated by such a field can be said to acquire an electric charge, and it can be called a charged vacuum. The particles that materialize in the space make the charge manifest. An electric field of sufficient intensity to create a charged vacuum is likely to be found in only one place: in the immediate vicinity of a superheavy atomic nucleus, one with about twice as many protons as the heaviest natural nuclei known. A nucleus that large cannot be stable, but it might be possible to assemble one next to a vacuum for long enough to observe the decay of the vacuum. Experiments attempting to achieve this are now under way.

17. Which of the following titles best describes the passage as a whole?
 - (A) The Vacuum: Its Fluctuations and Decay
 - (B) The Vacuum: Its Creation and Instability
 - (C) The Vacuum: A State of Absence
 - (D) Particles That Materialize in the Vacuum
 - (E) Classical Physics and the Vacuum
18. According to the passage, the assumption that the introduction of a real particle into a vacuum raises the total energy of that region of space has been cast into doubt by which of the following?
 - (A) Findings from laboratory experiments
 - (B) Findings from observational field experiments
 - (C) Accidental observations made during other experiments
 - (D) Discovery of several erroneous propositions in accepted theories
 - (E) Predictions based on theoretical work
19. It can be inferred from the passage that scientists are currently making efforts to observe which of the following events?
 - (A) The decay of a vacuum in the presence of virtual particles
 - (B) The decay of a vacuum next to a superheavy atomic nucleus
 - (C) The creation of a superheavy atomic nucleus next to an intense electric field
 - (D) The creation of a virtual electron and a virtual positron as a result of fluctuations of a vacuum
 - (E) The creation of a charged vacuum in which only real electrons can be created in the vacuum's region of space

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20. Physicists' recent investigations of the decay of the vacuum, as described in the passage, most closely resemble which of the following hypothetical events in other disciplines?
- (A) On the basis of data gathered in a carefully controlled laboratory experiment, a chemist predicts and then demonstrates the physical properties of a newly synthesized polymer.
- (B) On the basis of manipulations of macroeconomic theory, an economist predicts that, contrary to accepted economic theory, inflation and unemployment will both decline under conditions of rapid economic growth.
- (C) On the basis of a rereading of the texts of Jane Austen's novels, a literary critic suggests that, contrary to accepted literary interpretations, Austen's plots were actually metaphors for political events in early nineteenth-century England.
- (D) On the basis of data gathered in carefully planned observations of several species of birds, a biologist proposes a modification in the accepted theory of interspecies competition.
- (E) On the basis of a study of observations incidentally recorded in ethnographers' descriptions of non-Western societies, an anthropologist proposes a new theory of kinship relations.
21. According to the passage, the author considers the reduction of energy in an empty region of space to which a real particle has been added to be
- (A) a well-known process
- (B) a frequent occurrence
- (C) a fleeting aberration
- (D) an unimportant event
- (E) an unexpected outcome
22. According to the passage, virtual particles differ from real particles in which of the following ways?
- I. Virtual particles have extremely short lifetimes.
II. Virtual particles are created in an intense electric field.
III. Virtual particles cannot be detected directly.
- (A) I only
(B) II only
(C) III only
(D) I and II only
(E) I and III only
23. The author's assertions concerning the conditions that lead to the decay of the vacuum would be most weakened if which of the following occurred?
- (A) Scientists created an electric field next to a vacuum, but found that the electric field was not intense enough to create a charged vacuum.
- (B) Scientists assembled a superheavy atomic nucleus next to a vacuum, but found that no virtual particles were created in the vacuum's region of space.
- (C) Scientists assembled a superheavy atomic nucleus next to a vacuum, but found that they could not then detect any real particles in the vacuum's region of space.
- (D) Scientists introduced a virtual electron and a virtual positron into a vacuum's region of space, but found that the vacuum did not then fluctuate.
- (E) Scientists introduced a real electron and a real positron into a vacuum's region of space, but found that the total energy of the space increased by the energy equivalent of the mass of the particles.

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Simone de Beauvoir's work greatly influenced Betty Friedan's—indeed, made it possible. Why, then, was it Friedan who became the prophet of women's emancipation in the United States? Political conditions, as well as a certain anti-intellectual bias, prepared Americans and the American media to better receive Friedan's deradicalized and highly pragmatic *The Feminine Mystique*, published in 1963, than Beauvoir's theoretical reading of women's situation in *The Second Sex*. In 1953 when *The Second Sex* first appeared in translation in the United States, the country had entered the silent, fearful fortress of the anticommunist McCarthy years (1950-1954), and Beauvoir was suspected of Marxist sympathies. Even *The Nation*, a generally liberal magazine, warned its readers against "certain political leanings" of the author. Open acknowledgement of the existence of women's oppression was too radical for the United States in the fifties, and Beauvoir's conclusion, that change in women's economic condition, though insufficient by itself, "remains the basic factor" in improving women's situation, was particularly unacceptable.

24. According to the passage, one difference between *The Feminine Mystique* and *The Second Sex* is that Friedan's book
- (A) rejects the idea that women are oppressed
 - (B) provides a primarily theoretical analysis of women's lives
 - (C) does not reflect the political beliefs of its author
 - (D) suggests that women's economic condition has no impact on their status
 - (E) concentrates on the practical aspects of the question of women's emancipation
25. The author quotes from *The Nation* most probably in order to
- (A) modify an earlier assertion
 - (B) point out a possible exception to her argument
 - (C) illustrate her central point
 - (D) clarify the meaning of a term
 - (E) cite an expert opinion

26. It can be inferred from the passage that which of the following is not a factor in the explanation of why *The Feminine Mystique* was received more positively in the United States than was *The Second Sex*?
- (A) By 1963 political conditions in the United States had changed.
 - (B) Friedan's book was less intellectual and abstract than Beauvoir's.
 - (C) Readers did not recognize the powerful influence of Beauvoir's book on Friedan's ideas.
 - (D) Friedan's approach to the issue of women's emancipation was less radical than Beauvoir's.
 - (E) American readers were more willing to consider the problem of the oppression of women in the sixties than they had been in the fifties.
27. According to the passage, Beauvoir's book asserted that the status of women
- (A) is the outcome of political oppression
 - (B) is inherently tied to their economic condition
 - (C) can be best improved under a communist government
 - (D) is a theoretical, rather than a pragmatic, issue
 - (E) is a critical area of discussion in Marxist economic theory

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8. Many farmers in the United States are turning away from synthetic fertilizers and pesticides, whose costs are rising rapidly, and choosing systems of organic farming designed to replenish nutrients in the soil. Studies indicate that although in some instances crop yields are lower in the years immediately after a farmer converts from a chemical to an organic system, the farmer's net income in each of those years is nevertheless likely to be higher.

Which of the following, if true, would help explain why the farmer's annual net income is likely to be higher following conversion to an organic system?

- (A) The most successful systems of organic farming are intended to ensure the continued productivity of farmland.
- (B) The amount of money the farmer loses by reducing crop yield is generally less than the amount the farmer saves in production costs by switching from chemical farming to an organic system.
- (C) Farmers for whom environmental concerns are paramount are willing to take financial losses to avoid synthetic fertilizers and pesticides.
- (D) By growing nitrogen-fixing plants alongside a cash crop over a period of years, a farmer can usually increase crop yield dramatically.
- (E) Many farmers who have purchased equipment used in chemical farming feel that they have irrevocably committed themselves to using synthetic fertilizers and pesticides.

9. For some years health authorities have believed that people with high blood pressure (hypertension) should restrict their salt intake. Recently scientists found in a large, well-designed study that those with chronic hypertension consume less salt than do their counterparts with normal blood pressure.

If it is true that a diet relatively high in salt is causally linked to the onset of hypertension, which of the following, if true, most plausibly accounts for the new findings?

- (A) Only a minority of those with hypertension have been properly diagnosed.
- (B) Chronic hypertension is not a serious problem in the population studied.
- (C) Most people with chronic hypertension have intentionally restricted their salt intake.
- (D) Hypertension occurs most frequently in those who have a family history of hypertension.
- (E) Excess salt intake is inherently dangerous to health.

- *10. A successful defense against attack by ballistic missiles would have to be controlled by a large-scale computer system.

A defense against attack by ballistic missiles, to be successful, would have to work on first use, and a full preliminary test would be impossible.

Despite careful planning, every large-scale computer system has on use proved to have flaws that in some situations would cause serious failure.

If the statements above are true, which of the following conclusions is best supported by them?

- (A) If care is taken in planning the computer system to be used for defense against attack by ballistic missiles, there is a high probability that the defense system will be successful if and when it is needed.
- (B) Methods for reducing errors in constructing large-scale computer systems will not be found.
- (C) A defense against ballistic missile attack will not work successfully when it is first called on.
- (D) Some means for control other than a large-scale computer system will have to be found for a system for defense against ballistic missiles.
- (E) A defense against attack by ballistic missiles cannot be assured of success the first time it is used.

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24. A steady decline in annual movie-ticket sales is about to begin. More than half of the tickets sold last year were sold to the age group under twenty-five years of age, representing twenty-seven percent of the population. However, the number of individuals under twenty-five will steadily decline during the next decade.

Which of the following, if true, casts most doubt on the prediction above regarding future movie-ticket sales?

- (A) Medical advances have lowered the mortality rates for those who are forty to sixty years of age.
- (B) Many people gradually lose interest in going to the movies after they reach twenty-five years of age.
- (C) The number of movie theaters has been increasing, and this trend is expected to continue during the next ten years.
- (D) Movie-ticket sales tend to increase as the size of the work force increases, and the size of the work force will increase annually during the next decade.
- (E) Experts agree that people under twenty-five years of age will continue to account for more than half of the total number of tickets sold in each of the next ten years.

25. Any lender about to make a loan wishes to know the real rate of interest; i.e., the contractual rate of interest less the rate of inflation. But what rate of inflation to use, past or expected? Past inflation is the better choice, because we have specific firm figures for it so that the real rate of interest will also emerge as a specific figure.

Which of the following, if true, is the strongest point that an opponent of the position above might make in arguing that the rate of expected inflation is the proper figure to use?

- (A) Since the contractual interest is future income to a prospective lender, it is more appropriate to adjust that income in terms of inflation expected for the future.
- (B) Since estimating the rate of expected inflation presupposes careful economic analysis, lenders might derive coincidental benefits from doing such an estimate.
- (C) The rate of expected inflation will differ little from the rate of past inflation when inflation is steady.
- (D) No official rate of past inflation is computed for any period shorter than a month.
- (E) The official rate of past inflation is a figure that depends on what commodities, in what proportions, determine the official price index.

SECTION 4
Time — 30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Aspartame, a new artificial sugar substitute, is only ----- replacement for saccharin because, unlike saccharin, it breaks down and loses its sweetening characteristics at high temperatures, making it ----- for baking.
(A) an interim. .ideal
(B) an apparent. .excellent
(C) a potential. .versatile
(D) a significant. .problematic
(E) a partial. .unsuitable
2. Trapped thousands of years ago in Antarctic ice, recently discovered air bubbles are ----- time capsules filled with information for scientists who chart the history of the atmosphere.
(A) inconsequential (B) broken (C) veritable
(D) resplendent (E) impenetrable
3. In the days before the mass marketing of books, censorship was ----- source of -----, which helped the sale of the book and inspired Ralph Waldo Emerson to remark: "Every burned book enlightens the world."
(A) a respected. .opinion
(B) a constant. .guidance
(C) a prime. .publicity
(D) an unnoticed. .opposition
(E) an unpromising. .criticism
4. It was not only the ----- of geologists that ----- earlier development of the revolutionary idea that the Earth's continents were moving plates; classical physicists, who could not then explain the mechanism, had declared continental movement impossible.
(A) indecisiveness. .challenged
(B) radicalism. .deterred
(C) conservatism. .hindered
(D) assumptions. .hastened
(E) resistance. .mandated
5. Although often extremely critical of the medical profession as a whole, people are rarely willing to treat their personal doctors with equal -----.
(A) impetuosity (B) sarcasm (C) mockery
(D) contempt (E) condescension
6. Aalto, like other modernists, believed that form follows function; consequently, his furniture designs asserted the ----- of human needs, and the furniture's form was ----- human use.
(A) universality. .refined by
(B) importance. .relegated to
(C) rationale. .emphasized by
(D) primacy. .determined by
(E) variability. .reflected in
7. A ----- acceptance of contemporary forms of social behavior has misled a few into believing that values in conflict with the present age are for all practical purposes -----.
(A) casual. .reliable
(B) superficial. .trenchant
(C) complacent. .superseded
(D) cautious. .redemptive
(E) plaintive. .redundant

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

One of the questions of interest in the study of the evolution of spiders is whether the weaving of orb webs evolved only once or several times. About half the 35,000 known kinds of spiders make webs; a third of the web weavers make orb webs. Since most orb weavers belong either to the Araneidae or the Uloboridae families, the origin of the orb web can be determined only by ascertaining whether the families are related.

Recent taxonomic analysis of individuals from both families indicates that the families evolved from different ancestors, thereby contradicting Wiegle's theory. This theory postulates that the families must be related, based on the assumption that complex behavior, such as web building, could evolve only once. According to Kullman, web structure is the only characteristic that suggests a relationship between families. The families differ in appearance, structure of body hair, and arrangement of eyes. Only Uloborids lack venom glands. Further identification and study of characteristic features will undoubtedly answer the question of the evolution of the orb web.

17. The primary purpose of the passage is to

- (A) settle the question of whether orb webs evolved once or more than once
- (B) describe scientific speculation concerning an issue related to the evolution of orb webs
- (C) analyze the differences between the characteristic features of spiders in the Araneidae and Uloboridae families
- (D) question the methods used by earlier investigators of the habits of spiders
- (E) demonstrate that Araneidae spiders are not related to Uloboridae spiders

18. It can be inferred from the passage that all orb-weaving spiders belong to types of spiders that

- (A) lack venom glands
- (B) are included either in the Uloboridae or Araneidae families
- (C) share few characteristic features with other spider types
- (D) comprise less than a third of all known types of spiders
- (E) are more recently evolved than other types of spiders

19. According to the passage, members of the Araneidae family can be distinguished from members of the Uloboridae family by all of the following EXCEPT

- (A) the presence of venom glands
- (B) the type of web they spin
- (C) the structure of their body hair
- (D) the arrangement of their eyes
- (E) their appearance

20. Which of the following statements, if true, most weakens Wiegle's theory that complex behavior could evolve only once?

- (A) Horses, introduced to the New World by the Spaniards, thrived under diverse climatic conditions.
- (B) Plants of the Palmaceae family, descendants of a common ancestor, evolved unique seed forms even though the plants occupy similar habitats throughout the world.
- (C) All mammals are descended from a small, rodentlike animal whose physical characteristics in some form are found in all its descendants.
- (D) Plants in the Cactaceae and Euphorbiaceae families, although they often look alike and have developed similar mechanisms to meet the rigors of the desert, evolved independently.
- (E) The Cuban anole, which was recently introduced in the Florida wilds, is quickly replacing the native Florida chameleon because the anole has no competitors.

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“Popular art” has a number of meanings, impossible to define with any precision, which range from folklore to junk. The poles are clear enough, but the middle tends to blur. The Hollywood Western of the 1930’s, for example, has elements of folklore, but is closer to junk than to high art or folk art. There can be great trash, just as there is bad high art. The musicals of George Gershwin are great popular art, never aspiring to high art. Schubert and Brahms, however, used elements of popular music—folk themes—in works clearly intended as high art. The case of Verdi is a different one: he took a popular genre—bourgeois melodrama set to music (an accurate definition of nineteenth-century opera)—and, without altering its fundamental nature, transmuted it into high art. This remains one of the greatest achievements in music, and one that cannot be fully appreciated without recognizing the essential trashiness of the genre.

As an example of such a transmutation, consider what Verdi made of the typical political elements of nineteenth-century opera. Generally in the plots of these operas, a hero or heroine—usually portrayed only as an individual, unfettered by class—is caught between the immoral corruption of the aristocracy and the doctrinaire rigidity or secret greed of the leaders of the proletariat. Verdi transforms this naïve and unlikely formulation with music of extraordinary energy and rhythmic vitality, music more subtle than it seems at first hearing. There are scenes and arias that still sound like calls to arms and were clearly understood as such when they were first performed. Such pieces lend an immediacy to the otherwise veiled political message of these operas and call up feelings beyond those of the opera itself.

Or consider Verdi’s treatment of character. Before Verdi, there were rarely any characters at all in musical drama, only a series of situations which allowed the singers to express a series of emotional states. Any attempt to find coherent psychological portrayal in these operas is misplaced ingenuity. The only coherence was the singer’s vocal technique: when the cast changed, new arias were almost always substituted, generally adapted from other operas. Verdi’s characters, on the other hand, have genuine consistency and integrity, even if, in many cases, the consistency is that of pasteboard melodrama. The integrity of the character is achieved through the music: once he had become established, Verdi did not rewrite his music for different singers or countenance alterations or substitutions of somebody else’s arias in one of his operas, as every eighteenth-century composer had done. When he revised an opera, it was only for dramatic economy and effectiveness.

21. The author refers to Schubert and Brahms in order to suggest
 - (A) that their achievements are no less substantial than those of Verdi
 - (B) that their works are examples of great trash
 - (C) the extent to which Schubert and Brahms influenced the later compositions of Verdi
 - (D) a contrast between the conventions of nineteenth-century opera and those of other musical forms
 - (E) that popular music could be employed in compositions intended as high art
22. According to the passage, the immediacy of the political message in Verdi’s operas stems from the
 - (A) vitality and subtlety of the music
 - (B) audience’s familiarity with earlier operas
 - (C) portrayal of heightened emotional states
 - (D) individual talents of the singers
 - (E) verisimilitude of the characters
23. According to the passage, all of the following characterize musical drama before Verdi EXCEPT
 - (A) arias tailored to a particular singer’s ability
 - (B) adaptation of music from other operas
 - (C) psychological inconsistency in the portrayal of characters
 - (D) expression of emotional states in a series of dramatic situations
 - (E) music used for the purpose of defining a character

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24. It can be inferred that the author regards Verdi's revisions to his operas with
- (A) regret that the original music and texts were altered
 - (B) concern that many of the revisions altered the plots of the original work
 - (C) approval for the intentions that motivated the revisions
 - (D) puzzlement, since the revisions seem largely insignificant
 - (E) enthusiasm, since the revisions were aimed at reducing the conventionality of the operas' plots
25. According to the passage, one of Verdi's achievements within the framework of nineteenth-century opera and its conventions was to
- (A) limit the extent to which singers influenced the musical composition and performance of his operas
 - (B) use his operas primarily as forums to protest both the moral corruption and dogmatic rigidity of the political leaders of his time
 - (C) portray psychologically complex characters shaped by the political environment surrounding them
 - (D) incorporate elements of folklore into both the music and plots of his operas
 - (E) introduce political elements into an art form that had traditionally avoided political content
26. Which of the following best describes the relationship of the first paragraph of the passage to the passage as a whole?
- (A) It provides a group of specific examples from which generalizations are drawn later in the passage.
 - (B) It leads to an assertion that is supported by examples later in the passage.
 - (C) It defines terms and relationships that are challenged in an argument later in the passage.
 - (D) It briefly compares and contrasts several achievements that are examined in detail later in the passage.
 - (E) It explains a method of judging a work of art, a method that is used later in the passage.
27. It can be inferred that the author regards the independence from social class of the heroes and heroines of nineteenth-century opera as
- (A) an idealized but fundamentally accurate portrayal of bourgeois life
 - (B) a plot convention with no real connection to political reality
 - (C) a plot refinement unique to Verdi
 - (D) a symbolic representation of the position of the bourgeoisie relative to the aristocracy and the proletariat
 - (E) a convention largely seen as irrelevant by audiences

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5. In a recent study on the connection between brain abnormalities and violent behavior, the researcher examined more than three hundred people who had engaged in unusually violent behavior toward friends and family members. In most of the people studied, the researcher found clues of brain abnormalities, including evidence of past brain injury and physical abnormality. The researcher concluded that evidence of brain abnormalities could be used to predict violent behavior.

Which of the following, if true, would most seriously weaken the researcher's conclusion?

- (A) The incidence of brain abnormalities in the general population is as high as that in the group examined.
- (B) The brain abnormalities discovered in those studied are of two distinct kinds.
- (C) A wide variety of violent actions were exhibited by those studied.
- (D) Those studied in the experiment acted violently toward strangers as well as toward people they knew.
- (E) The study drew its subjects from a large geographical area.

6. Why can human beings outlast many faster four-legged animals when running long distances?

Perhaps because early humans evolved as hunters on the hot African savannas. Humans developed the ability to release heat by sweating, but most mammals must pant, a function hard to regulate while running. Also, four-legged animals must adopt a pace that lets them breathe once in mid-stride; otherwise, the impact of the front legs hitting the ground will prevent deep inhalation. Humans can vary the number of breaths per stride, set a pace unsuited to the prey, and so eventually exhaust it.

The author's explanation of why human beings have evolved as superior distance runners would be most weakened if it were shown that

- (A) early humans typically hunted animals that were less well adapted than humans for long-distance running
- (B) early humans were only one of a number of species that hunted prey on the African savannas
- (C) early humans hunted mainly in groups by sneaking up on prey and trapping it within a circle
- (D) hunting was just as essential for later humans in colder climates as it was for early humans on the African savannas
- (E) human beings of today have retained the ability to run long distances but no longer hunt by chasing prey

7. The government officials of a nation share its citizens' understandings regarding the rules that governments are obligated to honor in their actions. Thus, when a nation deliberately ignores international law, the attitudes of even its government officials will become less favorable toward their government.

The argument above assumes which of the following?

- (A) People's understandings of governmental obligations change from time to time.
- (B) The citizens of a nation will respond favorably to the nation's attempts to extend its international power by legal means.
- (C) Some officials of totalitarian governments are insensitive to the rules embodied in international law.
- (D) Each nation's citizens believe that international laws are among the rules by which governments ought to operate.
- (E) Elected government officials are more likely to doubt the wisdom of their own government's actions than are appointed government officials.

GO ON TO THE NEXT PAGE.

24. Researchers compared 42 average-weight and 47 obese infants, aged 7 to 9 months, with respect to current daily nutrient intake, ratio of formula or breast milk to solids in the diet, and maternal reliance on external feeding cues, such as time of day. Mothers completed a three-day food record at home before answering questions on current feeding practices. The researchers concluded from all of these data that, contrary to popular belief, the feeding practices of mothers of obese babies do not contribute significantly to their babies' obesity.

Which of the following could be an assumption on which the researchers relied in drawing their conclusion?

- (A) Babies over 9 months are less likely to be obese than are babies under 9 months because babies over 9 months eat less frequently than do babies under 9 months.
- (B) In the months before the study, the feeding practices of the mothers in the study did not differ significantly from their feeding practices at the time of the study.
- (C) Babies gain weight at a slower rate between the ages of 7 and 9 months than they do between the ages of 4 and 6 months.
- (D) Obesity is genetically rather than environmentally determined.
- (E) Breast-fed babies are more likely to be obese than are formula-fed babies.

25. Ironically, people who use aspartame as a sweetener to reduce their caloric intake could wind up defeating their purpose, since studies show that high levels of aspartame may trigger a craving for carbohydrates by depleting the brain of a chemical that registers carbohydrate satiety.

Which of the following conclusions can most properly be drawn if the statements above are true?

- (A) Aspartame can be more hazardous than carbohydrates to people's health.
- (B) People who do not use aspartame are not likely to develop a craving for carbohydrates.
- (C) The caloric content of foods that are high in carbohydrates is significant.
- (D) People tend to prefer sweet foods to those high in carbohydrates.
- (E) Food products that contain aspartame are typically low in carbohydrates.

TEST 14

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Psychology has slowly evolved into an ----- scientific discipline that now functions autonomously with the same privileges and responsibilities as other sciences.
(A) independent (B) unusual
(C) outmoded (D) uncontrolled
(E) inactive
2. A major goal of law, to deter potential criminals by punishing wrongdoers, is not served when the penalty is so seldom invoked that it ----- to be a ----- threat.
(A) tends.. .serious
(B) appears.. .real
(C) ceases.. .credible
(D) fails.. .deceptive
(E) seems.. .coercive
3. When people are happy, they tend to give ----- interpretations of events they witness: the eye of the beholder is ----- by the emotions of the beholder.
(A) charitable.. .colored
(B) elaborate.. .disquieted
(C) conscientious.. .deceived
(D) vague.. .sharpened
(E) coherent.. .confused
4. Even those who disagreed with Carmen's views rarely faulted her for expressing them, for the positions she took were as ----- as they were controversial.
(A) complicated (B) political
(C) subjective (D) commonplace
(E) thoughtful
5. New research on technology and public policy focuses on how seemingly ----- design features, generally overlooked in most analyses of public works projects or industrial machinery, actually ----- social choices of profound significance.
(A) insignificant.. .mask
(B) inexpensive.. .produce
(C) innovative.. .represent
(D) ingenious.. .permit
(E) inopportune.. .hasten
6. Paradoxically, Robinson's excessive denials of the worth of early works of science fiction suggest that she has become quite ----- them.
(A) reflective about (B) enamored of
(C) skeptical of (D) encouraged by
(E) offended by
7. Cézanne's delicate watercolor sketches often served as ----- of a subject, a way of gathering fuller knowledge before the artist's final engagement of the subject in an oil painting.
(A) an abstraction
(B) an enhancement
(C) a synthesis
(D) a reconnaissance
(E) a transcription

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Ragtime is a musical form that synthesizes folk melodies and musical techniques into a brief quadrille-like structure, designed to be played—exactly as written—on the piano. A strong analogy exists between European composers like Ralph Vaughan Williams, Edvard Grieg, and Anton Dvořák who combined folk tunes and their own original materials in larger compositions and the pioneer ragtime composers in the United States. Composers like Scott Joplin and James Scott were in a sense collectors or musicologists, collecting dance and folk music in Black communities and consciously shaping it into brief suites or anthologies called piano rags.

(15) It has sometimes been charged that ragtime is mechanical. For instance, Wilfred Mellers comments, “rags were transferred to the pianola roll and, even if not played by a machine, should be played like a machine, with meticulous precision.” However, there is no reason to assume that ragtime is inherently mechanical simply because commercial manufacturers applied a mechanical recording method to ragtime, the only way to record pianos at that date. Ragtime’s is not a mechanical precision, and it is not precision limited to the style of performance. It arises from ragtime’s following a well-defined form and obeying simple rules within that form.

(20) The classic formula for the piano rag disposes three to five themes in sixteen-bar strains, often organized with repeats. The rag opens with a bright, memorable strain or theme, followed by a similar theme, leading to a trio of marked lyrical character, with the structure concluded by a lyrical strain that parallels the rhythmic developments of the earlier themes. The aim of the structure is to rise from one theme to another in a stair-step manner, ending on a note of triumph or exhilaration.

(25) (30) Typically, each strain is divided into two 8-bar segments that are essentially alike, so the rhythmic-melodic unit of ragtime is only eight bars of 2/4 measure. Therefore, themes must be brief with clear, sharp melodic figures.

(35) (40) Not concerned with development of musical themes, the ragtime composer instead sets a theme down intact, in finished form, and links it to various related themes. Tension in ragtime compositions arises from a polarity between two basic ingredients: a continuous bass—called by jazz musicians a boom-chick bass—in the pianist’s left hand, and its melodic, syncopated counter-part in the right hand.

(45) (50) Ragtime remains distinct from jazz both as an instrumental style and as a genre. Ragtime style stresses a pattern of repeated rhythms, not the constant inventions and variations of jazz. As a genre, ragtime requires strict attention to structure, not inventiveness or virtuosity. It exists as a tradition, a set of conventions, a body of written scores, separate from the individual players associated with it. In this sense ragtime is more akin to folk music of the nineteenth century than to jazz.

17. Which of the following best describes the main purpose of the passage?
- (A) To contrast ragtime music and jazz
 - (B) To acknowledge and counter significant adverse criticisms of ragtime music
 - (C) To define ragtime music as an art form and describe its structural characteristics
 - (D) To review the history of ragtime music and analyze ragtime’s effect on listeners
 - (E) To explore the similarities between ragtime music and certain European musical compositions
18. According to the passage, each of the following is a characteristic of ragtime compositions that follow the classic ragtime formula EXCEPT
- (A) syncopation
 - (B) well-defined melodic figures
 - (C) rising rhythmic-melodic intensity
 - (D) full development of musical themes
 - (E) a bass line distinct from the melodic line

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19. According to the passage, Ralph Vaughan Williams, Anton Dvořák, and Scott Joplin are similar in that they all
- (A) conducted research into musicological history
 - (B) wrote original compositions based on folk tunes
 - (C) collected and recorded abbreviated piano suites
 - (D) created intricate sonata-like musical structures
 - (E) explored the relations between Black music and continental folk music
20. The author rejects the argument that ragtime is a mechanical music because that argument
- (A) overlooks the precision required of the ragtime player
 - (B) does not accurately describe the sound of ragtime pianola music
 - (C) confuses the means of recording and the essential character of the music
 - (D) exaggerates the influence of the performance style of professional ragtime players on the reputation of the genre
 - (E) improperly identifies commercial ragtime music with the subtler classic ragtime style
21. It can be inferred that the author of the passage believes that the most important feature of ragtime music is its
- (A) commercial success
 - (B) formal structure
 - (C) emotional range
 - (D) improvisational opportunities
 - (E) role as a forerunner of jazz
22. It can be inferred from the passage that the essential nature of ragtime has been obscured by commentaries based on
- (A) the way ragtime music was first recorded
 - (B) interpretations of ragtime by jazz musicians
 - (C) the dance fashions that were contemporary with ragtime
 - (D) early reviewers' accounts of characteristic structure
 - (E) the musical sources used by Scott Joplin and James Scott
23. Which of the following is most nearly analogous in source and artistic character to a ragtime composition as described in the passage?
- (A) Symphonic music derived from complex jazz motifs
 - (B) An experimental novel based on well-known cartoon characters
 - (C) A dramatic production in which actors invent scenes and improvise lines
 - (D) A ballet whose disciplined choreography is based on folk-dance steps
 - (E) A painting whose abstract shapes evoke familiar objects in a natural landscape

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*Line
(5)*

Echolocating bats emit sounds in patterns—characteristic of each species—that contain both frequency-modulated (FM) and constant-frequency (CF) signals. The broadband FM signals and the narrowband CF signals travel out to a target, reflect from it, and return to the hunting bat. In this process of transmission and reflection, the sounds are changed, and the changes in the echoes enable the bat to perceive features of the target.

(10)

The FM signals report information about target characteristics that modify the timing and the fine frequency structure, or spectrum, of echoes—for example, the target's size, shape, texture, surface structure, and direction in space. Because of their narrow bandwidth, CF signals portray only the target's presence and, in the case of some bat species, its motion relative to the bat's. Responding to changes in the CF echo's frequency, bats of some species correct in flight for the direction and velocity of their moving prey.

(15)

24. According to the passage, the information provided to the bat by CF echoes differs from that provided by FM echoes in which of the following ways?

- (A) Only CF echoes alert the bat to moving targets.
- (B) Only CF echoes identify the range of widely spaced targets.
- (C) Only CF echoes report the target's presence to the bat.
- (D) In some species, CF echoes enable the bat to judge whether it is closing in on its target.
- (E) In some species, CF echoes enable the bat to discriminate the size of its target and the direction in which the target is moving.

25. According to the passage, the configuration of the target is reported to the echolocating bat by changes in the

- (A) echo spectrum of CF signals
- (B) echo spectrum of FM signals
- (C) direction and velocity of the FM echoes
- (D) delay between transmission and reflection of the CF signals
- (E) relative frequencies of the FM and the CF echoes

26. The author presents the information concerning bat sonar in a manner that could be best described as

- (A) argumentative (B) commendatory
- (C) critical (D) disbelieving (E) objective

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

- (A) A fact is stated, a process is outlined, and specific details of the process are described.
- (B) A fact is stated, and examples suggesting that a distinction needs correction are considered.
- (C) A fact is stated, a theory is presented to explain that fact, and additional facts are introduced to validate the theory.
- (D) A fact is stated, and two theories are compared in light of their explanations of this fact.
- (E) A fact is stated, a process is described, and examples of still another process are illustrated in detail.

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7. In a study of more than 8,000 people using ten beaches on two of the Great Lakes, ecologists from the University of Toronto determined that the rate of respiratory and gastrointestinal illness among people who had been swimming was 69.6 per 1,000, whereas the respiratory and gastrointestinal illness rate among those who had not been swimming was only 29.5 per 1,000.

Which of the following conclusions can be most properly drawn from the data above?

- (A) People tend to underestimate the risks of swimming in these lakes.
- (B) Respiratory and gastrointestinal illnesses occur at a higher rate as a result of swimming in either of these lakes than they do as a result of swimming in any other lake.
- (C) Illnesses of kinds other than respiratory and gastrointestinal are not likely to be associated with swimming in either of these lakes.
- (D) The association between swimming in these lakes and respiratory and gastrointestinal illness is some evidence for a causal relationship between them.
- (E) A large percentage of the people who swim in these lakes are immune to the diseases that swimming may cause.

8. The story of Robinson Crusoe's adventures on an uninhabited island is no longer as popular as it once was, nor does it inspire modern versions in popular fiction. This change in the reading public's taste has occurred because it is no longer easy to believe that undiscovered, uninhabited islands still exist.

The author's reasoning about the decreased popularity of Robinson Crusoe-like adventures in popular fiction is based on which of the following assumptions?

- (A) Readers of popular fiction no longer wish to exchange their current lives for lives freed from the demands made on them by other people.
- (B) Readers of popular fiction prefer settings that they can readily accept as plausible contemporary settings.
- (C) The most satisfying type of popular fiction is that which enables the reader to participate vicariously in another person's adventures.
- (D) As a result of media coverage, more people are acquainted with foreign locales today than at any time in the past.
- (E) Readers of popular fiction are found among people with diverse interests, with the result that no single type of fiction appeals to all.

9. Substances suspected of causing cancer, if carefully administered to experimental animals in quantities in which those substances are ordinarily present in the environment, are virtually guaranteed not to produce cancer at rates significantly above the chance level. The most economical procedure for obtaining informative data is to administer vastly increased amounts of the substance being tested.

The 'economical procedure' described above will not be an effective one if which of the following is true?

- (A) Cancer data on experimental animals yield accurate estimates of the risk of cancer for human beings.
- (B) Experimental animals will often develop cancer in response to receiving excessive quantities of a substance, regardless of the specific properties of the substance.
- (C) When more of a possibly cancer-causing substance is administered to experimental animals, fewer animals are needed for significant data to be obtained.
- (D) Among experimental animals, the chance level for many types of cancer is virtually zero.
- (E) Substances will often be tested in amounts greater than necessary to obtain informative data.

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Questions 23-24

How does a building contractor most readily prove compliance with the building codes governing new construction? By using those established technologies that the authors of the codes had in mind when setting specifications. This, unfortunately, means that there will never be any significant technological innovation within the industry.

23. The argument above depends on the assumption that, in choosing the technologies to use in new construction, building contractors
- (A) are always more concerned to avoid difficulties in proving compliance with the relevant codes than to be innovative
 - (B) are always concerned to exceed the official specifications by a wide margin in order to forestall challenges
 - (C) pay little or no attention to the total construction costs entailed by different technologies
 - (D) consult directly with the authors of the relevant codes in order to avoid using an unproven technology
 - (E) are able to foresee any changes the relevant codes may undergo before the completion of a new project
24. Which of the following, if true, casts the most serious doubt on the conclusion above?
- (A) Among the authors of codes governing new construction are people who were formerly building contractors.
 - (B) The authors of codes governing new construction are under pressure to set rigorous specifications.
 - (C) What are now regarded as established technologies were once so innovative that the authors of the codes then applicable could not have foreseen them.
 - (D) Noncompliance with the codes governing new construction can prove extremely costly to the building contractor in charge of the project.
 - (E) The established technologies of one country's building industry can be very different from those of another's.

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* 25. X: When a rare but serious industrial accident occurs, people respond by believing that such accidents are becoming more frequent. This belief is irrational. After all, being dealt four aces in a hand of poker, a rare event, hardly increases one's chances of being dealt four aces in a future hand.

Y: To the contrary, the belief is rational because it results in people's sensing a danger to themselves not previously sensed and taking precautionary actions to prevent similar accidents in the future.

Y's attempt to counter X's claim is best described by which of the following?

- (A) It questions the aptness of the analogy drawn by X.
- (B) It makes apparent X's failure to consider how people vary in their responses to a serious accident.
- (C) It shifts the basis for judging rationality to considerations of utility.
- (D) It offers an alternative explanation of why people form incorrect beliefs.
- (E) It challenges X's assumption that the occurrence of a single event is sufficient to change a belief.

SECTION 4
Time—30 minutes
25 Questions

Directions: Each question or group of questions is based on a passage or set of conditions. In answering some of the questions, it may be useful to draw a rough diagram. For each question, select the best answer choice given.

Questions 1-4

A manager who has exactly four projects—F, G, H, and I—to undertake in a given month has made the following determinations:

F has priority over G.
H has priority over I.

If one project has priority over another, the project with priority must be started earlier than the other one.

1. Given only the determinations above, each of the following is a possible sequence in which the four projects could be started EXCEPT

(A) F, G, H, I
(B) F, H, G, I
(C) F, H, I, G
(D) H, F, I, G
(E) H, G, F, I

2. If each of the projects takes equally long to complete, it must be true that

(A) F is completed before H is completed
(B) F is completed before I is completed
(C) G is completed before H is completed
(D) H is completed before G is completed
(E) H is completed before I is completed

3. There would be exactly one order in which the four projects would have to be started if it were determined that

(A) F has priority over H
(B) F has priority over I
(C) H has priority over G
(D) I has priority over F
(E) I has priority over G

4. Which of the following pairs of additional determinations would NOT conflict with the priorities initially determined?

(A) F has priority over H, and I has priority over F.
(B) F has priority over I, and H has priority over G.
(C) G has priority over H, and H has priority over F.
(D) G has priority over H, and I has priority over F.
(E) G has priority over I, and I has priority over F.

5. Employee Complaint: There are not enough parking spaces in the employee parking lot to accommodate all the people who work here.

Employer's Response: There is no truth to the complaint. No one who gets to work on time has trouble finding a parking space. Only if you are late to work are you unlikely to be able to find a space.

Which of the following, if true, gives the reason why the employer's response fails to address the substance of the issue raised in the complaint?

- (A) Each employee does not drive his or her own car to work.
(B) The employer is not obligated to provide parking spaces for all employees.
(C) On days when all employees arrived at work on time, there would be insufficient parking spaces.
(D) On days when a large number of employees were late to work, many of the latecomers would be able to find parking spaces.
(E) The number of employees who come to work each day is not always the same.

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6. A novel by the deceased author Virginia Woolf that, in its manuscript form, was 48 chapters long and contained 200,000 words is being edited and reduced to 30 chapters and 70,000 words. Every word in the book will be Woolf's own, and the chapters will appear in the order in which she wrote them. The published result will therefore be an authentic Virginia Woolf novel.
- The claim that the new work is an authentic Virginia Woolf novel will be most damaged if which of the following is true?
- (A) A portion of the manuscript material that editors omitted from the published novel is almost identical to material that Virginia Woolf published in a nonfiction book during her lifetime.
- (B) Critics have argued that Virginia Woolf's writing style in the period during which she wrote this manuscript sometimes lacks conciseness.
- (C) An authentic novel is characterized by its author's decisions about what should be included in it and what sort of emphasis should be given to what is included.
- (D) An authentic novel contains dialogue, characterization, and narrative structures that are recognizably like those found in the author's other major writings, if such writings exist.
- (E) Not many of the novels that Virginia Woolf published during her lifetime contain as few as 70,000 words.
7. I. Neither Carol nor Eric will travel by air.
II. Neither Carol nor Eric will travel to Burgundia.
- Statement II must be true if both Statement I and which of the following statements are true?
- (A) Immigration officials do not allow travelers without valid visas to enter Burgundia.
- (B) The cost of travel to Burgundia other than by air is almost prohibitive.
- (C) Until recently, Burgundia was closed to foreign visitors.
- (D) It is equally possible to reach Burgundia by commercial as by private airplane.
- (E) It is impossible to reach Burgundia except by air.

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23. A dog hears higher pitches than a human hears; a cat has a greater capacity to see in dim light than a human normally has; a platypus picks up weak electric signals to which a human is normally insensitive. Which of the following conclusions can be properly drawn from the statements above?
- (A) Most animals have sensory capacities superior to those demonstrated by humans.
(B) Some animals have sensory capacities that are different from those of humans.
(C) During evolution the eyes and ears of human beings were modified to make human sense perception less acute.
(D) Researchers should not be surprised to find that all the sensory capacities of platypuses are greater than any of those demonstrated by humans.
(E) Any human who can see in dim light does so less well than any cat.
24. In the early 1970's, when art reached its current high levels of popularity and value, a rash of thefts of works by great artists occurred in major art museums around the world. But, after 1975, sophisticated new security systems were installed in every major museum. As a consequence, important thefts in major museums declined markedly. Which of the following, if true, is strongest if offered as part of the evidence to show that improved security systems were responsible for the decline in thefts of important works from major museums?
- (A) The typical art work stolen during both the 1970's and the 1980's was a small piece that could be concealed on the person of the thief.
(B) Premiums paid by major museums to insure their most important works of art increased considerably between 1975 and 1985.
(C) The prices paid to art thieves for stolen works were lower during the 1980's than the prices paid to art thieves for comparable works during the 1970's.
(D) Thefts from private collections and smaller galleries of works by great artists increased sharply starting in the late 1970's.
(E) Art thefts in Europe, which has the largest number of works by great artists, outnumbered art thefts in the United States during the 1980's.
25. The government's recent policy of reducing payments to hospitals and physicians will, in the long run, actually cost the public more. Every dollar saved by initially providing lower-quality services eventually leads to several dollars spent in caring for subsequent complications. Which of the following best serves as an assumption that would make the argument above logically correct?
- (A) The government is more concerned about limiting its costs than about the well-being of its citizens.
(B) The government will be unwilling to pay for the complications that arise from providing inadequate health care.
(C) The government believes that the provision of lower-quality services need not result in an increase in complications.
(D) Hospitals and physicians will respond to reduced payments by reducing the quality of care they give.
(E) Hospitals and physicians are paid too much money for the services they provide to the public.

SECTION 6
Time — 30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Though it would be ----- to expect Barnard to have worked out all of the limitations of his experiment, he must be ----- for his neglect of quantitative analysis.
(A) unjust..pardon
(B) impudent..dismissed
(C) unrealistic..criticized
(D) pointless..examined
(E) inexcusable..recognized
2. The hierarchy of medical occupations is in many ways a ----- system; its strata remain ----- and the practitioners in them have very little vertical mobility.
(A) health..skilled
(B) delivery..basic
(C) regimental..flexible
(D) training..inferior
(E) caste..intact
- *3. Noting the murder victim's flaccid musculature and pearlike figure, she deduced that the unfortunate fellow had earned his living in some ----- occupation.
(A) treacherous
(B) prestigious
(C) ill-paying
(D) illegitimate
(E) sedentary
4. In Germany her startling powers as a novelist are widely -----, but she is almost unknown in the English-speaking world because of the difficulties of ----- her eccentric prose.
(A) ignored..editing
(B) admired..translating
(C) espoused..revealing
(D) obscured..comprehending
(E) dispersed..transcribing
5. Liberty is not easy, but far better to be an ----- fox, hungry and threatened on its hill, than a ----- canary, safe and secure in its cage.
(A) unfriendly..fragile
(B) aging..young
(C) angry..content
(D) imperious..lethargic
(E) unfettered..well-fed
6. Remelting old metal cans rather than making primary aluminum from bauxite ore shipped from overseas saves producers millions of dollars in ----- and production costs.
(A) distribution
(B) salvage
(C) storage
(D) procurement
(E) research
7. Johnson never ----- to ignore the standards of decent conduct mandated by company policy if ----- compliance with instructions from his superiors enabled him to do so, whatever the effects on his subordinates.
(A) deigned..tacit
(B) attempted..halfhearted
(C) intended..direct
(D) scrupled..literal
(E) wished..feigned

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The social sciences are less likely than other intellectual enterprises to get credit for their accomplishments. Arguably, this is so because the theories and conceptual constructs of the social sciences are especially accessible: human intelligence apprehends truths about human affairs with particular facility. And the discoveries of the social sciences, once isolated and labeled, are quickly absorbed into conventional wisdom, whereupon they lose their distinctiveness as scientific advances.

(10) This underappreciation of the social sciences contrasts oddly with what many see as their overutilization. Game theory is pressed into service in studies of shifting international alliances. Evaluation research is called upon to demonstrate successes or failures of social

(15) programs. Models from economics and demography become the definitive tools for examining the financial base of social security. Yet this rush into practical applications is itself quite understandable: public policy must continually be made, and policymakers rightly feel that even tentative findings and untested theories are better guides to decision-making than no findings and no theories at all.

17. The author is primarily concerned with

- (A) advocating a more modest view, and less widespread utilization, of the social sciences
- (B) analyzing the mechanisms for translating discoveries into applications in the social sciences
- (C) dissolving the air of paradox inherent in human beings studying themselves
- (D) explaining a peculiar dilemma that the social sciences are in
- (E) maintaining a strict separation between pure and applied social science

18. Which of the following is a social science discipline that the author mentions as being possibly overutilized?

- (A) Conventional theories of social change
- (B) Game theory
- (C) Decision-making theory
- (D) Economic theories of international alliances
- (E) Systems analysis

19. It can be inferred from the passage that, when speaking of the “overutilization” (line 11) of the social sciences, the author is referring to the

- (A) premature practical application of social science advances
- (B) habitual reliance on the social sciences even where common sense would serve equally well
- (C) practice of bringing a greater variety of social science disciplines to bear on a problem than the nature of the problem warrants
- (D) use of social science constructs by people who do not fully understand them
- (E) tendency on the part of social scientists to recast everyday truths in social science jargon

20. The author confronts the claim that the social sciences are being overutilized with

- (A) proof that overextensions of social science results are self-correcting
- (B) evidence that some public policy is made without any recourse to social science findings or theories
- (C) a long list of social science applications that are perfectly appropriate and extremely fruitful
- (D) the argument that overutilization is by and large the exception rather than the rule
- (E) the observation that this practice represents the lesser of two evils under existing circumstances

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- Line* (5) The term “Ice Age” may give a wrong impression. The epoch that geologists know as the Pleistocene and that spanned the 1.5 to 2.0 million years prior to the current geologic epoch was not one long continuous glaciation, but a period of oscillating climate with ice advances punctuated by times of interglacial climate not very different from the climate experienced now. Ice sheets that derived from an ice cap centered on northern Scandinavia reached southward to Central Europe. And beyond the margins of the ice sheets, climatic oscillations affected most of the rest of the world; for example, in the deserts, periods of wetter conditions (pluvials) contrasted with drier, interpluvial periods. Although the time involved is so short, about 0.04 percent of the total age of the Earth, the amount of attention devoted to the Pleistocene has been incredibly large, probably because of its immediacy, and because the epoch largely coincides with the appearance on Earth of humans and their immediate ancestors.
- (10) (15) (20) There is no reliable way of dating much of the Ice Age. Geological dates are usually obtained by using the rates of decay of various radioactive elements found in minerals. Some of these rates are suitable for very old rocks but involve increasing errors when used for young rocks; others are suitable for very young rocks and errors increase rapidly in older rocks. Most of the Ice Age spans a period of time for which no element has an appropriate decay rate.
- (25) (30) Nevertheless, researchers of the Pleistocene epoch have developed all sorts of more or less fanciful model schemes of how they would have arranged the Ice Age had they been in charge of events. For example, an early classification of Alpine glaciation suggested the existence there of four glaciations, named the Günz, Mindel, Riss, and Würm. This succession was based primarily on a series of deposits and events not directly related to glacial and interglacial periods, rather than on the more usual modern method of studying biological remains found in interglacial beds themselves interstratified
- (35) (40) (45) (50) (55) within glacial deposits. Yet this succession was forced willy-nilly onto the glaciated parts of Northern Europe, where there are partial successions of true glacial ground moraines and interglacial deposits, with hopes of ultimately piecing them together to provide a complete Pleistocene succession. Eradication of the Alpine nomenclature is still proving a Herculean task.
- There is no conclusive evidence about the relative length, complexity, and temperatures of the various glacial and interglacial periods. We do not know whether we live in a postglacial period or an interglacial period. The chill truth seems to be that we are already past the optimum climate of postglacial time. Studies of certain fossil distributions and of the pollen of certain temperate plants suggest decreases of a degree or two in both summer and winter temperatures and, therefore, that we may be in the declining climatic phase leading to glaciation and extinction.
21. In the passage, the author is primarily concerned with
 (A) searching for an accurate method of dating the Pleistocene epoch
 (B) discussing problems involved in providing an accurate picture of the Pleistocene epoch
 (C) declaring opposition to the use of the term “Ice Age” for the Pleistocene epoch
 (D) criticizing fanciful schemes about what happened in the Pleistocene epoch
 (E) refuting the idea that there is no way to tell if we are now living in an Ice Age
22. The “wrong impression” (line 1) to which the author refers is the idea that the
 (A) climate of the Pleistocene epoch was not very different from the climate we are now experiencing
 (B) climate of the Pleistocene epoch was composed of periods of violent storms
 (C) Pleistocene epoch consisted of very wet, cold periods mixed with very dry, hot periods
 (D) Pleistocene epoch comprised one period of continuous glaciation during which Northern Europe was covered with ice sheets
 (E) Pleistocene epoch had no long periods during which much of the Earth was covered by ice

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23. According to the passage, one of the reasons for the deficiencies of the “early classification of Alpine glaciation” (lines 32-33) is that it was
- (A) derived from evidence that was only tangentially related to times of actual glaciation
 - (B) based primarily on fossil remains rather than on actual living organisms
 - (C) an abstract, imaginative scheme of how the period might have been structured
 - (D) based on unmethodical examinations of randomly chosen glacial biological remains
 - (E) derived from evidence that had been haphazardly gathered from glacial deposits and inaccurately evaluated
24. Which of the following does the passage imply about the “early classification of Alpine glaciation” (lines 32-33)?
- (A) It should not have been applied as widely as it was.
 - (B) It represents the best possible scientific practice, given the tools available at the time.
 - (C) It was a valuable tool, in its time, for measuring the length of the four periods of glaciation.
 - (D) It could be useful, but only as a general guide to the events of the Pleistocene epoch.
 - (E) It does not shed any light on the methods used at the time for investigating periods of glaciation.
25. It can be inferred from the passage that an important result of producing an accurate chronology of events of the Pleistocene epoch would be a
- (A) clearer idea of the origin of the Earth
 - (B) clearer picture of the Earth during the time that humans developed
 - (C) clearer understanding of the reasons for the existence of deserts
 - (D) more detailed understanding of how radioactive dating of minerals works
 - (E) firmer understanding of how the northern polar ice cap developed
26. The author refers to deserts primarily in order to
- (A) illustrate the idea that an interglacial climate is marked by oscillations of wet and dry periods
 - (B) illustrate the idea that what happened in the deserts during the Ice Age had far-reaching effects even on the ice sheets of Central and Northern Europe
 - (C) illustrate the idea that the effects of the Ice Age's climatic variations extended beyond the areas of ice
 - (D) support the view that during the Ice Age sheets of ice covered some of the deserts of the world
 - (E) support the view that we are probably living in a postglacial period
27. The author would regard the idea that we are living in an interglacial period as
- (A) unimportant
 - (B) unscientific
 - (C) self-evident
 - (D) plausible
 - (E) absurd

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6. Contrary to the assumption that modern technology allows us to improve on nature, it is clear that any major technologically induced changes in a natural system are likely to be detrimental to that system. If you were to open the back of your watch, close your eyes, and poke a pencil into the exposed works, the almost certain result would be damage to the watch. Living organisms too, when subjected to technological alteration, will almost certainly be damaged rather than improved.
- The argument above is developed by
- (A) citing a consensus of opinion about technology among informed observers
(B) projecting the effects of change in a natural system from observation of a representative case
(C) drawing an analogy between a natural system and a mechanical device
(D) analyzing a natural system in terms of its constituent parts
(E) examining the results of technological innovations of the past
7. The plant called the scarlet gilia can have either red or white flowers. It had long been thought that hummingbirds, which forage by day, pollinate its red flowers and that hawkmoths, which forage at night, pollinate its white flowers. To try to show that this pattern of pollination by colors exists, scientists recently covered some scarlet gilia flowers only at night and others only by day: plants with red flowers covered at night became pollinated; plants with white flowers covered by day became pollinated.
- Which of the following, if true, would be additional evidence to suggest that hummingbirds are attracted to the red flowers and hawkmoths to the white flowers of the scarlet gilia?
- (A) Uncovered scarlet gilia flowers, whether red or white, became pollinated at approximately equal rates.
(B) Some red flowers of the scarlet gilia that remained uncovered at all times never became pollinated.
(C) White flowers of the scarlet gilia that were covered at night became pollinated with greater frequency than white flowers of the scarlet gilia that were left uncovered.
(D) Scarlet gilia plants with red flowers covered by day and scarlet gilia plants with white flowers covered at night remained unpollinated.
(E) In late August, when most of the hummingbirds had migrated but hawkmoths were still plentiful, red scarlet gilia plants produced fruit more frequently than they had earlier in the season.
8. The chief executive officer of one of the country's most successful steel manufacturing firms is amused at the publicity her management practices have attracted. She thinks managers get too much of the credit for upswings in their businesses. "A fickle public assumes too easily that managers are brilliant when demand is strong and idiotic when it is weak," she asserts.
- It can be inferred from the statement made by the chief executive officer that she believes which of the following?
- (A) A successful manager should attempt to control public opinion.
(B) There are no managers who can justifiably be said to be brilliant.
(C) Her own management practices are likely to be of little value to other businesses.
(D) The role of managers becomes less important during economic downturns than it is in relatively prosperous times.
(E) The level of demand for the products of manufacturing firms cannot be completely controlled by the managers of the firms.

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23. To many environmentalists, the extinction of plants—accompanied by the increasing genetic uniformity of species of food crops—is the single most serious environmental problem. Something must be done to prevent the loss of wild food plants or no-longer-cultivated food plants. Otherwise, the lack of genetic diversity could allow a significant portion of a major crop to be destroyed overnight. In 1970, for example, southern leaf blight destroyed approximately 20 percent of the United States corn crop, leaving very few varieties of corn unaffected in the areas over which the disease had spread.
- Which of the following can be inferred from the passage above?
- (A) Susceptibility to certain plant diseases is genetically determined.
(B) Eighty percent of the corn grown in the United States is resistant to southern leaf blight.
(C) The extinction of wild food plants can in almost every case be traced to destructive plant diseases.
(D) Plant breeders focus on developing plants that are resistant to plant disease.
(E) Corn is the only food crop threatened by southern leaf blight.
24. Many pregnant women suffer from vitamin deficiency, but this is frequently not due to vitamin deficiency in their diets; most often it is because they have higher requirements for vitamins than do the rest of the population.
- The best criticism of the reasoning in the statement above is that it
- (A) fails to specify the percentage of pregnant women who suffer from vitamin deficiency
(B) gives insufficient information about why pregnant women have higher vitamin requirements than do other groups
(C) fails to employ the same reference group for both uses of the term “vitamin deficiency”
(D) provides insufficient information about the incidence of vitamin deficiency in other groups with high vitamin requirements
(E) uses “higher requirements” in an ambiguous manner
25. Whenever the sun is shining and the windchill factor is below zero, Susan wears her parka. Whenever it is raining and the windchill factor is above zero, Susan wears her raincoat. Sometimes it rains when the sun is shining.
- If the above statements are true, which of the following must also be true?
- (A) If it is not raining and Susan is wearing her parka, the sun is shining.
(B) If the windchill factor is below zero and Susan is not wearing her parka, the sun is not shining.
(C) If the windchill factor is below zero and it is not raining, Susan is wearing her parka.
(D) If the windchill factor is below zero and it is raining, Susan is wearing her raincoat.
(E) If it rains while the sun is shining and the windchill factor is zero, Susan wears her parka.

SECTION 2
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Despite the apparently bewildering complexity of this procedure, the underlying ----- is quite -----.
(A) simplicity. .calculated
(B) principle. .elementary
(C) confusion. .imaginary
(D) purpose. .effective
(E) theory. .modern
2. In television programming, a later viewing time often ----- a more ----- audience and, therefore, more challenging subjects and themes.
(A) requires. .critical (B) evinces. .affluent
(C) implies. .mature (D) eliminates. .realistic
(E) invites. .general
3. The cultivation of the emotion of *natsukashii*, interpretable as “pleasant sorrow,” brings Japanese to Kyoto in the spring, not to ----- the cherry blossoms in full bloom but to ----- the fading, falling flowers.
(A) mourn. .exclaim over
(B) honor. .protect
(C) describe. .rejoice over
(D) arrange. .preserve
(E) savor. .grieve over
4. Adam Smith’s *Wealth of Nations* (1776) is still worth reading, more to appreciate the current ----- of Smith’s valid contributions to economics than to see those contributions as the ----- of present-day economics.
(A) disregard. .outgrowths
(B) reaffirmation. .concerns
(C) relevance. .precursors
(D) acceptance. .byproducts
(E) importance. .vestiges
5. At several points in his discussion, Graves, in effect, ----- evidence when it does not support his argument, tailoring it to his needs.
(A) addresses (B) creates (C) alters
(D) suppresses (E) substitutes
6. Regardless of what ----- theories of politics may propound, there is nothing that requires daily politics to be clear, thorough, and consistent—nothing, that is, that requires reality to conform to theory.
(A) vague (B) assertive (C) casual
(D) vicious (E) tidy
7. Exposure to sustained noise has been claimed to ----- blood pressure regulation in human beings and, particularly, to increase hypertension, even though some researchers have obtained inconclusive results that ----- the relationship.
(A) sharpen. .conflate
(B) increase. .diminish
(C) aggravate. .buttress
(D) disrupt. .neutralize
(E) impair. .obscure

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Eight percent of the Earth's crust is aluminum, and there are hundreds of aluminum-bearing minerals and vast quantities of the rocks that contain them. The best aluminum ore is bauxite, defined as aggregates of aluminous minerals, more or less impure, in which aluminum is present as hydrated oxides. Bauxite is the richest of all those aluminous rocks that occur in large quantities, and it yields alumina, the intermediate product required for the production of aluminum. Alumina also occurs naturally as the mineral corundum, but corundum is not found in large deposits of high purity, and therefore it is an impractical source for making aluminum. Most of the many abundant nonbauxite aluminous minerals are silicates, and, like all silicate minerals, they are refractory, resistant to analysis, and extremely difficult to process. The aluminum silicates are therefore generally unsuitable alternatives to bauxite because considerably more energy is required to extract alumina from them.

17. The author implies that a mineral must either be or readily supply which of the following in order to be classified as an aluminum ore?

- (A) An aggregate
- (B) Bauxite
- (C) Alumina
- (D) Corundum
- (E) An aluminum silicate

18. The passage supplies information for answering all of the following questions regarding aluminous minerals EXCEPT:
- (A) What percentage of the aluminum in the Earth's crust is in the form of bauxite?
 - (B) Are aluminum-bearing nonbauxite minerals plentiful?
 - (C) Do the aluminous minerals found in bauxite contain hydrated oxides?
 - (D) Are aluminous hydrated oxides found in rocks?
 - (E) Do large quantities of bauxite exist?
19. The author implies that corundum would be used to produce aluminum if
- (A) corundum could be found that is not contaminated by silicates
 - (B) the production of alumina could be eliminated as an intermediate step in manufacturing aluminum
 - (C) many large deposits of very high quality corundum were to be discovered
 - (D) new technologies were to make it possible to convert corundum to a silicate
 - (E) manufacturers were to realize that the world's supply of bauxite is not unlimited

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- Traditionally, the study of history has had fixed boundaries and focal points—periods, countries, dramatic events, and great leaders. It also has had clear and firm notions of scholarly procedure: how one inquires into a historical problem, how one presents and documents one's findings, what constitutes admissible and adequate proof.
- Anyone who has followed recent historical literature can testify to the revolution that is taking place in historical studies. The currently fashionable subjects come directly from the sociology catalog: childhood, work, leisure. The new subjects are accompanied by new methods. Where history once was primarily narrative, it is now entirely analytic.
- The old questions "What happened?" and "How did it happen?" have given way to the question "Why did it happen?" Prominent among the methods used to answer the question "Why" is psychoanalysis, and its use has given rise to psychohistory.
- Psychohistory does not merely use psychological explanations in historical contexts. Historians have always used such explanations when they were appropriate and when there was sufficient evidence for them. But this pragmatic use of psychology is not what psychohistorians intend. They are committed, not just to psychology in general, but to Freudian psychoanalysis. This commitment precludes a commitment to history as historians have always understood it. Psychohistory derives its "facts" not from history, the detailed records of events and their consequences, but from psychoanalysis of the individuals who made history, and deduces its theories not from this or that instance in their lives, but from a view of human nature that transcends history. It denies the basic criterion of historical evidence: that evidence be publicly accessible to, and therefore assessable by, all historians. And it violates the basic tenet of historical method: that historians be alert to the negative instances that would refute their theses. Psychohistorians, convinced of the absolute rightness of their own theories, are also convinced that theirs is the "deepest" explanation of any event, that other explanations fall short of the truth.
- Psychohistory is not content to violate the discipline of history (in the sense of the proper mode of studying and writing about the past); it also violates the past itself. It denies to the past an integrity and will of its own, in which people acted out of a variety of motives and in which events had a multiplicity of causes and effects. It imposes upon the past the same determinism that it imposes upon the present, thus robbing people and events of their individuality and of their complexity. Instead of respecting the particularity of the past, it assimilates all events, past and present, into a single deterministic schema that is presumed to be true at all times and in all circumstances.
20. Which of the following best states the main point of the passage?
- The approach of psychohistorians to historical study is currently in vogue even though it lacks the rigor and verifiability of traditional historical method.
 - Traditional historians can benefit from studying the techniques and findings of psychohistorians.
 - Areas of sociological study such as childhood and work are of little interest to traditional historians.
 - The psychological assessment of an individual's behavior and attitudes is more informative than the details of his or her daily life.
 - History is composed of unique and nonrepeating events that must be individually analyzed on the basis of publicly verifiable evidence.
21. It can be inferred from the passage that one way in which traditional history can be distinguished from psychohistory is that traditional history usually
- views past events as complex and having their own individuality
 - relies on a single interpretation of human behavior to explain historical events
 - interprets historical events in such a way that their specific nature is transcended
 - turns to psychological explanations in historical contexts to account for events
 - relies strictly on data that are concrete and quantifiable
22. It can be inferred from the passage that the methods used by psychohistorians probably prevent them from
- presenting their material in chronological order
 - producing a one-sided picture of an individual's personality and motivations
 - uncovering alternative explanations that might cause them to question their own conclusions
 - offering a consistent interpretation of the impact of personality on historical events
 - recognizing connections between a government's political actions and the aspirations of government leaders

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23. The passage supplies information for answering which of the following questions?
- (A) What are some specific examples of the use of psychohistory in historical interpretation?
(B) When were the conventions governing the practice of traditional history first established?
(C) When do traditional historians consider psychological explanations of historical developments appropriate?
(D) What sort of historical figure is best suited for psychohistorical analysis?
(E) What is the basic criterion of historical evidence required by traditional historians?
24. The author mentions which of the following as a characteristic of the practice of psychohistorians?
- (A) The lives of historical figures are presented in episodic rather than narrative form.
(B) Archives used by psychohistorians to gather material are not accessible to other scholars.
(C) Past and current events are all placed within the same deterministic schema.
(D) Events in the adult life of a historical figure are seen to be more consequential than are those in the childhood of the figure.
(E) Analysis is focused on group behavior rather than on particular events in an individual's life.
25. The author of the passage suggests that psychohistorians view history primarily as
- (A) a report of events, causes, and effects that is generally accepted by historians but which is, for the most part, unverifiable
(B) an episodic account that lacks cohesion because records of the role of childhood, work, and leisure in the lives of historical figures are rare
(C) an uncharted sea of seemingly unexplainable events that have meaning only when examined as discrete units
(D) a record of the way in which a closed set of immutable psychological laws seems to have shaped events
(E) a proof of the existence of intricate causal interrelationships between past and present events
26. The author of the passage puts the word "deepest" (line 44) in quotation marks most probably in order to
- (A) signal her reservations about the accuracy of psychohistorians' claims for their work
(B) draw attention to a contradiction in the psychohistorians' method
(C) emphasize the major difference between the traditional historians' method and that of psychohistorians
(D) disassociate her opinion of the psychohistorians' claims from her opinion of their method
(E) question the usefulness of psychohistorians' insights into traditional historical scholarship
27. In presenting her analysis, the author does all of the following EXCEPT:
- (A) Make general statements without reference to specific examples.
(B) Describe some of the criteria employed by traditional historians.
(C) Question the adequacy of the psychohistorians' interpretation of events.
(D) Point out inconsistencies in the psychohistorians' application of their methods.
(E) Contrast the underlying assumptions of psychohistorians with those of traditional historians.

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SECTION 4
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. After a slow sales start early in the year, mobile homes have been gaining favor as ----- to increasingly expensive conventional housing.
(A) a reaction (B) an addition
(C) an introduction (D) an alternative
(E) a challenge
2. Just as such apparently basic things as rocks, clouds, and clams are, in fact, intricately structured entities, so the self, too, is not an “elementary particle,” but is ----- construction.
(A) a complicated (B) a convoluted
(C) a distorted (D) an amorphous
(E) an illusory
3. Considering how long she had yearned to see Italy, her first reaction was curiously -----.
(A) meditative (B) tepid
(C) categorical (D) unoriginal
(E) insightful
4. The successful ----- of an archaeological site requires scientific knowledge as well as cultural -----.
(A) evolution . awareness
(B) revelation . depth
(C) reconstruction . sensitivity
(D) analysis . aesthetics
(E) synthesis . understanding
5. As painted by Constable, the scene is not one of bucolic -----; rather it shows a striking emotional and intellectual -----.
(A) intensity . boredom
(B) complacence . detachment
(C) serenity . tension
(D) vitality . excitement
(E) nostalgia . placidity
6. Our times seem especially ----- to bad ideas, probably because in throwing off the shackles of tradition, we have ended up being quite ----- untested theories and untried remedies.
(A) impervious . tolerant of
(B) hostile . dependent on
(C) hospitable . vulnerable to
(D) prone . wary of
(E) indifferent . devoid of
7. Although he attempted repeatedly to ----- her of her conviction of his insincerity, he was not successful; she remained ----- in her judgment.
(A) remind . forceful
(B) convince . unfeigned
(C) exorcise . indulgent
(D) disabuse . adamant
(E) free . unsure

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Jean Wagner's most enduring contribution to the study of Afro-American poetry is his insistence that it be analyzed in a religious, as well as secular, frame of reference. The appropriateness of such an approach may seem self-evident for a tradition commencing with spirituals and owing its early forms, rhythms, vocabulary, and evangelical fervor to Wesleyan hymnals. But before Wagner a secular outlook that analyzed Black poetry solely within the context of political and social protest was dominant in the field.

It is Wagner who first demonstrated the essential fusion of racial and religious feeling in Afro-American poetry. The two, he argued, form a symbiotic union in which religious feelings are often applied to racial issues and racial problems are often projected onto a metaphysical plane. Wagner found this most eloquently illustrated in the Black spiritual, where the desire for freedom in this world and the hope for salvation in the next are inextricably intertwined.

17. The primary purpose of the passage is to
- (A) contrast the theories of Jean Wagner with those of other contemporary critics
 - (B) document the influence of Jean Wagner on the development of Afro-American poetry
 - (C) explain the relevance of Jean Wagner's work to the study of Afro-American religion
 - (D) indicate the importance of Jean Wagner's analysis of Afro-American poetry
 - (E) present the contributions of Jean Wagner to the study of Black spirituals

18. All of the following aspects of Afro-American poetry are referred to in the passage as having been influenced by Wesleyan hymnals EXCEPT
- (A) subject matter
 - (B) word choice
 - (C) rhythm
 - (D) structure
 - (E) tone
19. It can be inferred from the passage that, before Wagner, most students of Afro-American poetry did which of the following?
- (A) Contributed appreciably to the transfer of political protest from Afro-American poetry to direct political action.
 - (B) Ignored at least some of the historical roots of Afro-American poetry.
 - (C) Analyzed fully the aspects of social protest to be found in such traditional forms of Afro-American poetry as the Black spiritual.
 - (D) Regarded as unimportant the development of fervent emotionalism in a portion of Afro-American poetry.
 - (E) Concentrated on the complex relations between the technical elements in Afro-American poetry and its political content.

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Two relatively recent independent developments stand behind the current major research effort on nitrogen fixation, the process by which bacteria symbiotically render leguminous plants independent of nitrogen fertilizer. The one development has been the rapid, sustained increase in the price of nitrogen fertilizer. The other development has been the rapid growth of knowledge of and technical sophistication in genetic engineering. Fertilizer prices, largely tied to the price of natural gas, huge amounts of which go into the manufacture of fertilizer, will continue to represent an enormous and escalating economic burden on modern agriculture, spurring the search for alternatives to synthetic fertilizers. And genetic engineering is just the sort of fundamental breakthrough that opens up prospects of wholly novel alternatives. One such novel idea is that of inserting into the chromosomes of plants discrete genes that are not a part of the plants' natural constitution: specifically, the idea of inserting into nonleguminous plants the genes, if they can be identified and isolated, that fit the leguminous plants to be hosts for nitrogen-fixing bacteria. Hence, the intensified research on legumes.

Nitrogen fixation is a process in which certain bacteria use atmospheric nitrogen gas, which green plants cannot directly utilize, to produce ammonia, a nitrogen compound plants can use. It is one of nature's great ironies that the availability of nitrogen in the soil frequently sets an upper limit on plant growth even though the plants' leaves are bathed in a sea of nitrogen gas. The leguminous plants—among them crop plants such as soybeans, peas, alfalfa, and clover—have solved the nitrogen supply problem by entering into a symbiotic relationship with the bacterial genus *Rhizobium*; as a matter of fact, there is a specific strain of *Rhizobium* for each species of legume. The host plant supplies the bacteria with food and a protected habitat and receives surplus ammonia in exchange. Hence, legumes can thrive in nitrogen-depleted soil. Unfortunately, most of the major food crops—including maize, wheat, rice, and potatoes—cannot. On the contrary, many of the high-yielding hybrid varieties of these food crops bred during the Green Revolution of the 1960's were selected specifically to give high yields in response to generous applications of nitrogen fertilizer. This poses an additional, formidable challenge to plant geneticists: they must work on enhancing fixation within the existing symbioses. Unless they succeed, the yield gains of the Green Revolution will be largely lost even if the genes in legumes that equip those plants to enter into a symbiosis with nitrogen fixers are identified and isolated, and even if the transfer of those gene complexes, once they are found, becomes possible. The overall task looks forbidding, but the stakes are too high not to undertake it.

20. The primary purpose of the passage is to
- (A) expose the fragile nature of the foundations on which the high yields of modern agriculture rest
 - (B) argue that genetic engineering promises to lead to even higher yields than are achievable with synthetic fertilizers
 - (C) argue that the capacity for nitrogen-fixing symbioses is transferable to nonleguminous plants
 - (D) explain the reasons for and the objectives of current research on nitrogen-fixing symbioses
 - (E) describe the nature of the genes that regulate the symbiosis between legumes and certain bacteria
21. According to the passage, there is currently no strain of *Rhizobium* that can enter into a symbiosis with
- (A) alfalfa
 - (B) clover
 - (C) maize
 - (D) peas
 - (E) soybeans
22. The passage implies that which of the following is true of the bacterial genus *Rhizobium*?
- (A) *Rhizobium* bacteria are found primarily in nitrogen-depleted soils.
 - (B) Some strains of *Rhizobium* are not capable of entering into a symbiosis with any plant.
 - (C) Newly bred varieties of legumes cannot be hosts to any strain of *Rhizobium*.
 - (D) *Rhizobium* bacteria cannot survive outside the protected habitat provided by host plants.
 - (E) *Rhizobium* bacteria produce some ammonia for their own purposes.
23. It can be inferred from the passage that which of the following was the most influential factor in bringing about intensified research on nitrogen fixation?
- (A) The high yields of the Green Revolution
 - (B) The persistent upward surge in natural gas prices
 - (C) The variety of *Rhizobium* strains
 - (D) The mechanization of modern agriculture
 - (E) The environmental ill effects of synthetic fertilizers

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24. Which of the following situations is most closely analogous to the situation described by the author as one of nature's great ironies (lines 28-32) ?
- (A) That of a farmer whose crops have failed because the normal midseason rains did not materialize and no preparations for irrigation had been made
- (B) That of a long-distance runner who loses a marathon race because of a wrong turn that cost him twenty seconds
- (C) That of shipwrecked sailors at sea in a lifeboat, with one flask of drinking water to share among them
- (D) That of a motorist who runs out of gas a mere five miles from the nearest gas station
- (E) That of travelers who want to reach their destination as fast and as cheaply as possible, but find that cost increases as travel speed increases
25. According to the passage, the ultimate goal of the current research on nitrogen fixation is to develop
- (A) strains of *Rhizobium* that can enter into symbioses with existing varieties of wheat, rice, and other nonlegumes
- (B) strains of *Rhizobium* that produce more ammonia for leguminous host plants than do any of the strains presently known
- (C) varieties of wheat, rice, and other nonlegumes that yield as much as do existing varieties, but require less nitrogen
- (D) varieties of wheat, rice, and other nonlegumes that maintain an adequate symbiotic relationship with nitrogen-fixing bacteria and produce high yields
- (E) high-yielding varieties of wheat, rice, and other nonlegumes that are genetically equipped to fix nitrogen from the air without the aid of bacteria
26. The author regards the research program under discussion as
- (A) original and extensive but ill-defined as to method
- (B) necessary and ambitious but vulnerable to failure
- (C) cogent and worthwhile but severely underfunded
- (D) prohibitively expensive but conceptually elegant
- (E) theoretically fascinating but practically useless
27. Most nearly parallel, in its fundamental approach, to the research program described in the passage would be a program designed to
- (A) achieve greater frost resistance in frost-tender food plants by means of selective breeding, thereby expanding those plants' area of cultivation
- (B) achieve greater yields from food plants by interplanting crop plants that are mutually beneficial
- (C) find inexpensive and abundant natural substances that could, without reducing yields, be substituted for expensive synthetic fertilizers
- (D) change the genetic makeup of food plants that cannot live in water with high salinity, using genes from plants adapted to salt water
- (E) develop, through genetic engineering, a genetic configuration for the major food plants that improves the storage characteristics of the edible portion of the plants

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8. According to a newspaper article, a customs inspector believed that he could always tell if people were trying to deceive him. He based this belief on the fact that, in ten years of experience, in cases where he suspected that a tourist was carrying contraband, he was always right. Careful inspections of the luggage and persons of the suspects always turned up the contraband goods.

Which of the following points up a logical flaw in the inspector's reasoning?

- (A) The tourists who passed through the inspector's checkpoint could have known that they might be searched.
- (B) Only a small percentage of the tourists passing through the inspector's checkpoint could be expected to be intentionally carrying contraband.
- (C) Other customs inspectors at the same checkpoint caught tourists carrying contraband just as often as this inspector did.
- (D) Some tourists whom the inspector decided not to search could have knowingly carried contraband.
- (E) Some tourists who passed through the checkpoint without being searched could have been carrying contraband unwittingly.

9. In any negotiations between a party with limited aims and an opposing party with unlimited aims, the party with limited aims is bound to lose. This is so because the scope of a negotiating party's aims determines the energy and the perseverance that will be brought to the negotiations by that party.

Which of the following is an assumption implicit in the passage above?

- (A) The intensity with which parties conduct negotiations affects the outcome of those negotiations.
- (B) Negotiations almost always pit against one another parties whose aims differ in scope.
- (C) The outcome of negotiations cannot be correctly predicted in advance.
- (D) A negotiator who has exceptionally high aims needs exceptional perseverance in order to avoid losing.
- (E) Negotiating parties are typically not aware of the scope of each other's aims until the outcome is no longer in doubt.

10. In a recent study, sedentary middle-aged men who drink more than two cups of coffee a day were found more likely than other sedentary middle-aged men to have a high blood level of cholesterol, which is a factor increasing risk of heart disease. Cholesterol can reach the blood from food and drink but is not contained in coffee.

Which of the following, if true, most seriously weakens a conclusion from the study that for sedentary middle-aged men coffee increases the risk of heart attack?

- (A) A sedentary style of life increases levels of cholesterol in the blood.
- (B) Coffee contains caffeine, which acts as a stimulant that increases heart rate.
- (C) The men studied drank their coffee without milk or cream, which contain cholesterol.
- (D) In both groups, the men were likely to be overweight, and excess weight is a factor that increases risk of heart disease.
- (E) The men who drank more than two cups of coffee a day also ate more foods high in cholesterol.

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23. A package is never accepted for delivery by the delivery service unless it is within the established size limits. All packages accepted for delivery by the delivery service have a return address.
- If the statements above are true, which of the following must also be true?
- (A) The delivery service charges more for heavier packages than for lighter packages.
(B) The delivery service will always accept for delivery a package that is within the established size limits.
(C) If a package is within the established size limits and has a return address, it will be accepted for delivery by the delivery service no matter how heavy the package is.
(D) A package that is not within the established size limits but has a return address is never accepted for delivery by the delivery service.
(E) The delivery service does not charge for packages that must be returned to the sender.

24. The pattern of scientific grants awarded by foundations is changing as the number of worthy requests grows in the face of cuts in federal spending. Many foundations, formerly willing to fund innovative but risky projects, have begun to support relatively conservative projects only.

From the passage above it can be most reasonably concluded that which of the following was true when the passage was written, as compared to preceding years?

- (A) Foundations were being forced to recognize that they could be more effective by granting smaller amounts of money to a greater number of projects.
(B) The decision-makers at foundations tended to be more politically conservative.
(C) Foundations had less money available to support worthwhile projects because of the rising costs of other activities.
(D) Foundations were increasingly allowing decisions about which projects to fund to be based on a reluctance to see projects they supported fail.
(E) Those programs that were more innovative than the ones funded by foundations were supported by the limited federal funds that were still available.

25. The Wheat Farmers Alliance, a political action committee, attracts 70 percent of its contributors from an advertisement requesting contributions placed only in the September, October, and November issues of the *Grange Report*, a monthly newsletter for wheat farmers. The president of the Wheat Farmers Alliance, to increase the number of contributors, decides to advertise in each of the monthly issues of the *Grange Report*. She expects that, as a result of the additional *Grange Report* advertisements, the number of contributors will be increased to at least double the present number.

Which of the following, if true, would most strongly support the president's expectation?

- (A) The September, October, and November advertisements were noticed by fewer than one-third of those readers of the *Grange Report* who would be willing to contribute to the Wheat Farmers Alliance.
(B) Wheat farmers traditionally repay their bank loans in late summer after the winter wheat crop has been harvested and sold.
(C) The majority of the readers of the *Grange Report* with a great enough interest in the Wheat Farmers Alliance to contribute have already responded to the advertisements.
(D) Most of those who contribute to the Wheat Farmers Alliance in the course of a year do so in response to advertisements in the *Grange Report*.
(E) The total number of readers of the *Grange Report* is stable from year to year.

TEST 16

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Dreams are _____ in and of themselves, but, when combined with other data, they can tell us much about the dreamer.
(A) uninformative
(B) startling
(C) harmless
(D) unregulated
(E) uncontrollable
2. The Muses are _____ deities: they avenge themselves without mercy on those who weary of their charms.
(A) rueful (B) ingenuous (C) solicitous
(D) vindictive (E) dispassionate
3. Without the psychiatrist's promise of confidentiality, trust is _____ and the patient's communication limited; even though confidentiality can thus be seen to be precious in therapy, moral responsibility sometimes requires a willingness to _____ it.
(A) implicit..extend
(B) ambiguous..apply
(C) prevented..uphold
(D) assumed..examine
(E) impaired..sacrifice
4. Having fully embraced the belief that government by persuasion is preferable to government by _____, the leaders of the movement have recently _____ most of their previous statements supporting totalitarianism.
(A) intimidation..issued
(B) participation..moderated
(C) proclamation..codified
(D) demonstration..deliberated
(E) coercion..repudiated
5. The powers and satisfactions of primeval people, though few and meager, were _____ their few and simple desires.
(A) simultaneous with
(B) commensurate with
(C) substantiated by
(D) circumscribed by
(E) ruined by
6. Some scientists argue that carbon compounds play such a central role in life on Earth because of the possibility of _____ resulting from the carbon atom's ability to form an unending series of different molecules.
(A) deviation
(B) stability
(C) reproduction
(D) variety
(E) invigoration
7. Whereas the art critic Vasari saw the painting entitled the *Mona Lisa* as an original and wonderful _____ feat, the aesthetes saw it as _____ that required deciphering.
(A) collaborative..an aberration
(B) historical..a symbol
(C) technical..a hieroglyph
(D) mechanical..an imitation
(E) visual..an illusion

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Whether the languages of the ancient American peoples were used for expressing abstract universal concepts can be clearly answered in the case of Nahuatl. Nahuatl, like Greek and German, is a language that allows the formation of extensive compounds. By the combination of radicals or semantic elements, single compound words can express complex conceptual relations, often of an abstract universal character.

The *tlamatinime* ("those who know") were able to use this rich stock of abstract terms to express the nuances of their thought. They also availed themselves of other forms of expression with metaphorical meaning, some probably original, some derived from Toltec coinages. Of these forms the most characteristic in Nahuatl is the juxtaposition of two words that, because they are synonyms, associated terms, or even contraries, complement each other to evoke one single idea. Used as metaphor, the juxtaposed terms connote specific or essential traits of the being they refer to, introducing a mode of poetry as an almost habitual form of expression.

17. A main purpose of the passage is to

- (A) delineate the function of the *tlamatinime* in Nahuatl society
- (B) explain the abstract philosophy of the Nahuatl thinkers
- (C) argue against a theory of poetic expression by citing evidence about the Nahuatl
- (D) explore the rich metaphorical heritage the Nahuatl received from the Toltecs
- (E) describe some conceptual and aesthetic resources of the Nahuatl language

18. According to the passage, some abstract universal ideas can be expressed in Nahuatl by

- (A) taking away from a word any reference to particular instances
- (B) removing a word from its associations with other words
- (C) giving a word a new and opposite meaning
- (D) putting various meaningful elements together in one word
- (E) turning each word of a phrase into a poetic metaphor

19. It can be inferred solely from the information in the passage that

- (A) there are many languages that, like Greek or German, allow extensive compounding
- (B) all abstract universal ideas are ideas of complex relations
- (C) some record or evidence of the thought of the *tlamatinime* exists
- (D) metaphors are always used in Nahuatl to express abstract conceptual relationships
- (E) the abstract terms of the Nahuatl language are habitually used in poetry

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Many theories have been formulated to explain the role of grazers such as zooplankton in controlling the amount of planktonic algae (phytoplankton) in lakes. The first theories of such grazer control were merely based on observations of negative correlations between algal and zooplankton numbers. A low number of algal cells in the presence of a high number of grazers suggested, but did not prove, that the grazers had removed most of the algae. The converse observation, of the absence of grazers in areas of high phytoplankton concentration, led Hardy to propose his principle of animal exclusion, which hypothesized that phytoplankton produced a repellent that excluded grazers from regions of high phytoplankton concentration. This was the first suggestion of algal defenses against grazing.

Perhaps the fact that many of these first studies considered only algae of a size that could be collected in a net (net phytoplankton), a practice that overlooked the smaller phytoplankton (nannoplankton) that we now know grazers are most likely to feed on, led to a de-emphasis of the role of grazers in subsequent research. Increasingly, as in the individual studies of Lund, Round, and Reynolds, researchers began to stress the importance of environmental factors such as temperature, light, and water movements in controlling algal numbers. These environmental factors were amenable to field monitoring and to simulation in the laboratory. Grazing was believed to have some effect on algal numbers, especially after phytoplankton growth rates declined at the end of bloom periods, but grazing was considered a minor component of models that predicted algal population dynamics.

The potential magnitude of grazing pressure on freshwater phytoplankton has only recently been determined empirically. Studies by Hargrave and Geen estimated natural community grazing rates by measuring feeding rates of individual zooplankton species in the laboratory and then computing community grazing rates for field conditions using the known population density of grazers. The high estimates of grazing pressure postulated by these researchers were not fully accepted, however, until the grazing rates of zooplankton were determined directly in the field, by means of new experimental techniques. Using a specially prepared feeding chamber, Haney was able to record zooplankton grazing rates in natural field conditions. In the periods of peak zooplankton abundance, that is, in the late spring and in the summer, Haney recorded maximum daily community grazing rates, for nutrient-poor lakes and bog lakes, respectively, of 6.6 percent and 114 percent of

daily phytoplankton production. Cladocerans had higher grazing rates than copepods, usually accounting for 80 percent of the community grazing rate. These rates varied seasonally, reaching the lowest point in the winter and early spring. Haney's thorough research provides convincing field evidence that grazers can exert significant pressure on phytoplankton population.

20. The author most likely mentions Hardy's principle of animal exclusion in order to
 - (A) give an example of one theory about the interaction of grazers and phytoplankton
 - (B) defend the first theory of algal defenses against grazing
 - (C) support the contention that phytoplankton numbers are controlled primarily by environmental factors
 - (D) demonstrate the superiority of laboratory studies of zooplankton feeding rates to other kinds of studies of such rates
 - (E) refute researchers who believed that low numbers of phytoplankton indicated the grazing effect of low numbers of zooplankton
21. It can be inferred from the passage that the "first theories" of grazer control mentioned in line 4 would have been more convincing if researchers had been able to
 - (A) observe high phytoplankton numbers under natural lake conditions
 - (B) discover negative correlations between algae and zooplankton numbers from their field research
 - (C) understand the central importance of environmental factors in controlling the growth rates of phytoplankton
 - (D) make verifiable correlations of cause and effect between zooplankton and phytoplankton numbers
 - (E) invent laboratory techniques that would have allowed them to bypass their field research concerning grazer control

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22. Which of the following, if true, would call into question Hardy's principle of animal exclusion?
- (A) Zooplankton are not the only organisms that are affected by phytoplankton repellents.
 - (B) Zooplankton exclusion is unrelated to phytoplankton population density.
 - (C) Zooplankton population density is higher during some parts of the year than during others.
 - (D) Net phytoplankton are more likely to exclude zooplankton than are nannoplankton.
 - (E) Phytoplankton numbers can be strongly affected by environmental factors.
23. The author would be likely to agree with which of the following statements regarding the pressure of grazers on phytoplankton numbers?
- I. Grazing pressure can vary according to the individual type of zooplankton.
 - II. Grazing pressure can be lower in nutrient-poor lakes than in bog lakes.
 - III. Grazing tends to exert about the same pressure as does temperature.
- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
24. The passage supplies information to indicate that Hargrave and Geen's conclusion regarding the grazing pressure exerted by zooplankton on phytoplankton numbers was most similar to the conclusion regarding grazing pressure reached by which of the following researchers?
- (A) Hardy
 - (B) Lund
 - (C) Round
 - (D) Reynolds
 - (E) Haney
25. It can be inferred from the passage that one way in which many of the early researchers on grazer control could have improved their data would have been to
- (A) emphasize the effects of temperature, rather than of light, on phytoplankton
 - (B) disregard nannoplankton in their analysis of phytoplankton numbers
 - (C) collect phytoplankton of all sizes before analyzing the extent of phytoplankton concentration
 - (D) recognize that phytoplankton other than net phytoplankton could be collected in a net
 - (E) understand the crucial significance of net phytoplankton in the diet of zooplankton
26. According to the passage, Hargrave and Geen did which of the following in their experiments?
- (A) They compared the grazing rates of individual zooplankton species in the laboratory with the natural grazing rates of these species.
 - (B) They hypothesized about the population density of grazers in natural habitats by using data concerning the population density of grazers in the laboratory.
 - (C) They estimated the community grazing rates of zooplankton in the laboratory by using data concerning the natural community grazing rates of zooplankton.
 - (D) They estimated the natural community grazing rates of zooplankton by using data concerning the known population density of phytoplankton.
 - (E) They estimated the natural community grazing rates of zooplankton by using laboratory data concerning the grazing rates of individual zooplankton species.
27. Which of the following is a true statement about the zooplankton numbers and zooplankton grazing rates observed in Haney's experiments?
- (A) While zooplankton numbers began to decline in August, zooplankton grazing rates began to increase.
 - (B) Although zooplankton numbers were high in May, grazing rates did not become high until January.
 - (C) Both zooplankton numbers and grazing rates were higher in December than in November.
 - (D) Both zooplankton numbers and grazing rates were lower in March than in June.
 - (E) Both zooplankton numbers and grazing rates were highest in February.

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7. Because they were anxious to balance Wyoming's population of 8,000 men and 2,000 women, the state's lawmakers extended voting rights to women in Wyoming in 1869.

Which of the following can serve as an assumption on which the lawmakers' decision was directly based?

- (A) Women would vote in ways that would make Wyoming a better place to live.
 - (B) Women were superior to men in the ability to make political decisions.
 - (C) Women would want to live in a place where they could vote.
 - (D) Women who were willing to endure frontier conditions deserved the right to vote.
 - (E) Women who voted would be better citizens than those who did not.
8. Researchers have discovered a new poison, bromethalin, that is lethal to all rats, even to those species that have become immune to other poisons, as well as to those rats that eat only the most minute quantities. Tests have demonstrated that rats will not learn to avoid bromethalin and that carcasses of rats killed by bromethalin pose no threat to the well-being of other animals.

Which of the following statements, if true, would support the researchers' claim that carcasses of rats killed by bromethalin will not pose a threat to other animals?

- (A) Rats that consume bromethalin die immediately.
- (B) Animals, prompted by curiosity, often examine carcasses that appear in their territory.
- (C) Chemicals in the digestive tract of dead rats quickly break bromethalin down into a nontoxic substance.
- (D) Traces of bromethalin remain in the rat's mouth and saliva after the rat eats the poison.
- (E) Certain animals are scavengers and feed habitually on refuse and dead flesh.

9. If carbon dioxide gas is generated in large enough quantities, it will collect in the atmosphere and cause an unwelcome warming effect on climate.

The decay of plants, including trees, generates carbon dioxide, but in forests such carbon dioxide is balanced by the carbon dioxide taken in by living plants, which give off oxygen.

The use in industry of fuels derived from plants generates a large amount of carbon dioxide; such fuels include wood, coal, and oil.

If the statements above are true, which of the following can properly be concluded from them?

- (A) All of the carbon dioxide that can be generated in an industrial society is attributable to plants, directly or indirectly.
- (B) An unwelcome warming effect on climate cannot be avoided, since carbon dioxide is given off by the natural processes of decay in plants.
- (C) Forests contribute as much carbon dioxide to the atmosphere as does the industrial use of fuel derived from plants.
- (D) A society that uses plant-based fuels in industry will contribute a net surplus of carbon dioxide to the atmosphere, unless the gas is reabsorbed in some way.
- (E) No matter which fuels are used by industry, there is bound to be an increase in the total amount of carbon dioxide in the atmosphere and a consequent unwelcome warming effect on climate.

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23. The ratio of divorces to marriages has increased since 1940. Therefore, there must be a greater proportion of children living with only one natural parent than there was in 1940.
- Which of the following, if true, most strongly weakens the inference drawn above?
- (A) The number of marriages entered into by women twenty-five to thirty-five years old has decreased since 1940.
- (B) When there is a divorce, children are often given the option of deciding which parent they will live with.
- (C) Since 1940 the average number of children in a family has remained approximately steady and has not been subject to wide fluctuations.
- (D) Before 1940 relatively few children whose parents had both died were adopted into single-parent families.
- (E) The proportion of children who must be raised by one parent because the other has died has decreased since 1940 as a result of medical advances.
24. Since the Airline Deregulation Act of 1978, major airline companies in the United States have cut their employee ranks by more than 3,000 persons. Thus, although deregulated competition has afforded consumers dramatically lower fares, the economy of the United States has been harmed by deregulation of the airlines.
- The argument above would be most seriously weakened if it were true that
- (A) a poll of people in the United States expressed exceptionally strong support for airline deregulation
- (B) fewer passengers now travel on commercial airlines than traveled on them in 1978, with the consequence that fewer employees are needed to operate the airlines than were needed in 1978
- (C) airlines now fly a more restricted regular schedule of routes than they did in 1978, with the consequence that the industry is more highly concentrated and competitive than it was before 1978
- (D) several major airlines now enjoy significantly higher profits and levels of employment than they did in the years preceding the Deregulation Act
- (E) smaller carriers of passengers have thrived as a result of deregulation and now provide more new jobs than the major airlines have eliminated since 1978
25. Last year, support for the social and behavioral sciences represented only about three percent of the government's total budget for research funds in the United States. Thus, the particularly sharp reductions imposed on such programs this year seem dictated not by financial constraints but by social philosophy.
- Which of the following is an assumption on which the conclusion of the passage above is based?
- (A) The government funds allocated for research in the social and behavioral sciences are not sufficient for the work that needs to be done.
- (B) The social and behavioral sciences are as valuable as the physical and biological sciences.
- (C) The current reductions will stop research in the social and behavioral sciences.
- (D) Government funding is the primary source of research money in the United States.
- (E) Three percent is an insignificant portion of the government's total budget for research funds.

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. As late as 1891 a speaker assured his audience that since profitable farming was the result of natural ability rather than _____, an education in agriculture was _____.
(A) instruction..vital
(B) effort..difficult
(C) learning..useless
(D) science..intellectual
(E) luck..senseless
2. In spite of the ____ nature of Scotland's terrain, its main roads are surprisingly free from severe _____.
(A) rocky..weather
(B) mountainous..grades
(C) uncharted..flooding
(D) unpredictable..damage
(E) landlocked..slipperiness
3. Walpole's art collection was huge and fascinating, and his novel *The Castle of Otranto* was never out of print; none of this mattered to the Victorians, who ____ him as, at best, _____.
(A) dismissed..insignificant
(B) judged..worthwhile
(C) revered..talented
(D) reviled..meager
(E) taunted..dangerous
4. Since the author frequently ____ other scholars, his objection to disputes is not only irrelevant but also _____.
(A) supports..overbearing
(B) provokes..frightening
(C) quotes..curious
(D) ignores..peevish
(E) attacks..surprising
5. Longdale and Stern discovered that mitochondria and chloroplasts _____ a long, identifiable sequence of DNA; such a coincidence could be _____ only by the transfer of DNA between the two systems.
(A) manufacture..accomplished
(B) reveal..repeated
(C) exhibit..determined
(D) share..explained
(E) maintain..contradicted
6. Until the current warming trend exceeds the range of normal climatic fluctuations, there will be, among scientists, considerable _____ the possibility that increasing levels of atmospheric CO₂ can cause long-term warming effects.
(A) interest in
(B) uncertainty about
(C) enthusiasm for
(D) worry about
(E) experimentation on
7. Without seeming unworldly, William James appeared wholly removed from the _____ of society, the conventionality of academe.
(A) ethos
(B) idealism
(C) romance
(D) paradoxes
(E) commonplaces

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

- Hydrogeology is a science dealing with the properties, distribution, and circulation of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere. The hydrologic cycle, a major topic in this science, is the complete cycle of phenomena through which water passes, beginning as atmospheric water vapor, passing into liquid and solid form as precipitation, thence along and into the ground surface, and finally again returning to the form of atmospheric water vapor by means of evaporation and transpiration.
- The term "geohydrology" is sometimes erroneously used as a synonym for "hydrogeology." Geohydrology is concerned with underground water. There are many formations that contain water but are not part of the hydrologic cycle because of geologic changes that have isolated them underground. These systems are properly termed geohydrologic but not hydrogeologic. Only when a system possesses natural or artificial boundaries that associate the water within it with the hydrologic cycle may the entire system properly be termed hydrogeologic.
17. The author's primary purpose is most probably to
- (A) present a hypothesis
 - (B) refute an argument
 - (C) correct a misconception
 - (D) predict an occurrence
 - (E) describe an enigma

18. It can be inferred that which of the following is most likely to be the subject of study by a geohydrologist?
- (A) Soft, porous rock being worn away by a waterfall
 - (B) Water depositing minerals on the banks of a gorge through which the water runs
 - (C) The trapping of water in a sealed underground rock cavern through the action of an earthquake
 - (D) Water becoming unfit to drink through the release of pollutants into it from a manufacturing plant
 - (E) The changing course of a river channel as the action of the water wears away the rocks past which the river flows
19. The author refers to "many formations" (line 16) primarily in order to
- (A) clarify a distinction
 - (B) introduce a subject
 - (C) draw an analogy
 - (D) emphasize a similarity
 - (E) resolve a conflict

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- The historian Frederick J. Turner wrote in the 1890's that the agrarian discontent that had been developing steadily in the United States since about 1870 had been precipitated by the
- (5) closing of the internal frontier—that is, the depletion of available new land needed for further expansion of the American farming system. Not only was Turner's thesis influential at the time, it was later adopted and elaborated
- (10) by other scholars, such as John D. Hicks in *The Populist Revolt* (1931). Actually, however, new lands were taken up for farming in the United States throughout and beyond the nineteenth century. In the 1890's, when agrarian discontent
- (15) had become most acute, 1,100,000 new farms were settled, which was 500,000 more than had been settled during the previous decade. After 1890, under the terms of the Homestead Act and its successors, more new land was taken up for
- (20) farming than had been taken up for this purpose in the United States up until that time. It is true that a high proportion of the newly farmed land was suitable only for grazing and dry farming, but agricultural practices had become sufficiently advanced to make it possible to increase the profitability of farming by utilizing even these relatively barren lands.
- The emphasis given by both scholars and statesmen to the presumed disappearance of the
- (30) American frontier helped to obscure the great importance of changes in the conditions and consequences of international trade that occurred during the second half of the nineteenth century. In 1869 the Suez Canal was opened and
- (35) the first transcontinental railroad in the United States was completed. An extensive network of telegraph and telephone communications was spun: Europe was connected by submarine cable with the United States in 1866 and with
- (40) South America in 1874. By about 1870 improvements in agricultural technology made possible the full exploitation of areas that were most suitable for extensive farming on a mechanized basis. Huge tracts of land were being settled and
- (45) farmed in Argentina, Australia, Canada, and in the American West, and these areas were joined with one another and with the countries of Europe into an interdependent market system. As a consequence, agrarian depressions no
- (50) longer were local or national in scope, and they struck several nations whose internal frontiers had not vanished or were not about to vanish. Between the early 1870's and the 1890's, the mounting agrarian discontent in America paralleled the almost uninterrupted decline in the
- (55) prices of American agricultural products on foreign markets. Those staple-growing farmers in the United States who exhibited the greatest discontent were those who had become most dependent on foreign markets for the sale of their products. Insofar as Americans had been deterred from taking up new land for farming, it was because market conditions had made this period a perilous time in which to do so.
20. The author is primarily concerned with
- (A) showing that a certain interpretation is better supported by the evidence than is an alternative explanation
- (B) developing an alternative interpretation by using sources of evidence that formerly had been unavailable
- (C) questioning the accuracy of the evidence that most scholars have used to counter the author's own interpretation
- (D) reviewing the evidence that formerly had been thought to obscure a valid interpretation
- (E) presenting evidence in support of a controversial version of an earlier interpretation
21. According to the author, changes in the conditions of international trade resulted in an
- (A) underestimation of the amount of new land that was being farmed in the United States
- (B) underutilization of relatively small but rich plots of land
- (C) overexpansion of the world transportation network for shipping agricultural products
- (D) extension of agrarian depressions beyond national boundaries
- (E) emphasis on the importance of market forces in determining the prices of agricultural products

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22. The author implies that the change in the state of the American farmer's morale during the latter part of the nineteenth century was traceable to the American farmer's increasing perception that the
- (A) costs of cultivating the land were prohibitive within the United States
 - (B) development of the first transcontinental railroad in the United States occurred at the expense of the American farmer
 - (C) American farming system was about to run out of the new farmland that was required for its expansion
 - (D) prices of American agricultural products were deteriorating especially rapidly on domestic markets
 - (E) proceeds from the sales of American agricultural products on foreign markets were unsatisfactory
23. According to the passage, which of the following occurred prior to 1890?
- (A) Frederick J. Turner's thesis regarding the American frontier became influential.
 - (B) The Homestead Act led to an increase in the amount of newly farmed land in the United States.
 - (C) The manufacturers of technologically advanced agricultural machinery rapidly increased their marketing efforts.
 - (D) Direct lines of communication were constructed between the United States and South America.
 - (E) Technological advances made it fruitful to farm extensively on a mechanized basis.
24. The author implies that, after certain territories and countries had been joined into an inter-dependent market system in the nineteenth century, agrarian depressions within that system
- (A) spread to several nations, excluding those in which the internal frontier remained open
 - (B) manifested themselves in several nations, including those in which new land remained available for farming
 - (C) slowed down the pace of new technological developments in international communications and transportation
 - (D) affected the local and national prices of the nonagricultural products of several nations
 - (E) encouraged several nations to sell more of their agricultural products on foreign markets
25. The author provides information concerning newly farmed lands in the United States (lines 11-27) as evidence in direct support of which of the following?
- (A) A proposal by Frederick J. Turner that was later disputed by John D. Hicks
 - (B) An elaboration by John D. Hicks of a thesis that formerly had been questioned by Frederick J. Turner
 - (C) The established view that was disputed by those scholars who adopted the thesis of Frederick J. Turner
 - (D) The thesis that important changes occurred in the nature of international trade during the second half of the nineteenth century
 - (E) The view that the American frontier did not become closed during the nineteenth century or soon thereafter
26. The author implies that the cause of the agrarian discontent was
- (A) masked by the vagueness of the official records on newly settled farms
 - (B) overshadowed by disputes on the reliability of the existing historical evidence
 - (C) misidentified as a result of influential but erroneous theorizing
 - (D) overlooked because of a preoccupation with market conditions
 - (E) undetected because visible indications of the cause occurred so gradually and sporadically
27. The author's argument implies that, compared to the yearly price changes that actually occurred on foreign agricultural markets during the 1880's, American farmers would have most preferred yearly price changes that were
- (A) much smaller and in the same direction
 - (B) much smaller but in the opposite direction
 - (C) slightly smaller and in the same direction
 - (D) similar in size but in the opposite direction
 - (E) slightly greater and in the same direction

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5. Speakers of a language rely on their general knowledge of the world in order to make sense of statements they hear or read. Computers can easily be "taught" the formal rules of a human language, but supplying them with this general knowledge is another matter. It is extremely difficult to develop computers that can extract the meaning of ordinary sentences.

Which of the following can be validly inferred from the passage above?

- (A) The interpretation of the meaning of ordinary sentences is dependent on a general knowledge of the world.
- (B) Computers that can be "taught" the rules of a human language can understand statements in that language.
- (C) It is futile to try to "teach" computers the formal rules of any language.
- (D) Speakers of a language often must reject the formal rules of that language in order to understand simple sentences.
- (E) Computers that can understand ordinary sentences have all the basic capabilities necessary to become "speakers" of the language.

6. In mammals it is the secondary palate that permits breathing while eating. Clearly, breathing while eating is necessary to maintain the high rate of metabolism of mammals.

The author's assertions would be most weakened by the discovery of a mammalian species that had a

- (A) high rate of metabolism and the ability to breathe while eating
- (B) low rate of metabolism and the ability to breathe while eating
- (C) low rate of metabolism and no ability to breathe while eating
- (D) high rate of metabolism and no secondary palate
- (E) low rate of metabolism and a secondary palate

Questions 7-9

The cast of a benefit program will consist of exactly four actors to be selected from the seven actors P, Q, R, S, T, U, and V according to the following conditions:

Either P or T must be in the cast, but they cannot both be in the cast.
If T is in the cast, then Q must be in the cast.
If U is in the cast, then neither P nor R can be in the cast.

7. If U is in the cast, which of the following must also be in the cast?

- (A) P
- (B) Q
- (C) R
- (D) S
- (E) V

8. If P is in the cast, any of the following groups of three could make up the rest of the cast EXCEPT

- (A) Q, R, and S
- (B) Q, R, and V
- (C) Q, S, and V
- (D) R, S, and V
- (E) S, U, and V

9. If S is in the cast but needs to be replaced, which of the following actors, if not in the cast, is eligible to replace S regardless of the composition of the rest of the cast?

- (A) P
- (B) R
- (C) T
- (D) U
- (E) V

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23. Forty-five percent of all blood donated in the United States is type O. Type O blood is essential for emergencies where there is no time for determining the blood type of victims because type O blood can be used for everyone. Type O blood is unique in that it is compatible with blood of all types: any recipient, regardless of blood type, can be given it. But precisely because of this special usefulness, type O blood is chronically in short supply.
- If the statements in the passage above are true, which of the following must also be true?
- (A) The special usefulness of type O blood lies in the fact that it matches the blood type of most people.
(B) Supplies of type O blood are continuously so low that type O blood is unavailable for emergencies, where its usefulness would be greatest.
(C) Forty-five percent of the total population of the United States has type O blood, which makes type O the most common blood type.
(D) Any decision to give blood of any type other than O needs to be based on knowledge of the recipient's blood type.
(E) Type O blood is the only blood that cannot be typed as fast as needed in emergencies.
25. It has been hypothesized that much of the matter in the universe is "dark"; i.e., unseen. Studies have shown that galaxies in many galaxy clusters are moving faster with respect to one another than they would if visible stars constituted all their mass. The studies suggest that the galaxies are moving under the gravitational influence of unseen mass in considerable quantity.

Which of the following is an assumption underlying the passage above?

- (A) Measurements of the speed of moving galaxies are extremely unreliable.
(B) The workings of gravitational forces are not particularly well understood.
(C) The aggregate mass of visible stars in the galaxies mentioned above can be estimated with some confidence.
(D) The general composition of unseen matter in the universe has been determined.
(E) Without exception, the galaxies mentioned above move toward one another.

- * 24. Many geologists theorize that the trail of volcanic craters and cinder cones along the Snake River plain of southern Idaho was produced as the North American continent slid westward over a stationary "plume," a vertical channel through which molten rock rose intermittently from the Earth's core to burst through its crust.

Which of the following, if true, tends to support the geologists' theory of how the trail was produced?

- (A) The largest craters and cinder cones are on the eastern margin of the trail.
(B) The most violent volcanic activity apparently occurred at the western margin of the trail.
(C) The craters and cinder cones are evenly spaced throughout the extent of the trail.
(D) The newest craters and cinder cones are on the eastern margin of the trail.
(E) The craters and cinder cones on the western margin of the trail generally took longer to form than did those on the eastern margin.

TEST 17

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Created to serve as perfectly as possible their workaday -----, the wooden storage boxes made in America's Shaker communities are now ----- for their beauty.
(A) environment..accepted
(B) owners..employed
(C) function..valued
(D) reality..transformed
(E) image..seen
2. In order to ----- her theory that the reactions are -----, the scientist conducted many experiments, all of which showed that the heat of the first reaction is more than twice that of the second.
(A) support..different
(B) comprehend..constant
(C) evaluate..concentrated
(D) capture..valuable
(E) demonstrate..problematic
3. The sheer bulk of data from the mass media seems to overpower us and drive us to ----- accounts for an easily and readily digestible portion of news.
(A) insular (B) investigative (C) synoptic
(D) subjective (E) sensational
4. William James lacked the usual ----- death; writing to his dying father, he spoke without ----- about the old man's impending death.
(A) longing for..regret
(B) awe of..inhibition
(C) curiosity about..rancor
(D) apprehension of..eloquence
(E) anticipation of..commiseration

5. Current data suggest that, although ----- states between fear and aggression exist, fear and aggression are as distinct physiologically as they are psychologically.
(A) simultaneous
(B) serious
(C) exceptional
(D) partial
(E) transitional
6. It is ironic that a critic of such overwhelming vanity now suffers from a measure of the oblivion to which he was forever ----- others; in the end, all his ----- has only worked against him.
(A) dedicating..self-possession
(B) leading..self-righteousness
(C) consigning..self-adulation
(D) relegating..self-sacrifice
(E) condemning..self-analysis
7. Famous among job seekers for its -----, the company, quite apart from generous salaries, bestowed on its executives annual bonuses and such ----- as low-interest home mortgages and company cars.
(A) magnanimity..reparations
(B) inventiveness..benefits
(C) largesse..perquisites
(D) discernment..prerogatives
(E) altruism..credits

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Visual recognition involves storing and retrieving memories. Neural activity, triggered by the eye, forms an image in the brain's memory system that constitutes an internal representation of the viewed object. When an object is encountered again, it is matched with its internal representation and thereby recognized. Controversy surrounds the question of whether recognition is a parallel, one-step process or a serial, step-by-step one. Psychologists of the Gestalt school maintain that objects are recognized as wholes in a parallel procedure: the internal representation is matched with the retinal image in a single operation. Other psychologists have proposed that internal representation features are matched serially with an object's features. Although some experiments show that, as an object becomes familiar, its internal representation becomes more holistic and the recognition process correspondingly more parallel, the weight of evidence seems to support the serial hypothesis, at least for objects that are not notably simple and familiar.

17. The author is primarily concerned with

- (A) explaining how the brain receives images
- (B) synthesizing hypotheses of visual recognition
- (C) examining the evidence supporting the serial-recognition hypothesis
- (D) discussing visual recognition and some hypotheses proposed to explain it
- (E) reporting on recent experiments dealing with memory systems and their relationship to neural activity

18. According to the passage, Gestalt psychologists make which of the following suppositions about visual recognition?

- I. A retinal image is in exactly the same form as its internal representation.
 - II. An object is recognized as a whole without any need for analysis into component parts.
 - III. The matching of an object with its internal representation occurs in only one step.
- (A) II only
 - (B) III only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

19. It can be inferred from the passage that the matching process in visual recognition is

- (A) not a neural activity
- (B) not possible when an object is viewed for the very first time
- (C) not possible if a feature of a familiar object is changed in some way
- (D) only possible when a retinal image is received in the brain as a unitary whole
- (E) now fully understood as a combination of the serial and parallel processes

20. In terms of its tone and form, the passage can best be characterized as

- (A) a biased exposition
- (B) a speculative study
- (C) a dispassionate presentation
- (D) an indignant denial
- (E) a dogmatic explanation

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In large part as a consequence of the feminist movement, historians have focused a great deal of attention in recent years on determining more accurately the status of women in various periods. Although much has been accomplished for the modern period, premodern cultures have proved more difficult: sources are restricted in number, fragmentary, difficult to interpret, and often contradictory. Thus it is not particularly surprising that some earlier scholarship concerning such cultures has so far gone unchallenged. An example is Johann Bachofen's 1861 treatise on Amazons, women-ruled societies of questionable existence contemporary with ancient Greece.

Starting from the premise that mythology and legend preserve at least a nucleus of historical fact, Bachofen argued that women were dominant in many ancient societies. His work was based on a comprehensive survey of references in the ancient sources to Amazonian and other societies with matrilineal customs—societies in which descent and property rights are traced through the female line. Some support for his theory can be found in evidence such as that drawn from Herodotus, the Greek “historian” of the fifth century B.C., who speaks of an Amazonian society, the Sauromatae, where the women hunted and fought in wars. A woman in this society was not allowed to marry until she had killed a person in battle.

Nonetheless, this assumption that the first recorders of ancient myths have preserved facts is problematic. If one begins by examining why ancients refer to Amazons, it becomes clear that ancient Greek descriptions of such societies were meant not so much to represent observed historical fact—real Amazonian societies—but rather to offer “moral lessons” on the supposed outcome of women’s rule in their own society. The Amazons were often characterized, for example, as the equivalents of giants and centaurs, enemies to be slain by Greek heroes. Their customs were presented not as those of a respectable society, but as the very antitheses of ordinary Greek practices.

Thus, I would argue, the purpose of accounts of the Amazons for their male Greek recorders was didactic, to teach both male and female Greeks that all-female groups, formed by withdrawal from traditional society, are destructive and dangerous. Myths about the Amazons were used as arguments for the male-dominated status quo, in which groups composed exclusively of either sex were not permitted to segregate themselves permanently from society. Bachofen was thus misled in his reliance on myths for information about the status of women. The sources that will probably tell contemporary historians most about women in the ancient world are such social documents as gravestones, wills, and marriage contracts. Studies of such documents have already begun to show how mistaken we are when we try to derive our picture of the ancient world exclusively from literary sources, especially myths.

21. The primary purpose of the passage is to
 - (A) compare competing new approaches to understanding the role of women in ancient societies
 - (B) investigate the ramifications of Bachofen’s theory about the dominance of women in ancient societies
 - (C) explain the burgeoning interest among historians in determining the actual status of women in various societies
 - (D) analyze the nature of Amazonian society and uncover similarities between it and the Greek world
 - (E) criticize the value of ancient myths in determining the status of women in ancient societies
22. All of the following are stated by the author as problems connected with the sources for knowledge of premodern cultures EXCEPT
 - (A) partial completeness
 - (B) restricted accessibility
 - (C) difficulty of interpretation
 - (D) limited quantity
 - (E) tendency toward contradiction
23. Which of the following can be inferred from the passage about the myths recorded by the ancient Greeks?
 - I. They sometimes included portrayals of women holding positions of power.
 - II. They sometimes contained elaborate explanations of inheritance customs.
 - III. They comprise almost all of the material available to historians about ancient Greece.
 - (A) I only
 - (B) III only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

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24. Which of the following is presented in the passage as evidence supporting the author's view of the ancient Greeks' descriptions of the Amazons?
- (A) The requirement that Sauromatae women kill in battle before marrying
(B) The failure of historians to verify that women were ever governors of ancient societies
(C) The classing of Amazons with giants and centaurs
(D) The well-established unreliability of Herodotus as a source of information about ancient societies
(E) The recent discovery of ancient societies with matrilineal customs
25. It can be inferred from the passage that the probable reactions of many males in ancient Greece to the idea of a society ruled by women could best be characterized as
- (A) confused and dismayed
(B) wary and hostile
(C) cynical and disinterested
(D) curious but fearful
(E) excited but anxious
26. The author suggests that the main reason for the persisting influence of Bachofen's work is that
- (A) feminists have shown little interest in ancient societies
(B) Bachofen's knowledge of Amazonian culture is unparalleled
(C) reliable information about the ancient world is difficult to acquire
(D) ancient societies show the best evidence of women in positions of power
(E) historians have been primarily interested in the modern period
27. The author's attitude toward Bachofen's treatise is best described as one of
- (A) qualified approval
(B) profound ambivalence
(C) studied neutrality
(D) pointed disagreement
(E) unmitigated hostility

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SECTION 2
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. There are no solitary, free-living creatures; every form of life is ----- other forms.
(A) segregated from (B) parallel to
(C) dependent on (D) overshadowed by
(E) mimicked by
2. The sale of Alaska was not so much an American coup as a matter of ----- for an imperial Russia that was short of cash and unable to ----- its own continental coastline.
(A) negligence..fortify
(B) custom..maintain
(C) convenience..stabilize
(D) expediency..defend
(E) exigency..reinforce
3. Despite assorted effusions to the contrary, there is no necessary link between scientific skill and humanism, and, quite possibly, there may be something of a ----- between them.
(A) generality (B) fusion (C) congruity
(D) dichotomy (E) reciprocity
4. A common argument claims that in folk art, the artist's subordination of technical mastery to intense feeling ----- the direct communication of emotion to the viewer.
(A) facilitates (B) averts (C) neutralizes
(D) implies (E) represses
5. While not completely nonplussed by the unusually caustic responses from members of the audience, the speaker was nonetheless visibly ----- by their lively criticism.
(A) humiliated
(B) discomfited
(C) deluded
(D) disgraced
(E) tantalized
6. In eighth-century Japan, people who ----- wasteland were rewarded with official ranks as part of an effort to overcome the shortage of ----- fields.
(A) conserved..forested
(B) reclaimed..arable
(C) cultivated..domestic
(D) irrigated..accessible
(E) located..desirable
7. If duty is the natural ----- of one's ----- the course of future events, then people who are powerful have duty placed on them whether they like it or not.
(A) correlate..understanding of
(B) outgrowth..control over
(C) determinant..involvement in
(D) mitigant..preoccupation with
(E) arbiter..responsibility for

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Initially the Vinaver theory that Malory's eight romances, once thought to be fundamentally unified, were in fact eight independent works produced both a sense of relief and an unpleasant shock. Vinaver's theory comfortably explained away the apparent contradictions of chronology and made each romance independently satisfying. It was, however, disagreeable to find that what had been thought of as one book was now eight books. Part of this response was the natural reaction to the disturbance of set ideas. Nevertheless, even now, after lengthy consideration of the theory's refined but legitimate observations, one cannot avoid the conclusion that the eight romances are only one work. It is not quite a matter of disagreeing with the theory of independence, but of rejecting its implications: that the romances may be taken in any or no particular order, that they have no cumulative effect, and that they are as separate as the works of a modern novelist.

17. The primary purpose of the passage is to
- (A) discuss the validity of a hypothesis
 - (B) summarize a system of general principles
 - (C) propose guidelines for future argument
 - (D) stipulate conditions for acceptance of an interpretation
 - (E) deny accusations about an apparent contradiction
18. It can be inferred from the passage that the author believes which of the following about Malory's works?
- I. There are meaningful links between and among the romances.
 - II. The subtleties of the romances are obscured when they are taken as one work.
 - III. Any contradictions in chronology among the romances are less important than their overall unity.
- (A) I only
 - (B) III only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

19. The author of the passage concedes which of the following about the Vinaver theory?
- (A) It gives a clearer understanding of the unity of Malory's romances.
 - (B) It demonstrates the irrationality of considering Malory's romances to be unified.
 - (C) It establishes acceptable links between Malory's romances and modern novels.
 - (D) It unifies earlier and later theories concerning the chronology of Malory's romances.
 - (E) It makes valid and subtle comments about Malory's romances.
20. It can be inferred from the passage that, in evaluating the Vinaver theory, some critics were
- (A) frequently misled by the inconsistencies in Malory's work
 - (B) initially biased by previous interpretations of Malory's work
 - (C) conceptually displeased by the general interpretation that Vinaver rejected
 - (D) generally in agreement with Vinaver's comparisons between Malory and modern novelists
 - (E) originally skeptical about Vinaver's early conclusions with respect to modern novels

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We can distinguish three different realms of matter, three levels on the quantum ladder. The first is the atomic realm, which includes the world of atoms, their interactions, and the structures that are formed by them, such as molecules, liquids and solids, and gases and plasmas. This realm includes all the phenomena of atomic physics, chemistry, and, in a certain sense, biology. The energy exchanges taking place in this realm are of a relatively low order. If these exchanges are below one electron volt, such as in the collisions between molecules of the air in a room, then atoms and molecules can be regarded as elementary particles. That is, they have "conditional elementarity" because they keep their identity and do not change in any collisions or in other processes at these low energy exchanges. If one goes to higher energy exchanges, say 10^4 electron volts, then atoms and molecules will decompose into nuclei and electrons; at this level, the latter particles must be considered as elementary. We find examples of structures and processes of this first rung of the quantum ladder on Earth, on planets, and on the surfaces of stars.

The next rung is the nuclear realm. Here the energy exchanges are much higher, on the order of millions of electron volts. As long as we are dealing with phenomena in the atomic realm, such amounts of energy are unavailable, and most nuclei are inert: they do not change. However, if one applies energies of millions of electron volts, nuclear reactions, fission and fusion, and the processes of radioactivity occur; our elementary particles then are protons, neutrons, and electrons. In addition, nuclear processes produce neutrinos, particles that have no detectable mass or charge. In the universe, energies at this level are available in the centers of stars and in star explosions. Indeed, the energy radiated by the stars is produced by nuclear reactions. The natural

radioactivity we find on Earth is the long-lived remnant of the time when now-earthly matter was expelled into space by a major stellar explosion.

The third rung of the quantum ladder is the subnuclear realm. Here we are dealing with energy exchanges of many billions of electron volts. We encounter excited nucleons, new types of particles such as mesons, heavy electrons, quarks, and gluons, and also antimatter in large quantities. The gluons are the quanta, or smallest units, of the force (the strong force) that keeps the quarks together. As long as we are dealing with the atomic or nuclear realm, these new types of particles do not occur and the nucleons remain inert. But at subnuclear energy levels, the nucleons and mesons appear to be composed of quarks, so that the quarks and gluons figure as elementary particles.

21. The primary topic of the passage is which of the following?

- (A) The interaction of the realms on the quantum ladder
- (B) Atomic structures found on Earth, on other planets, and on the surfaces of stars
- (C) Levels of energy that are released in nuclear reactions on Earth and in stars
- (D) Particles and processes found in the atomic, nuclear, and subnuclear realms
- (E) New types of particles occurring in the atomic realm

GO ON TO THE NEXT PAGE.

22. According to the passage, radioactivity that occurs naturally on Earth is the result of
- (A) the production of particles that have no detectable mass or electric charge
 - (B) high energy exchanges on the nuclear level that occurred in an ancient explosion in a star
 - (C) processes that occur in the center of the Sun, which emits radiation to the Earth
 - (D) phenomena in the atomic realm that cause atoms and molecules to decompose into nuclei and electrons
 - (E) high-voltage discharges of electricity that took place in the atmosphere of the Earth shortly after the Earth was formed
23. The author organizes the passage by
- (A) making distinctions between two groups of particles, those that are elementary and those that are composite
 - (B) explaining three methods of transferring energy to atoms and to the smaller particles that constitute atoms
 - (C) describing several levels of processes, increasing in energy, and corresponding sets of particles, generally decreasing in size
 - (D) putting forth an argument concerning energy levels and then conceding that several qualifications of that argument are necessary
 - (E) making several successive refinements of a definition of elementarity on the basis of several groups of experimental results
24. According to the passage, which of the following can be found in the atomic realm?
- (A) More than one level of energy exchange
 - (B) Exactly one elementary particle
 - (C) Exactly three kinds of atomic structures
 - (D) Three levels on the quantum ladder
 - (E) No particles smaller than atoms
25. According to the author, gluons are not
- (A) considered to be detectable
 - (B) produced in nuclear reactions
 - (C) encountered in subnuclear energy exchanges
 - (D) related to the strong force
 - (E) found to be conditionally elementary
26. At a higher energy level than the subnuclear level described, if such a higher level exists, it can be expected on the basis of the information in the passage that there would probably be
- (A) excited nucleons
 - (B) elementary mesons
 - (C) a kind of particle without detectable mass or charge
 - (D) exchanges of energy on the order of millions of electron volts
 - (E) another set of elementary particles
27. The passage speaks of particles as having conditional elementarity if they
- (A) remain unchanged at a given level of energy exchange
 - (B) cannot be decomposed into smaller constituents
 - (C) are mathematically simpler than some other set of particles
 - (D) release energy at a low level in collisions
 - (E) belong to the nuclear level on the quantum ladder

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7. Infection is the biggest threat to the life of a burn patient. The skin, the body's natural barrier against bacteria, is damaged or gone in the burned areas. The bacteria that are a threat are unpredictable in both variety and number. Moreover, those found affecting any one patient may change completely from one day to the next. The standard treatment, therefore, is the administration of broad-spectrum antibiotics.

Considering only the information given about burn patients in the passage above, which of the following is most likely to enhance the effectiveness of the standard treatment of a burn patient?

- (A) Keeping the patient in an air-conditioned room until recovery is assured
- (B) Keeping the areas affected by burns as dry as possible
- (C) Continuously monitoring the patient's vital signs with electronic equipment
- (D) Feeding the patient a diet extra rich in calories
- (E) Keeping the patient in a maximally sterile environment

8. Dormitories range from two to six stories in height. If a dormitory room is above the second floor, it has a fire escape.

If the statements above are true, which of the following must also be true?

- (A) Second-floor dormitory rooms do not have fire escapes.
- (B) Third-floor dormitory rooms do not have fire escapes.
- (C) Only dormitory rooms above the second floor have fire escapes.
- (D) Fourth-floor dormitory rooms have fire escapes.
- (E) Some two-story dormitories do not have fire escapes.

9. The garment industry is labor-intensive; the production of garments requires the employment of a relatively large number of people. The auto industry is capital-intensive; a large amount of money is invested in elaborate equipment run by a relatively small number of people. If fringe benefits are not considered, a typical United States garment worker in 1979 earned 46 percent of a typical auto worker's wages.

Which of the following, if true, is likely to be among the factors that account for the disparity between auto workers' and garment workers' wages?

- (A) There is generally less variation among the wages of garment industry workers than among those of auto industry workers.
- (B) Wage increases in the auto industry have a smaller effect on manufacturers' total costs than do wage increases in the garment industry.
- (C) The fringe benefits that auto makers provide for their employees are more comprehensive than are those provided for garment workers.
- (D) The auto industry faces more competition from companies outside the United States paying low wages than does the garment industry.
- (E) The auto industry employs a larger total number of workers than does the garment industry.

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23. It was long thought that a now-rare disease of the joints, alkaptonuria, was epidemic in Egypt 2,500 years ago. Evidence came from the high proportion of mummies from that period showing symptoms of the disease. Recently, however, chemical analyses of skeletons have led scientists to propose that the joint damage was actually caused by chemicals used by Egyptian embalmers.
- Which of the following, if true, would additionally weaken the traditional view that alkaptonuria afflicted many Egyptians 2,500 years ago?
- (A) X-rays of the mummies showed shadows that clearly suggested joint damage, and recent inspection of the skeletons has confirmed that hypothesis.
- (B) Although alkaptonuria is a disease that can be inherited, it did not appear in the descendants of the Egyptian population in which the symptoms were found.
- (C) Egyptian embalming methods were highly secret, and scientists are still not certain of the nature of some of the chemicals that were used.
- (D) Possible evidence of alkaptonuria has been pointed out in pictures representing the human figure found on artifacts left by other Middle Eastern cultures of that period.
- (E) Some mummies of that period show no evidence of joint damage at all.
24. The Census Bureau reported that the median family income, after adjustment for inflation, increased 1.6 percent in 1983. Poverty normally declines when family income goes up, but the national poverty rate remained at its highest level in eighteen years in 1983. The Census Bureau offered two possible explanations: the lingering effects of the deep and lengthy 1981-1982 recession, and increases in the number of people living in families headed by women and in the number of adults not living with any relatives. Both groups are likely to be poorer than the population as a whole.
- Which of the following conclusions can be properly drawn from this report?
- (A) The national poverty rate has increased steadily over the last eighteen years.
- (B) The national poverty rate will increase when there are lingering effects of an earlier recession.
- (C) The median family income can increase even though the family income of some subgroups within the population declines or fails to increase.
- (D) The category of adults not living with any relatives is the most critical group in the determination of whether the economy has improved.
- (E) The median family income is affected more by changes in family patterns than by the extent of expansion or recession of the national economy.

GO ON TO THE NEXT PAGE.

25. For many people in the United States who are concerned about the cost of heating homes and businesses, wood has become an alternative energy source to coal, oil, and gas. Nevertheless, wood will never supply more than a modest fraction of our continuing energy needs.

Which of the following, if true, does NOT support the claim made in the last sentence in the passage above?

- (A) There are many competing uses for a finite supply of wood, and suppliers give the lumber and paper industries a higher priority than they give individual consumers.
- (B) Wood produces thick smoke in burning, and its extensive use in densely populated cities would violate federal antipollution guidelines.
- (C) There are relatively narrow limits to how far wood can be trucked before it becomes more economical to burn the gasoline used for transportation instead of the wood.
- (D) Most apartment dwellers do not have adequate storage space for the amount of wood necessary to supply energy for heating.
- (E) Most commercial users of energy are located within range of a wood supply, and two-thirds of United States homes are located outside of metropolitan areas.

- * 6. Currently, the number of first-time admissions of individuals diagnosed as manic-depressives to hospitals in Great Britain exceeds by nine times the number of admissions of such patients to public and private hospitals in the United States, even though the population size of the United States is many times that of Great Britain.

Which of the following, if true, would be most useful to an attempt to explain the situation described above?

- (A) The term manic-depressive refers to a wider range of mentally ill patients in Great Britain than it does in the United States.
- (B) The admission rate in the United States includes those individuals who visit clinics for the first time as well as those who are admitted directly to hospitals.
- (C) A small percentage of patients diagnosed as manic-depressive in Great Britain are admitted to private nursing homes rather than hospitals.
- (D) The variety of training institutions in psychology in the United States is greater than in Great Britain, reflecting the variety of schools of psychology that have developed in the United States.
- (E) Seeking professional assistance for mental health problems no longer carries a social stigma in the United States, as it once did.

7. Some soil scientists have asserted that decaying matter on the forest floor is a far greater source of the acidity in mountain lakes than is the acid rain that falls on these lakes. Therefore, they contend, reducing acid rain will not significantly reduce the acidity levels of mountain lakes.

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

- (A) It is natural for mountain lakes to have acidity levels higher than those of other lakes.
- (B) The harmful effects of increased acidity levels in lakes have been greatly underestimated.
- (C) Acid rain is found in urban and heavily industrialized regions of the country.
- (D) There is much disagreement among soil scientists about the causes of acid rain.
- (E) While plant life remains, acid rain significantly increases the amount of decaying organic matter in natural environments.

8. Unlike other forms of narrative art, a play, to be successful, must give pleasure to its immediate audience by reflecting the concerns and values of that audience. A novel can achieve success over months or even years, but a play must be a hit or perish. Successful drama of the Restoration period, therefore, is a good index to the typical tastes and attitudes of its time.

The author of the passage above assumes that

- (A) plays written for Restoration audiences do not appeal to modern audiences
- (B) plays are superior to novels as a form of narrative art
- (C) Restoration audiences were representative of the whole population of their time
- (D) playgoers and novel readers are typically distinct and exclusive groups
- (E) Restoration drama achieved popular success at the expense of critical success

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23. It is important to teach students to use computers effectively. Therefore, students should be taught computer programming in school.

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

- (A) Only people who use computers effectively are skilled at computer programming.
- (B) Only people skilled at computer programming use computers effectively.
- (C) Some people who use computers effectively cannot write computer programs.
- (D) Some schools teach computer programming more effectively than others.
- (E) Most people who are able to program computers use computers effectively.

24. Butterfat gets its yellowish color from carotene, the fat-soluble vitamin A precursor that is also responsible for the color of carrots. Not all butterfat, however, is equally yellow. Some breeds of cows are more efficient than others at converting carotene to the colorless vitamin A.

If butter made from the milk of holstein cows is much paler than that made from the milk of jersey or guernsey cows, then the facts above suggest that

- (A) there is less butterfat in the milk of holsteins than in the milk of jerseys or guernseys
- (B) there is more vitamin A in the butterfat of holsteins than in the butterfat of jerseys or guernseys
- (C) there is more carotene in the butterfat of holsteins than in the butterfat of jerseys or guernseys
- (D) holsteins are less efficient converters of carotene than are jerseys or guernseys
- (E) the carotene in the milk of holsteins is less fat-soluble than the carotene in the milk of jerseys or guernseys

25. X melts at a higher temperature than P melts. Y melts at a lower temperature than P melts, but at a higher temperature than Q melts.

If the statements above are true, it can be concluded with certainty that S melts at a higher temperature than Y melts if one knows in addition that

- (A) Q and P melt at a higher temperature than S melts
- (B) X melts at a higher temperature than S melts
- (C) P melts at a lower temperature than S melts
- (D) Q melts at the same temperature that S melts
- (E) S melts at a higher temperature than Q melts

TEST 18

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Physicists rejected the innovative experimental technique because, although it ----- some problems, it also produced new -----.
(A) clarified..data
(B) eased..interpretations
(C) resolved..complications
(D) caused..hypotheses
(E) revealed..inconsistencies
- * 2. During a period of protracted illness, the sick can become infirm, ----- both the strength to work and many of the specific skills they once possessed.
(A) regaining (B) denying (C) pursuing
(D) insuring (E) losing
3. The pressure of population on available resources is the key to understanding history; consequently, any historical writing that takes no cognizance of ----- facts is ----- flawed.
(A) demographic..intrinsically
(B) ecological..marginally
(C) cultural..substantively
(D) psychological..philosophically
(E) political..demonstratively
4. It is puzzling to observe that Jones's novel has recently been criticized for its ----- structure, since commentators have traditionally argued that its most obvious ----- is its relentlessly rigid, indeed schematic, framework.
(A) attention to..preoccupation
(B) speculation about..characteristic
(C) parody of..disparity
(D) violation of..contradiction
(E) lack of..flaw
5. It comes as no surprise that societies have codes of behavior; the character of the codes, on the other hand, can often be -----.
(A) predictable (B) unexpected
(C) admirable (D) explicit (E) confusing
6. The characterization of historical analysis as a form of fiction is not likely to be received ----- by either historians or literary critics, who agree that history and fiction deal with ----- orders of experience.
(A) quietly..significant
(B) enthusiastically..shifting
(C) passively..unusual
(D) sympathetically..distinct
(E) contentiously..realistic
7. For some time now, ----- has been presumed not to exist: the cynical conviction that everybody has an angle is considered wisdom.
(A) rationality
(B) flexibility
(C) diffidence
(D) disinterestedness
(E) insincerity

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The evolution of intelligence among early large mammals of the grasslands was due in great measure to the interaction between two ecologically synchronized groups of these ani-

- (5) mals, the hunting carnivores and the herbivores that they hunted. The interaction resulting from the differences between predator and prey led to a general improvement in brain functions; however, certain components of intelligence were

(10) improved far more than others.

The kind of intelligence favored by the interplay of increasingly smarter catchers and increasingly keener escapers is defined by attention—that aspect of mind carrying con-

- (15) sciousness forward from one moment to the next. It ranges from a passive, free-floating awareness to a highly focused, active fixation. The range through these states is mediated by the arousal system, a network of tracts converg-

(20) ing from sensory systems to integrating centers in the brain stem. From the more relaxed to the more vigorous levels, sensitivity to novelty is increased. The organism is more awake, more vigilant; this increased vigilance results in the

- (25) apprehension of ever more subtle signals as the organism becomes more sensitive to its surroundings. The processes of arousal and concentration give attention its direction. Arousal is at first general, with a flooding of impulses in the

(30) brain stem; then gradually the activation is channeled. Thus begins concentration, the holding of consistent images. One meaning of intelligence is the way in which these images and other alertly searched information are used in the context of previous experience. Consciousness links past attention to the present and permits the integration of details with perceived ends and purposes.

- (35) The elements of intelligence and consciousness come together marvelously to produce different styles in predator and prey. Herbivores and carnivores develop different kinds of attention related to escaping or chasing. Although in both kinds of animal, arousal stimulates the

(40) production of adrenaline and norepinephrine by the adrenal glands, the effect in herbivores is primarily fear, whereas in carnivores the effect is primarily aggression. For both, arousal attunes the animal to what is ahead. Perhaps it does not

- (45) experience forethought as we know it, but the animal does experience something like it. The predator is searchingly aggressive, innerdirected, tuned by the nervous system and the adrenal hormones, but aware in a sense closer to human

(55) consciousness than, say, a hungry lizard's instinctive snap at a passing beetle. Using past events as a framework, the large mammal predator is working out a relationship between movement and food, sensitive to possibilities in cold trails

- (60) and distant sounds—and yesterday's unforget- less. The herbivore prey is of a different mind. Its mood of wariness rather than searching and its attitude of general expectancy instead of anticipating are silk-thin veils of tranquility over an explosive endocrine system.

17. The author is primarily concerned with

- (A) disproving the view that herbivores are less intelligent than carnivores
(B) describing a relationship between animals' intelligence and their ecological roles
(C) establishing a direct link between early large mammals and their modern counterparts
(D) analyzing the ecological basis for the dominance of some carnivores over other carnivores
(E) demonstrating the importance of hormones in mental activity

18. The author refers to a hungry lizard (line 55) primarily in order to

- (A) demonstrate the similarity between the hunting methods of mammals and those of nonmammals
(B) broaden the application of his argument by including an insectivore as an example
(C) make a distinction between higher and lower levels of consciousness
(D) provide an additional illustration of the brutality characteristic of predators
(E) offer an objection to suggestions that all animals lack consciousness

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19. It can be inferred from the passage that in animals less intelligent than the mammals discussed in the passage
- (A) past experience is less helpful in ensuring survival
 - (B) attention is more highly focused
 - (C) muscular coordination is less highly developed
 - (D) there is less need for competition among species
 - (E) environment is more important in establishing the proper ratio of prey to predator
20. The sensitivity described in lines 56-61 is most clearly an example of
- (A) "free-floating awareness" (lines 16-17)
 - (B) "flooding of impulses in the brain stem" (lines 29-30)
 - (C) "the holding of consistent images" (lines 31-32)
 - (D) "integration of details with perceived ends and purposes" (lines 37-38)
 - (E) "silk-thin veils of tranquility" (line 64)
21. The author's attitude toward the mammals discussed in the passage is best described as
- (A) superior and condescending
 - (B) lighthearted and jocular
 - (C) apologetic and conciliatory
 - (D) wistful and tender
 - (E) respectful and admiring
22. The author provides information that would answer which of the following questions?
- I. Why is an aroused herbivore usually fearful?
 - II. What are some of the degrees of attention in large mammals?
 - III. What occurs when the stimulus that causes arousal of a mammal is removed?
- (A) I only (B) III only (C) I and II only
 - (D) II and III only (E) I, II, and III
23. According to the passage, improvement in brain function among early large mammals resulted primarily from which of the following?
- (A) Interplay of predator and prey
 - (B) Persistence of free-floating awareness in animals of the grasslands
 - (C) Gradual dominance of warm-blooded mammals over cold-blooded reptiles
 - (D) Interaction of early large mammals with less intelligent species
 - (E) Improvement of the capacity for memory among herbivores and carnivores
24. According to the passage, as the process of arousal in an organism continues, all of the following may occur EXCEPT
- (A) the production of adrenaline
 - (B) the production of norepinephrine
 - (C) a heightening of sensitivity to stimuli
 - (D) an increase in selectivity with respect to stimuli
 - (E) an expansion of the range of states mediated by the brain stem

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Tocqueville, apparently, was wrong. Jacksonian America was not a fluid, egalitarian society where individual wealth and poverty were ephemeral conditions. At least so argues E. Pessen in his iconoclastic study of the very rich in the United States between 1825 and 1850.

Pessen does present a quantity of examples, together with some refreshingly intelligible statistics, to establish the existence of an inordinately wealthy class. Though active in commerce or the professions, most of the wealthy were not self-made, but had inherited family fortunes. In no sense mercurial, these great fortunes survived the financial panics that destroyed lesser ones. Indeed, in several cities the wealthiest one percent constantly increased its share until by 1850 it owned half of the community's wealth. Although these observations are true, Pessen overestimates their importance by concluding from them that the undoubted progress toward inequality in the late eighteenth century continued in the Jacksonian period and that the United States was a class-ridden, plutocratic society even before industrialization.

25. According to the passage, Pessen indicates that all of the following were true of the very wealthy in the United States between 1825 and 1850 EXCEPT:
- (A) They formed a distinct upper class.
 - (B) Many of them were able to increase their holdings.
 - (C) Some of them worked as professionals or in business.
 - (D) Most of them accumulated their own fortunes.
 - (E) Many of them retained their wealth in spite of financial upheavals.

26. The author's attitude toward Pessen's presentation of statistics can be best described as
- (A) disapproving
 - (B) shocked
 - (C) suspicious
 - (D) amused
 - (E) laudatory
27. Which of the following best states the author's main point?
- (A) Pessen's study has overturned the previously established view of the social and economic structure of early nineteenth-century America.
 - (B) Tocqueville's analysis of the United States in the Jacksonian era remains the definitive account of this period.
 - (C) Pessen's study is valuable primarily because it shows the continuity of the social system in the United States throughout the nineteenth century.
 - (D) The social patterns and political power of the extremely wealthy in the United States between 1825 and 1850 are well documented.
 - (E) Pessen challenges a view of the social and economic system in the United States from 1825 to 1850, but he draws conclusions that are incorrect.

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8. A person who agrees to serve as mediator between two warring factions at the request of both abandons by so agreeing the right later to take sides. To take sides at a later point would be to suggest that the earlier presumptive impartiality was a sham.
- The passage above emphasizes which of the following points about mediators?
- (A) They should try to form no opinions of their own about any issue that is related to the dispute.
(B) They should not agree to serve unless they are committed to maintaining a stance of impartiality.
(C) They should not agree to serve unless they are equally acceptable to all parties to a dispute.
(D) They should feel free to take sides in the dispute right from the start, provided that they make their biases publicly known.
(E) They should reserve the right to abandon their impartiality so as not to be open to the charge of having been deceitful.
9. A study of attitudes toward prime-time television programs showed that programs with identical ratings in terms of number of people watching received highly divergent marks for quality from their viewers. This additional piece of information could prove valuable for advertisers, who might be well advised to spend their advertising dollars for programs that viewers feel are of high quality.
- Which of the following, if true, supports the claim that information about viewers' perceptions of the quality of television programs could be valuable to advertisers?
- (A) The number of programs judged to be of high quality constituted a high percentage of the total number of programs judged.
(B) Many of the programs judged to be of high quality were shown on noncommercial networks.
(C) Television viewers more frequently remember the sponsors of programs they admire than the sponsors of programs they judge mediocre.
(D) Television viewers tend to watch new programs only when those programs follow old, familiar programs.
(E) Television viewers report that the quality of a television advertisement has little effect on their buying habits.
10. Nineteenth-century art critics judged art by the realism of its method of representation. It was assumed that the realistic method developed from primitive beginnings to the perfection of formal realism. It is one of the permanent gains of the aesthetic revolution of the twentieth century that we are rid of this type of aesthetics. It can be inferred from the passage above that the artistic revolution of the twentieth century had which of the following effects?
- (A) It deemphasized realistic representation as an evaluative consideration for judging works of art.
(B) It permitted modern critics to appreciate the simplicity of primitive art.
(C) It repudiated the realistic representation found in the art of the past.
(D) It reinforced traditional ways of looking at and judging great art.
(E) It allowed art critics to understand the evolution and nature of art.

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Questions 23-24

Why save endangered species? For the general public, endangered species appear to be little more than biological oddities. A very different perception is gained from considering the issue of extinction in a wider context. The important point is that many major social advances have been made on the basis of life forms whose worth would never have been perceived in advance. Consider the impact of rubber-producing plants on contemporary life and industry: approximately two-thirds of the world's rubber supply comes from rubber-producing plants and is made into objects as diverse as rubber washers and rubber boots.

23. The author's point is made chiefly by
- (A) acknowledging the validity of two opposing points of view
 - (B) appealing to the emotions of the audience rather than to their intellects
 - (C) suggesting a useful perspective for viewing the question raised at the beginning of the passage
 - (D) trying to discredit the view of an opponent without presenting an alternative hypothesis
 - (E) generalizing from similar to dissimilar cases
24. All of the following facts could be used as illustrative examples in addition to the example of rubber-producing plants EXCEPT:
- (A) The discovery of the vaccine for smallpox resulted from observing the effect of the cowpox virus on the hands of dairy workers.
 - (B) The major source of our pharmaceutical supplies is plants, some of them commonly thought of as weeds.
 - (C) Certain antibiotics were originally derived from mold growing on cantaloupe.
 - (D) Plastic is a unique product derived from petroleum and petroleum by-products.
 - (E) Hamsters and other rodents have played an important role in laboratory tests of medicine for use on humans.

25. In the United States between 1850 and 1880, the number of farmers continued to increase, but at a rate lower than that of the general population. Which of the following statements directly contradicts the information presented above?
- (A) The number of farmers in the general population increased slightly in the thirty years between 1850 and 1880.
 - (B) The rate of growth of the United States labor force and the rate of growth of the general population rose simultaneously in the thirty years between 1850 and 1880.
 - (C) The proportion of farmers in the United States labor force remained constant in the thirty years between 1850 and 1880.
 - (D) The proportion of farmers in the United States labor force decreased from 64 percent in 1850 to 49 percent in 1880.
 - (E) The proportion of farmers in the general population increased from 68 percent in 1850 to 72 percent in 1880.

SECTION 4
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The ----- of mass literacy coincided with the first industrial revolution; in turn, the new expansion in literacy, as well as cheaper printing, helped to nurture the ----- of popular literature.
(A) building..mistrust
(B) reappearance..display
(C) receipt..source
(D) selection..influence
(E) emergence..rise
2. Although ancient tools were ----- preserved, enough have survived to allow us to demonstrate an occasionally interrupted but generally ----- progress through prehistory.
(A) partially..noticeable
(B) superficially..necessary
(C) unwittingly..documented
(D) rarely..continual
(E) needlessly..incessant
3. In parts of the Arctic, the land grades into the landfast ice so ----- that you can walk off the coast and not know you are over the hidden sea.
(A) permanently (B) imperceptibly
(C) irregularly (D) precariously
(E) slightly
4. Kagan maintains that an infant's reactions to its first stressful experiences are part of a natural process of development, not harbingers of childhood unhappiness or ----- signs of adolescent anxiety.
(A) prophetic (B) normal
(C) monotonous (D) virtual
(E) typical
5. An investigation that is ----- can occasionally yield new facts, even notable ones, but typically the appearance of such facts is the result of a search in a definite direction.
(A) timely (B) unguided (C) consistent
(D) uncomplicated (E) subjective
6. Like many eighteenth-century scholars who lived by cultivating those in power, Winckelmann neglected to neutralize, by some ----- gesture of comradeship, the resentment his peers were bound to feel because of his ----- the high and mighty.
(A) quixotic..intrigue with
(B) enigmatic..familiarity with
(C) propitiatory..involvement with
(D) salutary..questioning of
(E) unfeigned..sympathy for
7. In a ----- society that worships efficiency, it is difficult for a sensitive and idealistic person to make the kinds of ----- decisions that alone spell success as it is defined by such a society.
(A) bureaucratic..edifying
(B) pragmatic..hardheaded
(C) rational..well-intentioned
(D) competitive..evenhanded
(E) modern..dysfunctional

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

"I want to criticize the social system, and to show it at work, at its most intense." Virginia Woolf's provocative statement about her intentions in writing *Mrs. Dalloway* has regularly

- (5) been ignored by the critics, since it highlights an aspect of her literary interests very different from the traditional picture of the "poetic" novelist concerned with examining states of reverie and vision and with following the intricate pathways
(10) of individual consciousness. But Virginia Woolf was a realistic as well as a poetic novelist, a satirist and social critic as well as a visionary; literary critics' cavalier dismissal of Woolf's social vision will not withstand scrutiny.
(15) In her novels, Woolf is deeply engaged by the questions of how individuals are shaped (or deformed) by their social environments, how historical forces impinge on people's lives, how class, wealth, and gender help to determine
(20) people's fates. Most of her novels are rooted in a realistically rendered social setting and in a precise historical time.

Woolf's focus on society has not been generally recognized because of her intense antipathy
(25) to propaganda in art. The pictures of reformers in her novels are usually satiric or sharply critical. Even when Woolf is fundamentally sympathetic to their causes, she portrays people anxious to reform their society and possessed of
(30) a message or program as arrogant or dishonest, unaware of how their political ideas serve their own psychological needs (*Her Writer's Diary* notes: "the only honest people are the artists," whereas "these social reformers and philanthropists . . . harbor . . . discreditable desires under the guise of loving their kind. . . .") Woolf detested what she called "preaching" in fiction, too, and criticized novelist
(35) D. H. Lawrence (among others) for working by this method.

Woolf's own social criticism is expressed in the language of observation rather than in direct commentary, since for her, fiction is a contemplative, not an active art. She describes phenomena and provides materials for a judgment about society and social issues; it is the reader's work to put the observations together and understand the coherent point of view behind them. As a moralist, Woolf works by indirection, subtly
(45) undermining officially accepted mores, mocking, suggesting, calling into question, rather than asserting, advocating, bearing witness: hers is the satirist's art.

Woolf's literary models were acute social observers like Chekhov and Chaucer. As she put it
(55)

in *The Common Reader*, "It is safe to say that not a single law has been framed or one stone set upon another because of anything Chaucer said or wrote; and yet, as we read him, we are absorbing

(60) morality at every pore." Like Chaucer, Woolf chose to understand as well as to judge, to know her society root and branch—a decision crucial in order to produce art rather than polemic.

17. Which of the following would be the most appropriate title for the passage?
(A) Poetry and Satire as Influences on the Novels of Virginia Woolf
(B) Virginia Woolf: Critic and Commentator on the Twentieth-Century Novel
(C) Trends in Contemporary Reform Movements as a Key to Understanding Virginia Woolf's Novels
(D) Society as Allegory for the Individual in the Novels of Virginia Woolf
(E) Virginia Woolf's Novels: Critical Reflections on the Individual and on Society
18. In the first paragraph of the passage, the author's attitude toward the literary critics mentioned can best be described as
(A) disparaging
(B) ironic
(C) facetious
(D) skeptical but resigned
(E) disappointed but hopeful
19. It can be inferred from the passage that Woolf chose Chaucer as a literary model because she believed that
(A) Chaucer was the first English author to focus on society as a whole as well as on individual characters
(B) Chaucer was an honest and forthright author, whereas novelists like D. H. Lawrence did not sincerely wish to change society
(C) Chaucer was more concerned with understanding his society than with calling its accepted mores into question
(D) Chaucer's writing was greatly, if subtly, effective in influencing the moral attitudes of his readers
(E) her own novels would be more widely read if, like Chaucer, she did not overtly and vehemently criticize contemporary society

20. It can be inferred from the passage that the most probable reason Woolf realistically described the social setting in the majority of her novels was that she
- (A) was aware that contemporary literary critics considered the novel to be the most realistic of literary genres
 - (B) was interested in the effect of a person's social milieu on his or her character and actions
 - (C) needed to be as attentive to detail as possible in her novels in order to support the arguments she advanced in them
 - (D) wanted to show that a painstaking fidelity in the representation of reality did not in any way hamper the artist
 - (E) wished to prevent critics from charging that her novels were written in an ambiguous and inexact style
21. Which of the following phrases best expresses the sense of the word "contemplative" as it is used in lines 43-44 of the passage?
- (A) Gradually elucidating the rational structures underlying accepted mores
 - (B) Reflecting on issues in society without prejudice or emotional commitment
 - (C) Avoiding the aggressive assertion of the author's perspective to the exclusion of the reader's judgment
 - (D) Conveying a broad view of society as a whole rather than focusing on an isolated individual consciousness
 - (E) Appreciating the world as the artist sees it rather than judging it in moral terms
22. The author implies that a major element of the satirist's art is the satirist's
- (A) consistent adherence to a position of lofty disdain when viewing the foibles of humanity
 - (B) insistence on the helplessness of individuals against the social forces that seek to determine an individual's fate
 - (C) cynical disbelief that visionaries can either enlighten or improve their societies
 - (D) fundamental assumption that some ambiguity must remain in a work of art in order for it to reflect society and social mores accurately
 - (E) refusal to indulge in polemic when presenting social mores to readers for their scrutiny
23. The passage supplies information for answering which of the following questions?
- (A) Have literary critics ignored the social criticism inherent in the works of Chekhov and Chaucer?
 - (B) Does the author believe that Woolf is solely an introspective and visionary novelist?
 - (C) What are the social causes with which Woolf shows herself to be sympathetic in her writings?
 - (D) Was D. H. Lawrence as concerned as Woolf was with creating realistic settings for his novels?
 - (E) Does Woolf attribute more power to social environment or to historical forces as shapers of a person's life?

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It is a popular misconception that nuclear fusion power is free of radioactivity; in fact, the deuterium-tritium reaction that nuclear scientists are currently exploring with such zeal produces both alpha particles and neutrons. (The neutrons are used to produce tritium from a lithium blanket surrounding the reactor.) Another common misconception is that nuclear fusion power is a virtually unlimited source of energy because of the enormous quantity of deuterium in the sea. Actually, its limits are set by the amount of available lithium, which is about as plentiful as uranium in the Earth's crust. Research should certainly continue on controlled nuclear fusion, but no energy program should be premised on its existence until it has proven practical. For the immediate future, we must continue to use hydroelectric power, nuclear fission, and fossil fuels to meet our energy needs. The energy sources already in major use are in major use for good reason.

24. The primary purpose of the passage is to
- (A) criticize scientists who believe that the deuterium-tritium fusion reaction can be made feasible as an energy source
 - (B) admonish scientists who have failed to correctly calculate the amount of lithium available for use in nuclear fusion reactors
 - (C) defend the continued short-term use of fossil fuels as a major energy source
 - (D) caution against uncritical embrace of nuclear fusion power as a major energy source
 - (E) correct the misconception that nuclear fusion power is entirely free of radioactivity
25. It can be inferred from the passage that the author believes which of the following about the current state of public awareness concerning nuclear fusion power?
- (A) The public has been deliberately misinformed about the advantages and disadvantages of nuclear fusion power.
 - (B) The public is unaware of the principal advantage of nuclear fusion over nuclear fission as an energy source.
 - (C) The public's awareness of the scientific facts concerning nuclear fusion power is somewhat distorted and incomplete.
 - (D) The public is not interested in increasing its awareness of the advantages and disadvantages of nuclear fusion power.
 - (E) The public is aware of the disadvantages of nuclear fusion power but not of its advantages.
26. The passage provides information that would answer which of the following questions?
- (A) What is likely to be the principal source of deuterium for nuclear fusion power?
 - (B) How much incidental radiation is produced in the deuterium-tritium fusion reaction?
 - (C) Why are scientists exploring the deuterium-tritium fusion reaction with such zeal?
 - (D) Why must the tritium for nuclear fusion be synthesized from lithium?
 - (E) Why does the deuterium-tritium reaction yield both alpha particles and neutrons?
27. Which of the following statements concerning nuclear scientists is most directly suggested in the passage?
- (A) Nuclear scientists are not themselves aware of all of the facts surrounding the deuterium-tritium fusion reaction.
 - (B) Nuclear scientists exploring the deuterium-tritium reaction have overlooked key facts in their eagerness to prove nuclear fusion practical.
 - (C) Nuclear scientists may have overestimated the amount of lithium actually available in the Earth's crust.
 - (D) Nuclear scientists have not been entirely dispassionate in their investigation of the deuterium-tritium reaction.
 - (E) Nuclear scientists have insufficiently investigated the lithium-to-tritium reaction in nuclear fusion.

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7. Veteran screenwriters, aiming at creating a 120-page screenplay for a film, usually turn in a 135-page first draft. As one screenwriter put it, "That gives those in charge of the movie a chance to be creative when they get the script: at the very least, they can cut 15 pages."
- The screenwriter's statement cited above conveys which of the following propositions?
- (A) Screenwriters for a film are generally not involved in any aspects of filmmaking besides providing the script.
- (B) Seasoned screenwriters are resigned to, and make allowance for, draft scripts being altered by those evaluating them.
- (C) Truly creative screenwriters are too temperamental to adhere to page limits set for their work.
- (D) It takes a special kind of creativity to recognize what is best left out of a film script.
- (E) Even experienced screenwriters cannot be expected to write scripts of consistently high quality throughout.
8. During the day in Lake Constance, the zooplankton *D. hyalina* departs for the depths where food is scarce and the water cold. *D. galeata* remains near the warm surface where food is abundant. Even though *D. galeata* grows and reproduces much faster, its population is often outnumbered by *D. hyalina*.

Which of the following, if true, would help resolve the apparent paradox presented above?

- (A) The number of species of zooplankton living at the bottom of the lake is twice that of species living at the surface.
- (B) Predators of zooplankton, such as whitefish and perch, live and feed near the surface of the lake during the day.
- (C) In order to make the most of scarce food resources, *D. hyalina* matures more slowly than *D. galeata*.
- (D) *D. galeata* clusters under vegetation during the hottest part of the day to avoid the sun's rays.
- (E) *D. galeata* produces twice as many offspring per individual in any given period of time as does *D. hyalina*.

9. Each year, fires in the United States cause \$12 billion in property losses, insurance costs, fire-fighting expenses, and loss of worker productivity. These fire losses are seven times those of Japan on a per capita basis.
- Which of the following, if true, would be LEAST likely to be a factor contributing to the difference between fire losses in Japan and those in the United States?
- (A) The walls of Japanese homes are made mostly of wood and bamboo and are more combustible than the walls in most American homes.
- (B) The rate of arson, a major contributor to fire statistics in the United States, is almost negligible in Japan.
- (C) Most Japanese homes, unlike those in the United States, are equipped with specially designed and effective fire-extinguishing equipment.
- (D) Foam-based and plastic furniture, less popular in Japan than in the United States, ignites readily and releases twice the heat energy of equivalent weights of natural fibers.
- (E) Japanese fire departments devote proportionately more personnel time to inspection, training, and public education than do United States fire departments.

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23. Many researchers believe that the presence of RNA in brain cells is the biochemical basis of memory; that is, the presence of RNA enables us to remember. Because certain chemicals are known to inhibit the synthesis of RNA in the body, we can test this hypothesis. Animals that have learned particular responses can be injected with an RNA inhibitor and then tested for memory of the learned responses.
- Which of the following test results would most seriously weaken the case for RNA as the basis of memory?
- (A) After an injection of RNA inhibitor, a wide range of behaviors in addition to the learned responses were affected.
(B) After an injection of RNA inhibitor, animals that had not consistently been giving the learned responses were able to give them consistently.
(C) After injections of RNA inhibitor, some animals lost memory of the learned responses totally but others lost it only partially.
(D) After a small injection of RNA inhibitor, animals responded well, but as the size of the injection increased, they gave fewer of the learned responses.
(E) After an injection of RNA inhibitor, animals could not learn a new response.
24. The greatest chance for the existence of extra-terrestrial life is on a planet beyond our solar system. The Milky Way galaxy alone contains 100 billion other suns, many of which could be accompanied by planets similar enough to Earth to make them suitable abodes of life.
- The statement above assumes which of the following?
- (A) Living creatures on another planet would probably have the same appearance as those on Earth.
(B) Life cannot exist on other planets in our solar system.
(C) If the appropriate physical conditions exist, life is an inevitable consequence.
(D) More than one of the suns in the galaxy is accompanied by an Earth-like planet.
(E) It is likely that life on another planet would require conditions similar to those on Earth.
25. A ten-year comparison between the United States and the Soviet Union in terms of crop yields per acre revealed that when only planted acreage is compared, Soviet yields are equal to 68 percent of United States yields. When total agricultural acreage (planted acreage plus fallow acreage) is compared, however, Soviet yield is 114 percent of United States yield.
- From the information above, which of the following can be most reliably inferred about United States and Soviet agriculture during the ten-year period?
- (A) A higher percentage of total agricultural acreage was fallow in the United States than in the Soviet Union.
(B) The United States had more fallow acreage than planted acreage.
(C) Fewer total acres of available agricultural land were fallow in the Soviet Union than in the United States.
(D) The Soviet Union had more planted acreage than fallow acreage.
(E) The Soviet Union produced a greater volume of crops than the United States produced.

TEST 19

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Because they had expected the spacecraft Voyager 2 to be able to gather data only about the planets Jupiter and Saturn, scientists were ----- the wealth of information it sent back from Neptune twelve years after leaving Earth.
(A) disappointed in
(B) concerned about
(C) confident in
(D) elated by
(E) anxious for
2. Wearing the latest fashions was exclusively the ----- of the wealthy until the 1850's, when mass production, aggressive entrepreneurs, and the availability of the sewing machine made them ----- the middle class.
(A) aspiration..disagreeable to
(B) vexation..superfluous for
(C) bane..profitable to
(D) prerogative..accessible to
(E) obligation..popular with
3. Linguists have now confirmed what experienced users of ASL—American Sign Language—have always implicitly known: ASL is a grammatically ----- language in that it is capable of expressing every possible syntactic relation.
(A) limited
(B) economical
(C) complete
(D) shifting
(E) abstract
4. He was regarded by his followers as something of -----, not only because of his insistence on strict discipline, but also because of his ----- adherence to formal details.
(A) a martinet..rigid
(B) an authority..sporadic
(C) a tyrant..reluctant
(D) a fraud..conscientious
(E) an acolyte..maniacal
5. The influence of the *Timaeus* among early philosophical thinkers was -----, if only because it was the sole dialogue ----- in Europe for almost 1,000 years.
(A) pervasive..available
(B) inestimable..suppressed
(C) unnoteworthy..abridged
(D) underestimated..studied
(E) circumscribed..translated
6. The Gibsons were little given to ----- in any form; not one of them was afraid of -----, of being and seeming unlike their neighbors.
(A) humility..absurdity
(B) excellence..mediocrity
(C) anger..confrontation
(D) conformism..singularity
(E) ostentation..eccentricity
7. Even after ----- against the ----- of popular sovereignty were included, major figures in the humanistic disciplines remained skeptical about the proposal to extend suffrage to the masses.
(A) recommendations..continuation
(B) safeguards..excesses
(C) arguments..introduction
(D) provisions..advantages
(E) laws..creation

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line
(5)

(10)

(15)

Isadora Duncan's masterly writings on the dance reveal the depth of her determination to create a lyric form of the art which was free of characterization, storytelling, and the theatrical exhibition of skills: She wished to discard the traditional methods and established vocabularies of such dance forms as ballet and to explore the internal sources of human expressiveness. She shunned bodily ornamentation and strove to use only the natural movements of her body, undistorted by acrobatic exaggeration and stimulated only by internal compulsion. In her recitals Duncan danced to the music of Beethoven, Wagner, and Gluck, among others, but, contrary to popular belief, she made no attempt to visualize or to interpret the music; rather, she simply relied on it to provide the inspiration for expressing inner feelings through movement. She did not regard this use of music as ideal, however, believing that she would someday dispense with music entirely. That day never came.

17. The author is primarily concerned with Duncan's
- (A) masterful lyricism as expressed in her writings on the dance
 - (B) concerted efforts to subdue the natural movements of the dance
 - (C) belated recognition that she could not actually fulfill all of her ideals for the dance
 - (D) basic standards for the dance form that she wished to create and perform
 - (E) continuous responsiveness to a popular misconception about the nature of her new art form
18. The author implies that Duncan relied on music in her recitals in order to
- (A) interpret musical works solely by means of natural body movements
 - (B) foster the illusion that music serves as an inspiration for the dance
 - (C) inspire the expression of inner feeling when she danced
 - (D) validate the public belief that music inspires the expression of feeling through movement
 - (E) counter the public belief that she made no attempt to visualize music

19. According to the passage, Duncan intended to develop an art form that would do all of the following EXCEPT
- (A) avoid the use of standard ballet techniques
 - (B) revitalize an earlier established vocabulary
 - (C) draw on internal sources of human expressiveness
 - (D) create intended effects without the use of acrobatic exaggeration
 - (E) derive inspiration solely from inner feelings
20. It can be inferred from the passage that which of the following endeavors is LEAST compatible with Duncan's ideals for the dance?
- (A) Using music to stimulate the inspiration to dance
 - (B) Attempting to free an art form of both characterization and storytelling
 - (C) Minimizing the theatrical exhibition of skills
 - (D) Being inspired to express inner feeling through movement
 - (E) Creating a lyric art form by drawing on inner personal resources

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Line
(5) The recent, apparently successful, prediction by mathematical models of an appearance of El Niño—the warm ocean current that periodically develops along the Pacific coast of South America—has excited researchers. Jacob Bjérknes pointed out over 20 years ago how winds might create either abnormally warm or abnormally cold water in the eastern equatorial Pacific. Nonetheless, until the development of the models no one could explain why conditions should regularly shift (10) from one to the other, as happens in the periodic oscillations between appearances of the warm El Niño and the cold so-called anti-El Niño. The answer, at least if the current model that links the behavior of the ocean to that of the atmosphere is correct, is to be found in (15) the ocean.

It has long been known that during an El Niño, two conditions exist: (1) unusually warm water extends along the eastern Pacific, principally along the coasts of Ecuador and Peru, and (2) winds blow from the west (20) into the warmer air rising over the warm water in the east. These winds tend to create a feedback mechanism by driving the warmer surface water into a “pile” that blocks the normal upwelling of deeper, cold water in the east and further warms the eastern water, thus (25) strengthening the wind still more. The contribution of the model is to show that the winds of an El Niño, which raise sea level in the east, simultaneously send a signal to the west lowering sea level. According to the model, that signal is generated as a negative Rossby (30) wave, a wave of depressed, or negative, sea level, that moves westward parallel to the equator at 25 to 85 kilometers per day. Taking months to traverse the Pacific, Rossby waves march to the western boundary of the Pacific basin, which is modeled as a smooth wall (35) but in reality consists of quite irregular island chains, such as the Philippines and Indonesia.

When the waves meet the western boundary, they (40) are reflected, and the model predicts that Rossby waves will be broken into numerous coastal Kelvin waves carrying the same negative sea-level signal. These eventually shoot toward the equator, and then head eastward along the equator propelled by the rotation of the Earth at a speed of about 250 kilometers per day. When (45) enough Kelvin waves of sufficient amplitude arrive from the western Pacific, their negative sea-level signal overcomes the feedback mechanism tending to raise the sea level, and they begin to drive the system into the opposite cold mode. This produces a gradual shift in winds, one that will eventually send positive sea-level (50) Rossby waves westward, waves that will eventually return as cold cycle-ending positive Kelvin waves, beginning another warming cycle.

21. The primary function of the passage as a whole is to
 - (A) introduce a new explanation of a physical phenomenon
 - (B) explain the difference between two related physical phenomena
 - (C) illustrate the limitations of applying mathematics to complicated physical phenomena
 - (D) indicate the direction that research into a particular physical phenomenon should take
 - (E) clarify the differences between an old explanation of a physical phenomenon and a new model of it
22. Which of the following best describes the organization of the first paragraph?
 - (A) A theory is presented and criticized.
 - (B) A model is described and evaluated.
 - (C) A result is reported and its importance explained.
 - (D) A phenomenon is noted and its significance debated.
 - (E) A hypothesis is introduced and contrary evidence presented.
23. According to the passage, which of the following features is characteristic of an El Niño?
 - (A) Cold coastal water near Peru
 - (B) Winds blowing from the west
 - (C) Random occurrence
 - (D) Worldwide effects
 - (E) Short duration

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24. According to the model presented in the passage, which of the following normally signals the disappearance of an El Niño?
- (A) The arrival in the eastern Pacific of negative sea-level Kelvin waves
 - (B) A shift in the direction of the winds produced by the start of an anti-El Niño elsewhere in the Pacific
 - (C) The reflection of Kelvin waves after they reach the eastern boundary of the Pacific, along Ecuador and Peru
 - (D) An increase in the speed at which negative Rossby waves cross the Pacific
 - (E) The creation of a reservoir of colder, deep ocean water trapped under the pile of warmer, surface ocean water
25. It can be inferred from the passage that which of the following would result fairly immediately from the cessation of the winds of an El Niño?
- I. Negative Rossby waves would cease to be generated in the eastern Pacific.
 - II. The sea level in the eastern Pacific would fall.
 - III. The surface water in the eastern Pacific would again be cooled by being mixed with deep water.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) I and III only
 - (E) I, II, and III
26. Which of the following, if true, would most seriously undermine the validity of the model of El Niño that is presented in the passage?
- (A) During some years El Niño extends significantly farther along the coasts of Ecuador and Peru than during other years.
 - (B) During periods of unusually cool temperatures along the eastern Pacific, an El Niño is much colder than normal.
 - (C) The normal upwelling of cold water in the eastern Pacific depends much more on the local characteristics of the ocean than on atmospheric conditions.
 - (D) The variations in the time it takes Rossby waves to cross the Pacific depend on the power of the winds that the waves encounter.
 - (E) The western boundary of the Pacific basin is so irregular that it impedes most coastal Kelvin waves from heading eastward.
27. The passage best supports the conclusion that during an anti-El Niño the fastest-moving signal waves are
- (A) negative Rossby waves moving east along the equator
 - (B) positive Rossby waves moving west along the equator
 - (C) negative Kelvin waves moving west along the equator
 - (D) positive Kelvin waves moving west along the equator
 - (E) positive Kelvin waves moving east along the equator

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7. The use of the term "neat" as a general term of approval is an unfortunate development in colloquial English. The original meaning of "neat" is "tidy." Therefore, the use of "neat" as a general term of approval is incorrect and should be discouraged.

Which of the following is an assumption that, if accepted, allows the conclusion above to be properly drawn?

- (A) The original meaning of an English word is the only correct meaning to use.
- (B) The term "neat" has been in the English language for many centuries.
- (C) The use of "neat" as a general term of approval is a recent innovation in English.
- (D) Speakers of colloquial English are not obligated to speak correctly.
- (E) The term "neat" has changed its meaning only once in the history of English.

8. The price of maple syrup has jumped from 22 dollars a gallon three years ago to 40 dollars a gallon today. It can be concluded that maple-syrup harvesters have been artificially inflating prices and that governmental price regulations are necessary to control rising prices.

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

- (A) The government already requires maple-syrup harvesters to submit their facilities to licensing by the health department.
- (B) Insect infestation and drought have stunted the growth of syrup-producing maple trees and caused less-abundant syrup harvests.
- (C) Maple syrup is produced in rural areas that suffer from high unemployment.
- (D) Technological improvements in maple-syrup harvesting have reduced production costs.
- (E) Maple-syrup prices have risen many times in the past, though never before at the rate recently observed.

9. In 1988 unemployment in some regions of the United States dropped to the lowest rate in ten years, while the rate in other regions reached an all-time high. In 1978 similar conditions led to large migrations of workers from regions with high unemployment to regions with low unemployment. There was, however, significantly less such migration in 1988.

Which of the following, if true about 1988, would contribute most to explaining why there was less migration of workers in 1988?

- (A) The regions with the lowest unemployment rates had many of the same kinds of industries as those in the regions with high unemployment, but this was not the case in 1978.
- (B) In contrast to 1978, the regions with the lowest unemployment rates had the largest number of new jobs, although substantially fewer of the new jobs required retraining.
- (C) In contrast to 1978, housing costs in the areas with the lowest unemployment rates were substantially higher than housing costs in other parts of the country.
- (D) The unemployment rate in countries outside of the United States was higher than it was ten years before.
- (E) Unemployment benefits in the regions of high unemployment were slightly lower than they were ten years earlier in regions of high unemployment.

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23. Scientists now believe that artificial-hip implants, previously thought to be safe, may actually increase the risk of cancer in recipients after about 45 years of use. Though these implants do improve the quality of recipients' lives, the increased risk of cancer is an unacceptable price to pay for these improvements. Therefore, they should be banned.
- Which of the following, if true, is the strongest counterargument to the argument above?
- (A) Artificial-hip implant surgery can cause severe complications, such as infection, chronic fever, and bone degeneration, and these complications can themselves be crippling or even fatal.
 - (B) Almost all artificial-hip implant recipients receive their implants at an age when they are unlikely to live more than an additional 30 years.
 - (C) Although artificial-hip implants increase the risk of cancer after about 45 years of use, a few of the cancers they induce are not fatal.
 - (D) Since artificial-hip implants are not very common, banning them would cause little hardship.
 - (E) Although the benefits of artificial-hip implant surgery have remained substantially the same over the past decade, the price of the surgery has risen considerably.

24. When released into the atmosphere, the refrigerant Freon damages the Earth's ozone layer. A new kind of refrigerant does not have this effect. The manufacturer claims that replacing Freon with the new refrigerant in both new and existing refrigerators will prevent any further Freon damage to the ozone layer apart from that being done by the Freon already in the atmosphere.

Which of the following must be true if the manufacturer's prediction is to prove accurate?

- (A) Freon can be replaced with the new refrigerant without releasing any Freon into the atmosphere.
- (B) The damage already done to the ozone layer is not of environmentally significant proportions.
- (C) The atmosphere can reverse the damage to the ozone layer caused by the past use of Freon.
- (D) The new refrigerant can counteract the damaging effects of Freon on the Earth's atmosphere.
- (E) The new refrigerant causes no environmental damage of any kind when it is released into the atmosphere.

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25. Any United States flag manufactured outside the United States should be banned from importation, since some foreign manufacturers superimpose images on the United States flag and sell such products with relative impunity. United States manufacturers, on the other hand, would face penalties for such violations of the United States flag code.

Which of the following is the best criticism of the argument above?

- (A) The argument reiterates its conclusion instead of providing a reason for it.
- (B) The argument makes an irrelevant distinction between foreign and United States manufacturers.
- (C) The reason given for the ban undermines rather than supports the conclusion.
- (D) The reason given for the ban does not explain why images superimposed on the United States flag are offensive.
- (E) The reason given for the ban applies only to a part of the group of manufacturers whose flags are included in the ban, not necessarily to all.

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. A recent survey shows that, while ninety-four percent of companies conducting management-training programs open them to women, women are ----- only seventy-four percent of those programs.
(A) protesting against
(B) participating in
(C) displeased by
(D) allowed in
(E) refused by
2. Thomas Paine, whose political writing was often flamboyant, was in private life a surprisingly ----- man: he lived in rented rooms, ate little, and wore drab clothes.
(A) simple
(B) controversial
(C) sordid
(D) comfortable
(E) discourteous
3. Their ----- of loyalties is first to oneself, next to kin, then to fellow tribe members, and finally to compatriots.
(A) merging
(B) hierarchy
(C) definition
(D) judgment
(E) cognizance
4. The belief that science destroys the arts appears to be supported by historical evidence that the arts have ----- only when the sciences have been -----.
(A) declined..attacked
(B) flourished..neglected
(C) matured..unconcerned
(D) succeeded..developed
(E) floundered..constrained
5. The action and characters in a melodrama can be so immediately ----- that all observers can hiss the villain with an air of smug but enjoyable -----.
(A) spurned..boredom
(B) forgotten..condescension
(C) classified..self-righteousness
(D) plausible..guilt
(E) gripping..skepticism
6. In the design of medical experiments, the need for ----- assignment of treatments to patients must be ----- the difficulty of persuading patients to participate in an experiment in which their treatment is decided by chance.
(A) independent..amended by
(B) competent..emphasized by
(C) mechanical..controlled by
(D) swift..associated with
(E) random..reconciled with
7. Though dealers insist that professional art dealers can make money in the art market, even an ----- knowledge is not enough: the art world is so fickle that stock-market prices are ----- by comparison.
(A) amateur's..sensible
(B) expert's..erratic
(C) investor's..booming
(D) insider's..predictable
(E) artist's..irrational

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line
(5) Historians have only recently begun to note the increase in demand for luxury goods and services that took place in eighteenth-century England. McKendrick has explored the Wedgwood firm's remarkable success in marketing luxury pottery; Plumb has written about the proliferation of provincial theaters, musical festivals, and children's toys and books. While the fact of this consumer revolution is hardly in doubt, three key questions remain: Who were the consumers? What were
(10) their motives? And what were the effects of the new demand for luxuries?

An answer to the first of these has been difficult to obtain. Although it has been possible to infer from the goods and services actually produced what manufacturers and servicing trades thought their customers wanted, only a study of relevant personal documents written by actual consumers will provide a precise picture of who wanted what. We still need to know how large this consumer market was and how far down the social scale the consumer demand for luxury goods penetrated. With regard to this last question, we might note in passing that Thompson, while rightly restoring laboring people to the stage of eighteenth-century English history, has probably exaggerated the opposition of these people to the inroads of capitalist consumerism in general; for example, laboring people in eighteenth-century England readily shifted from home-brewed beer to standardized beer produced by huge, heavily capitalized urban breweries.
(20)

To answer the question of why consumers became so eager to buy, some historians have pointed to the ability of manufacturers to advertise in a relatively uncensored press. This, however, hardly seems a sufficient answer. McKendrick favors a Veblen model of conspicuous consumption stimulated by competition for status. The "middling sort" bought goods and services because they wanted to follow fashions set by the rich. Again, we may wonder whether this explanation is sufficient. Do not people enjoy buying things as a form of self-gratification?
(30) If so, consumerism could be seen as a product of the rise of new concepts of individualism and materialism, but not necessarily of the frenzy for conspicuous competition.
(35)

Finally, what were the consequences of this consumer demand for luxuries? McKendrick claims that it goes a long way toward explaining the coming of the Industrial Revolution. But does it? What, for example, does the production of high-quality pottery and toys have to do with the development of iron manufacture or textile mills? It is perfectly possible to have the psychology and
(40)

(45) (50) reality of a consumer society without a heavy industrial sector.

That future exploration of these key questions is undoubtedly necessary should not, however, diminish the force of the conclusion of recent studies: the insatiable demand in eighteenth-century England for frivolous as well as useful goods and services foreshadows our own world.

17. In the first paragraph, the author mentions McKendrick and Plumb most probably in order to

- (A) contrast their views on the subject of luxury consumerism in eighteenth-century England
- (B) indicate the inadequacy of historiographical approaches to eighteenth-century English history
- (C) give examples of historians who have helped to establish the fact of growing consumerism in eighteenth-century England
- (D) support the contention that key questions about eighteenth-century consumerism remain to be answered
- (E) compare one historian's interest in luxury goods such as pottery to another historian's interest in luxury services such as musical festivals

18. Which of the following items, if preserved from eighteenth-century England, would provide an example of the kind of documents mentioned in lines 16-17?

- (A) A written agreement between a supplier of raw materials and a supplier of luxury goods
- (B) A diary that mentions luxury goods and services purchased by its author
- (C) A theater ticket stamped with the date and name of a particular play
- (D) A payroll record from a company that produced luxury goods such as pottery
- (E) A newspaper advertisement describing luxury goods and services available at a seaside resort

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19. According to the passage, Thompson attributes to laboring people in eighteenth-century England which of the following attitudes toward capitalist consumerism?
- (A) Enthusiasm
(B) Curiosity
(C) Ambivalence
(D) Stubbornness
(E) Hostility
20. In the third paragraph, the author is primarily concerned with
- (A) contrasting two theses and offering a compromise
(B) questioning two explanations and proposing a possible alternative to them
(C) paraphrasing the work of two historians and questioning their assumptions
(D) examining two theories and endorsing one over the other
(E) raising several questions but implying that they cannot be answered.
21. According to the passage, a Veblen model of conspicuous consumption has been used to
- (A) investigate the extent of the demand for luxury goods among social classes in eighteenth-century England
(B) classify the kinds of luxury goods desired by eighteenth-century consumers
(C) explain the motivation of eighteenth-century consumers to buy luxury goods
(D) establish the extent to which the tastes of rich consumers were shaped by the middle classes in eighteenth-century England
(E) compare luxury consumerism in eighteenth-century England with such consumerism in the twentieth century
22. According to the passage, eighteenth-century England and the contemporary world of the passage's readers are
- (A) dissimilar in the extent to which luxury consumerism could be said to be widespread among the social classes
(B) dissimilar in their definitions of luxury goods and services
(C) dissimilar in the extent to which luxury goods could be said to be a stimulant of industrial development
(D) similar in their strong demand for a variety of goods and services
(E) similar in the extent to which a middle class could be identified as imitating the habits of a wealthier class
23. It can be inferred from the passage that the author would most probably agree with which of the following statements about the relationship between the Industrial Revolution and the demand for luxury goods and services in eighteenth-century England?
- (A) The growing demand for luxury goods and services was a major factor in the coming of the Industrial Revolution.
(B) The Industrial Revolution exploited the already existing demand for luxury goods and services.
(C) Although the demand for luxury goods may have helped bring about the Industrial Revolution, the demand for luxury services did not.
(D) There is no reason to believe that the Industrial Revolution was directly driven by a growing demand for luxury goods and services.
(E) The increasing demand for luxury goods and services was a cultural phenomenon that has been conclusively demonstrated to have been separate from the coming of the Industrial Revolution.

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*Line
(5)* Researchers are finding that in many ways an individual bacterium is more analogous to a component cell of a multicellular organism than it is to a free-living, autonomous organism. *Anabaena*, a freshwater bacteria, is a case in point. Among photosynthetic bacteria, *Anabaena* is unusual: it is capable of both photosynthesis and nitrogen fixation. Within a single cell, these two biochemical processes are incompatible: oxygen, produced during photosynthesis, inactivates the nitrogenase required for nitrogen fixation. In *Anabaena* communities, however, these processes can coexist.

(10) When fixed nitrogen compounds are abundant, *Anabaena* is strictly photosynthetic and its cells are all alike. When nitrogen levels are low, however, specialized cells called heterocysts are produced which lack chlorophyll (necessary for photosynthesis) but which can fix nitrogen by converting nitrogen gas into a usable form. Submicroscopic channels develop which connect the heterocyst cells with the photosynthetic ones and which are used for transferring cellular products between the two kinds of *Anabaena* cells.

24. According to the passage, which of the following statements is true of bacteria that engage in photosynthesis?

- (A) They eventually become two autonomous cells.
- (B) They cannot normally also engage in nitrogen fixation.
- (C) Oxygen normally inactivates them.
- (D) Cellular products are constantly transferred between such bacteria.
- (E) They normally lack chlorophyll.

25. It can be inferred from the passage that cell differentiation within *Anabaena* is regulated by the

- (A) amount of oxygen *Anabaena* cells produce
- (B) season of the year
- (C) amount of fixed nitrogen compounds available
- (D) number of microscopic channels uniting *Anabaena* cells
- (E) amount of chlorophyll in *Anabaena* cells

26. The passage supports which of the following inferences about heterocysts?

- (A) Heterocysts do not produce oxygen.
- (B) Nitrogen gas inactivates heterocysts.
- (C) Chlorophyll increases the productivity of heterocysts.
- (D) Heterocysts allow nitrogen fixation and photosynthesis to occur in the same cell.
- (E) Heterocysts are more important for *Anabaena*'s functioning than are photosynthetic cells.

27. The author uses the example of *Anabaena* to illustrate the

- (A) uniqueness of bacteria among unicellular organisms
- (B) inadequacy of an existing view of bacteria
- (C) ability of unicellular organisms to engage in photosynthesis
- (D) variability of a freshwater bacteria
- (E) difficulty of investigating even the simplest unicellular organisms

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7. Jones: Because he is a superb athlete, Bob is qualified for admission to the Hall of Fame.

Smith: But because Bob has used illegal drugs, he is a poor role model for young people. Therefore, Bob should not be admitted to the Hall of Fame.

Smith's conclusion depends on which of the following assumptions?

- (A) Superb athletes usually do not use illegal drugs.
 - (B) Bob is interested in being admitted to the Hall of Fame.
 - (C) Bob's use of illegal drugs has had a negative effect on his athletic performance.
 - (D) Being an adequate role model for young people should be one of the criteria for admission to the Hall of Fame.
 - (E) All athletes who are good role models for young people are qualified for admission to the Hall of Fame.
8. The population of peregrine falcons declined rapidly during the 1950's and 1960's and reached an all-time low in the early 1970's. The decline was attributed by scientists to the widespread use of the pesticide DDT in rural areas.

Which of the following, if true, gives the strongest support to the scientists' claim?

- (A) DDT was not generally in use in areas devoted to heavy industry.
- (B) In the time since the use of DDT was banned in 1972, the population of peregrine falcons has been steadily increasing.
- (C) Peregrine falcons, like other birds of prey, abandon eggs that have fallen out of the nest, even if the eggs remain intact.
- (D) Starlings, house sparrows, and blue jays—birds the peregrine falcon preys on—were not adversely affected by DDT in their habitats.
- (E) Other birds of prey, such as the osprey, the bald eagle, and the brown pelican, are found in the same areas as is the peregrine falcon.

9. Last summer one out of every five teen-agers who sought employment failed to find it. This is hard to understand, since during this same time employers were searching for teen-agers to fill an abundance of summer jobs. Many employers had been offering good pay and, in some cases, medical benefits.

Which of the following, if true, most helps to explain why teen-age unemployment was high when there were many job openings?

- (A) Most summer jobs are located in suburban areas that are inaccessible to the high proportion of teen-agers who live in cities.
- (B) During the summer, some teen-agers continue to work at jobs that they have held during the school year.
- (C) Many summer jobs offer training that will help the teen-ager secure a full-time position after graduation.
- (D) A small percentage of teen-agers either attend summer school or go away to camp and thus have no time for a job.
- (E) Many state programs that have been developed to help teen-agers find summer employment have recently had their budgets increased.

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23. According to official government records, in Greenland the suicide rate (suicides per 1,000 people) was seventeen times greater in 1987 than in 1960. Because Greenland changed from a hunting and fishing society to an industrial society between 1960 and 1987, the dramatic increase in suicide must be a result of this societal change.
- Which of the following, if true, casts the most serious doubt on the conclusion drawn above?
- (A) The change from a hunting and fishing society to an industrial society sometimes causes a dramatic increase in a society's crime rate.
- (B) Even in a hunting and fishing society, some proportion of the society's members will choose to commit suicide.
- (C) According to official government records, most of those who committed suicide in Greenland in 1987 were male.
- (D) The life expectancy of Greenland's inhabitants was not much greater in 1987 than it was in 1960, before the societal change occurred.
- (E) In 1987 most suicides that occurred in Greenland were reported as suicides to the appropriate government office, whereas in 1960 most were not.
24. It is a general rule of economics that as the price of an item rises, demand for that item falls and that when the price falls, demand rises. Yet in the United States in 1980, after the price of canned soup rose, demand for canned soup also rose.
- Which of the following, if true about the period when prices for canned soup were rising, best resolves the discrepancy described above?
- (A) Because retail prices fell for both meat and vegetables, the major ingredients of most canned soups, canned soup became more expensive than foods that could be prepared at home with these ingredients.
- (B) Dehydrated soup gained in sales at the expense of canned soup.
- (C) Because the retail prices of other foodstuffs rose faster than the price of canned soup, canned soup became cheaper relative to other foodstuffs.
- (D) Because the retail prices and demand for most other foodstuffs remained stable, demand for them decreased relative to demand for canned soup.
- (E) Consumers became increasingly concerned about the adverse effects of high salt content in many canned soups.

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25. New employees of Ace Industries are complaining about discomfort caused by excessive noise inside Ace's factory. Experienced Ace factory employees, however, do not suffer any such discomfort. Although Ace accepts responsibility for the health of its employees, it has decided not to issue earplugs to new employees. Ace reasoned that the new employees would also become accustomed to the noise without using earplugs.

Which of the following, if true, indicates a flaw in Ace's decision not to issue earplugs to new employees?

- (A) Because the noise in Ace's factory is absorbed by soundproof walls, it cannot be heard by Ace executives in their offices.
- (B) Many of the new employees interviewed said they would not wear earplugs on the job.
- (C) Issuing earplugs to all new employees would be a less effective method of reducing employees' exposure to noise than altering the machinery to be less noisy would be.
- (D) The experienced employees' lack of discomfort is attributable to hearing loss caused by the factory noise.
- (E) The machines in Ace's factory have not become any noisier since the experienced workers were originally hired.

4. The burden of taxation on the back of a people is not unlike the burden of a weight on the back of a horse. Just as a small burden badly placed may distress a horse that could carry with ease a much larger burden properly adjusted, so a people may be impoverished and their power of producing wealth destroyed by taxation that, if levied another way, could be borne with ease.

The author's point is made by

- (A) pointing out an ambiguity
- (B) using an analogy
- (C) refuting a supposed counterexample
- (D) appealing to an authority
- (E) generalizing from a particular case

5. Artificial seaweed made of plastic has been placed on a section of coast in order to reverse beach erosion. The inventor of the seaweed has concluded that the recent buildup of sand on that section of coast proves that the artificial seaweed reverses beach erosion.

Which of the following, if true, would most seriously weaken the inventor's conclusion?

- (A) The amount of recent sand buildup on that section of coast was less than had been predicted on the basis of the results obtained in controlled experiments.
- (B) Because artificial seaweed would be buried eventually by additional sand deposits on the coast, more artificial seaweed would need to be put in place every four years.
- (C) Artificial seaweed of another material which had been previously developed by the inventor failed to add sand to coastline in past trials.
- (D) The amount of recent sand buildup on that section of coast is the same as the amount of recent sand buildup on otherwise very similar sections of coast without artificial seaweed.
- (E) The amount of recent sand buildup on that section of coast, although considerable, is not yet enough to replace the amount lost during storms on that section of coast in the last twenty years.

6. Metropolis' regulation limiting to four days the period during which milk can be sold to consumers after pasteurization is unreasonable. Under optimal conditions, pasteurized milk kept at 40 degrees Fahrenheit remains unspoiled for at least 14 days. If Metropolis' current limitation were changed to eight days, milk prices would drop, but product quality would be unaffected.

Which of the following, if true, would most seriously weaken the conclusion drawn above?

- (A) Most consumers keep milk no more than three days after purchase.
- (B) A recent survey showed that 20 percent of Metropolis consumers favored extending the current limitation on the sale of milk to 8 days.
- (C) Metropolis' grocery-store owners would prefer small, frequent deliveries of milk to larger, infrequent deliveries.
- (D) Milk kept longer than 14 days after pasteurization generally presents no medical dangers if consumed.
- (E) In Metropolis, conditions for handling and storing milk after pasteurization are seldom close to optimum.

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23. Company X recently bought Company Y. Since the two companies had previously been the only companies manufacturing cardboard containers, Company X now has a monopoly in this particular branch of industry and therefore will probably raise the price of its cardboard containers.

Which of the following statements, if true, would most seriously weaken the claim made above?

- (A) An increase in the price of cardboard containers would not necessarily increase the retail price of items packed in these containers.
- (B) The cost of lumber is a major determinant of the cost of cardboard containers.
- (C) There has been a recent increase in demand for cardboard containers.
- (D) Manufacturers of cardboard containers face increasingly stiff competition from manufacturers of plastic containers.
- (E) Before Company X bought Company Y, Company X had consistently set the prices of its cardboard containers below the prices set by Company Y.

24. Chlorofluorocarbons (CFC's) pose known dangers to public health. Only when the United States government imposes a specific ban on the industrial use of CFC's will industry scientists make the alternatives to CFC's cost-effective, and thus reduce public health hazards.

Which of the following is an assumption on which the assertion made above is based?

- (A) The alternatives to CFC's currently available are not widely used because they are not familiar to a sufficient number of industry scientists.
- (B) The alternatives to CFC's are less hazardous to public health than are CFC's.
- (C) Private industry has a responsibility to take voluntary measures to safeguard public health and absorb the costs of such measures.
- (D) The use of CFC's can result in employee time lost because of illness.
- (E) CFC's are currently the most serious public health hazard engendered by industry in the United States.

25. Lobsters usually develop one smaller, cutter claw and one larger, crusher claw. To show that exercise determines which claw becomes the crusher, researchers placed young lobsters in tanks and repeatedly prompted them to grab a probe with one claw—in each case always the same, randomly selected claw. In most of the lobsters the grabbing claw became the crusher. But in a second, similar experiment, when lobsters were prompted to use both claws equally for grabbing, most matured with two cutter claws, even though each claw was exercised as much as the grabbing claws had been in the first experiment.

Which of the following is best supported by the information above?

- (A) Young lobsters usually exercise one claw more than the other.
- (B) Most lobsters raised in captivity will not develop a crusher claw.
- (C) Exercise is not a determining factor in the development of crusher claws in lobsters.
- (D) Cutter claws are more effective for grabbing than are crusher claws.
- (E) Young lobsters that do not exercise either claw will nevertheless usually develop one crusher and one cutter claw.

SECTION 3
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Although economists have traditionally considered the district to be solely an agricultural one, the ----- of the inhabitants' occupations makes such a classification obsolete.
(A) productivity (B) diversity (C) predictability
(D) profitability (E) stability
2. The author of this book ----- overlooks or minimizes some of the problems and shortcomings in otherwise highly successful foreign industries in order to ----- the points on which they excel and on which we might try to emulate them.
(A) accidentally. .exaggerate
(B) purposely. .emphasize
(C) occasionally. .counterbalance
(D) intentionally. .confuse
(E) cleverly. .compound
3. Crosby's colleagues have never learned, at least not in time to avoid embarrassing themselves, that her occasional ----- air of befuddlement ----- a display of her formidable intelligence.
(A) genuine. .dominates (B) alert. .contradicts
(C) acute. .precludes (D) bogus. .presages
(E) painstaking. .succeeds
4. To ensure the development and exploitation of a new technology, there must be a constant ----- of several nevertheless distinct activities.
(A) interplay (B) implementation
(C) comprehending (D) improvement
(E) exploration
5. Some customs travel well; often, however, behavior that is considered the epitome of ----- at home is perceived as impossibly rude or, at the least, harmlessly bizarre abroad.
(A) novelty (B) eccentricity (C) urbanity
(D) coarseness (E) tolerance
6. The ----- of the early Greek philosophers' attempts to explain the operations of the cosmos led certain later thinkers to inquire into the ----- of human reason.
(A) difficulty. .origin
(B) meaning. .supremacy
(C) complexity. .reality
(D) equivocations. .subtlety
(E) failures. .efficacy
7. Ever prey to vagrant impulses that impelled him to ----- his talents on a host of unworthy projects, his very ----- nonetheless enhanced his reputation, for the sheer energy of his extravagance dazzled observers.
(A) undermine. .enthusiasm
(B) isolate. .selectiveness
(C) display. .affability
(D) squander. .dissipation
(E) implicate. .genius

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

*Line
(5)* A serious critic has to comprehend the particular content, unique structure, and special meaning of a work of art. And here she faces a dilemma. The critic must recognize the artistic element of uniqueness that requires subjective reaction; yet she must not be unduly prejudiced by such reactions. Her likes and dislikes are less important than what the work itself communicates, and her preferences may blind her to certain qualities of the work and thereby prevent an adequate understanding of it. Hence, it is necessary that a critic develop a sensibility informed by familiarity with the history of art and aesthetic theory. On the other hand, it is insufficient to treat the artwork solely historically, in relation to a fixed set of ideas or values. The critic's knowledge and training are, rather, a preparation of the cognitive and emotional abilities needed for an adequate personal response to an artwork's own particular qualities.

(10)

(15)

17. According to the author, a serious art critic may avoid being prejudiced by her subjective reactions if she
- (A) treats an artwork in relation to a fixed set of ideas and values
 - (B) brings to her observation a knowledge of art history and aesthetic theory
 - (C) allows more time for the observation of each artwork
 - (D) takes into account the preferences of other art critics
 - (E) limits herself to that art with which she has adequate familiarity

18. The author implies that it is insufficient to treat a work of art solely historically because
- (A) doing so would lead the critic into a dilemma
 - (B) doing so can blind the critic to some of the artwork's unique qualities
 - (C) doing so can insulate the critic from personally held beliefs
 - (D) subjective reactions can produce a biased response
 - (E) critics are not sufficiently familiar with art history
19. The passage suggests that the author would be most likely to agree with which of the following statements?
- (A) Art speaks to the passions as well as to the intellect.
 - (B) Most works of art express unconscious wishes or desires.
 - (C) The best art is accessible to the greatest number of people.
 - (D) The art produced in the last few decades is of inferior quality.
 - (E) The meaning of art is a function of the social conditions in which it was produced.
20. The author's argument is developed primarily by the use of
- (A) an attack on sentimentality
 - (B) an example of successful art criticism
 - (C) a critique of artists' training
 - (D) a warning against extremes in art criticism
 - (E) an analogy between art criticism and art production

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Viruses, infectious particles consisting of nucleic acid packaged in a protein coat (the capsid), are difficult to resist. Unable to reproduce outside a living cell, viruses reproduce only by subverting the genetic mechanisms of a host cell. In one kind of viral life cycle, the virus first binds to the cell's surface, then penetrates the cell and sheds its capsid. The exposed viral nucleic acid produces new viruses from the contents of the cell. Finally, the cell releases the viral progeny, and a new cell cycle of infection begins. The human body responds to a viral infection by producing antibodies: complex, highly specific proteins that selectively bind to foreign molecules such as viruses. An antibody can either interfere with a virus' ability to bind to a cell, or can prevent it from releasing its nucleic acid.

Unfortunately, the common cold, produced most often by rhinoviruses, is intractable to antiviral defense. Humans have difficulty resisting colds because rhinoviruses are so diverse, including at least 100 strains. The strains differ most in the molecular structure of the proteins in their capsids. Since disease-fighting antibodies bind to the capsid, an antibody developed to protect against one rhinovirus strain is useless against other strains. Different antibodies must be produced for each strain.

A defense against rhinoviruses might nonetheless succeed by exploiting hidden similarities among the rhinovirus strains. For example, most rhinovirus strains bind to the same kind of molecule (delta-receptors) on a cell's surface when they attack human cells. Colombo, taking advantage of these common receptors, devised a strategy for blocking the attachment of rhinoviruses to their appropriate receptors. Rather than fruitlessly searching for an antibody that would bind to all rhinoviruses, Colombo realized that an antibody binding to the common receptors of a human cell would prevent rhinoviruses from initiating an infection. Because human cells normally do not develop antibodies to components of their own cells, Colombo injected human cells into mice, which did produce an antibody to the common receptor. In isolated human cells, this antibody proved to be extraordinarily effective at thwarting the rhinovirus. Moreover, when the antibody was given to chimpanzees, it inhibited rhinoviral growth, and in humans it lessened both the severity and duration of cold symptoms.

Another possible defense against rhinoviruses was proposed by Rossman, who described rhinoviruses' detailed molecular structure. Rossman showed that protein sequences common to all rhinovirus strains lie at the base of a deep "canyon" scoring each face of the capsid. The narrow opening of this canyon possibly prevents the relatively large antibody molecules from binding to the common sequence, but smaller molecules might reach it. Among these smaller, nonantibody molecules, some might bind to the common sequence, lock the nucleic acid in its coat, and thereby prevent the virus from reproducing.

21. The primary purpose of the passage is to
 - (A) discuss viral mechanisms and possible ways of circumventing certain kinds of those mechanisms
 - (B) challenge recent research on how rhinoviruses bind to receptors on the surfaces of cells
 - (C) suggest future research on rhinoviral growth in chimpanzees
 - (D) defend a controversial research program whose purpose is to discover the molecular structure of rhinovirus capsids
 - (E) evaluate a dispute between advocates of two theories about the rhinovirus life cycle
22. It can be inferred from the passage that the protein sequences of the capsid that vary most among strains of rhinovirus are those
 - (A) at the base of the "canyon"
 - (B) outside of the "canyon"
 - (C) responsible for producing nucleic acid
 - (D) responsible for preventing the formation of delta-receptors
 - (E) preventing the capsid from releasing its nucleic acid
23. It can be inferred from the passage that a cell lacking delta-receptors will be
 - (A) unable to prevent the rhinoviral nucleic acid from shedding its capsid
 - (B) defenseless against most strains of rhinovirus
 - (C) unable to release the viral progeny it develops after infection
 - (D) protected from new infections by antibodies to the rhinovirus
 - (E) resistant to infection by most strains of rhinovirus
24. Which of the following research strategies for developing a defense against the common cold would the author be likely to find most promising?
 - (A) Continuing to look for a general antirhinoviral antibody
 - (B) Searching for common cell-surface receptors in humans and mice
 - (C) Continuing to look for similarities among the various strains of rhinovirus
 - (D) Discovering how the human body produces antibodies in response to a rhinoviral infection
 - (E) Determining the detailed molecular structure of the nucleic acid of a rhinovirus

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25. It can be inferred from the passage that the purpose of Colonna's experiments was to determine whether
- (A) chimpanzees and humans can both be infected by rhinoviruses
 - (B) chimpanzees can produce antibodies to human cell-surface receptors
 - (C) a rhinovirus' nucleic acid might be locked in its protein coat
 - (D) binding antibodies to common receptors could produce a possible defense against rhinoviruses
 - (E) rhinoviruses are vulnerable to human antibodies
26. According to the passage, Rossman's research suggests that
- (A) a defense against rhinoviruses might exploit structural similarities among the strains of rhinovirus
 - (B) human cells normally do not develop antibodies to components of their own cells
 - (C) the various strains of rhinovirus differ in their ability to bind to the surface of a host cell
 - (D) rhinovirus versatility can work to the benefit of researchers trying to find a useful antibody
 - (E) Colonna's research findings are probably invalid
27. According to the passage, in order for a given antibody to bind to a given rhinoviral capsid, which of the following must be true?
- (A) The capsid must have a deep "canyon" on each of its faces.
 - (B) The antibody must be specific to the molecular structure of the particular capsid.
 - (C) The capsid must separate from its nucleic acid before binding to an antibody.
 - (D) The antibody must bind to a particular cell-surface receptor before it can bind to a rhinovirus.
 - (E) The antibody must first enter a cell containing the particular rhinovirus.

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6. A judicial order of a few years ago was intended to foster competition in the telephone industry; it was thought that competition would lead to savings for consumers. Long-distance calls made during the day are now cheaper than they were before the order, but the average residential user's charges for long-distance calls have risen by 25 percent.

Which of the following, if true, would most directly explain the higher long-distance charges incurred by residential users?

- (A) More long-distance calls are made by businesses than by residential users.
(B) Telephone companies are expanding their services in the areas of computing and data processing.
(C) Rates for calls made during the evening, the time when most residential users make long-distance calls, have increased.
(D) Increased competition has led telephone companies to expand their budgets for the development of new technology.
(E) Telephone companies must receive approval from regulatory agencies before putting rate changes into effect.

7. A program of steady, moderate aerobic exercise coupled with a diet low in saturated fats and cholesterol has been associated with reduced risk of heart attacks and strokes. Therefore, no one who exercises regularly and eats only foods that are low in saturated fats and cholesterol will have a heart attack or stroke.

Of the following, the best criticism of the argument above is that the argument does not

- (A) take into account the possibility of heart attacks and strokes that occur regardless of diet and level of exercise
(B) take into account all of the possible physiological effects of saturated fats and cholesterol
(C) specify whether foods high in saturated fats also contain cholesterol
(D) indicate whether an increased risk of heart attacks and strokes is due more to poor diet or more to lack of exercise
(E) differentiate between the causes of heart attacks and the causes of strokes

8. The number of boats sold in 1973 was greater than the number of boats sold in 1987. However, more money was spent buying boats in 1987 than was spent buying boats in 1973.

Which of the following statements can be properly inferred from the statements above?

- (A) In 1973 the demand for boats exceeded the supply, while in 1987 the supply of boats exceeded the demand.
(B) People were willing to invest a greater proportion of their income in boats in 1987 than they were in 1973.
(C) Between 1973 and 1987, there was a gradual increase in the proportion of large and luxuriously equipped boats sold.
(D) The average (mean) price of boats sold in 1973 was less than that of boats sold in 1987.
(E) Between 1973 and 1987, the number of new boats being made increased.

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23. In the 1950's sixty percent of treated cancer patients lived at least five years after detection of the disease. Now, sixty percent live at least seven years after detection. This fact demonstrates that, because of improved methods of treatment, cancer patients now live longer after they contract the disease than cancer patients did in the 1950's.

The conclusion of the argument above depends on which of the following assumptions?

- (A) In the 1950's only sixty percent of cancer patients received treatment, whereas now a substantially higher percentage does.
- (B) Free medical treatment is more likely to be available now to people who have no health insurance than it was in the 1950's.
- (C) Detection of cancer does not now take place, on average, significantly earlier in the progression of the disease than it did in the 1950's.
- (D) Physicians now usually predict a longer life for cancer patients after detection of the disease than did physicians in the 1950's.
- (E) The number of cancer patients now is approximately the same as it was in the 1950's.

24. The large amounts of carbon dioxide now being released into the atmosphere by the burning of fossil fuels will not, in fact, result in a greenhouse effect—an increase in average global temperatures. Since plants use carbon dioxide in larger quantities if the supply is increased, they are able to grow larger and multiply more vigorously, and atmospheric carbon dioxide concentrations will eventually become stable.

Which of the following, if true, would most seriously weaken the conclusion that a greenhouse effect will not result from the current release of large amounts of carbon dioxide into the atmosphere?

- (A) The expected rise in average global temperatures has not yet been observed.
- (B) Ocean waters absorb carbon dioxide at a greater rate when the atmospheric concentration of carbon dioxide is higher.
- (C) Since the beginning of the Industrial Revolution, increased atmospheric concentrations of carbon dioxide have resulted in improved agricultural productivity.
- (D) When plants decay, they produce methane, another gas that can have a marked greenhouse effect.
- (E) The fact that carbon dioxide levels have risen and fallen many times in the Earth's history suggests that there is some biological process that can reverse the greenhouse effect.

25. The number of people 85 or older in the United States started increasing dramatically during the last ten years. The good health care that these people enjoyed in the United States during their vulnerable childhood years is primarily responsible for this trend.

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

- (A) Seventy-five percent of the people in the United States who are 85 or older are the children of people who themselves lived less than 65 years.
- (B) The people in the United States who are now 85 represent an age group that was smaller in numbers at birth than the immediately preceding and succeeding age groups.
- (C) Thirty-five percent of the people in the United States who are 85 or older require some form of twenty-four-hour nursing care.
- (D) Many of the people in the United States who are 85 or older immigrated to the United States when they were 20 years old or older.
- (E) Because of decreased federal funding for medical care for pregnant mothers and for children, the life expectancy of United States citizens is likely to decrease.

SECTION 6
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Given the existence of so many factions in the field, it was unrealistic of Anna Freud to expect any ----- of opinion.
(A) freedom (B) reassessment (C) uniformity
(D) expression (E) formation
2. Although specific concerns may determine the intent of a research project, its results are often -----.
(A) unanticipated (B) beneficial (C) expensive
(D) spectacular (E) specialized
3. To list Reilly's achievements in a fragmentary way is -----, for it distracts our attention from the ----- themes of her work.
(A) unproductive. .disparate
(B) misleading. .integrating
(C) pragmatic. .comprehensive
(D) logical. .important
(E) inevitable. .unsettling
4. People frequently denigrate books about recent catastrophes as morally ----- attempts to profit from misfortune, but in my view our desire for such books, together with the venerable tradition to which they belong, ----- them.
(A) inopportune. .encourages
(B) fortuitous. .fosters
(C) treacherous. .safeguards
(D) despicable. .legitimizes
(E) corrupt. .generates
5. That many of the important laws of science were discovered during experiments designed to ----- other phenomena suggests that experimental results are the ----- of inevitable natural forces rather than of planning.
(A) analyze. .foundations
(B) disprove. .predecessors
(C) alter. .adjuncts
(D) illuminate. .consequence
(E) verify. .essence
6. Although in eighteenth-century England an active cultural life accompanied the beginnings of middle-class consumerism, the ----- of literacy was ----- with the rise of such consumerism in the different areas of the country.
(A) repudiation. .reconciled
(B) renewal. .inconsistent
(C) promotion. .combined
(D) spread. .compatible
(E) degree. .uncorrelated
7. The trainees were given copies of a finished manual to see whether they could themselves begin to ----- the inflexible, though tacit, rules for composing more of such instructional materials.
(A) design (B) revise (C) disrupt
(D) standardize (E) derive

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Diamonds, an occasional component of rare igneous rocks called lamproites and kimberlites, have never been dated satisfactorily. However, some diamonds contain minute inclusions of silicate minerals, commonly olivine, pyroxene, and garnet. These minerals can be dated by radioactive decay techniques because of the very small quantities of radioactive trace elements they, in turn, contain. Usually, it is possible to conclude that the inclusions are older than their diamond hosts, but with little indication of the time interval involved. Sometimes, however, the crystal form of the silicate inclusions is observed to resemble more closely the internal structure of diamond than that of other silicate minerals. It is not known how rare this resemblance is, or whether it is most often seen in inclusions of silicates such as garnet, whose crystallography is generally somewhat similar to that of diamond; but when present, the resemblance is regarded as compelling evidence that the diamonds and inclusions are truly cogenetic.

- Line
(5) 17. The author implies that silicate inclusions were most often formed
- (A) with small diamonds inside of them
 - (B) with trace elements derived from their host minerals
 - (C) by the radioactive decay of rare igneous rocks
 - (D) at an earlier period than were their host minerals
 - (E) from the crystallization of rare igneous material

- (10) 18. According to the passage, the age of silicate minerals included in diamonds can be determined due to a feature of the
- (A) trace elements in the diamond hosts
 - (B) trace elements in the rock surrounding the diamonds
 - (C) trace elements in the silicate minerals
 - (D) silicate minerals' crystal structure
 - (E) host diamonds' crystal structure
- (15) 19. The author states that which of the following generally has a crystal structure similar to that of diamond?
- (A) Lamproite
 - (B) Kimberlite
 - (C) Olivine
 - (D) Pyroxene
 - (E) Garnet
20. The main purpose of the passage is to
- (A) explain why it has not been possible to determine the age of diamonds
 - (B) explain how it might be possible to date some diamonds
 - (C) compare two alternative approaches to determining the age of diamonds
 - (D) compare a method of dating diamonds with a method used to date certain silicate minerals
 - (E) compare the age of diamonds with that of certain silicate minerals contained within them

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Line
(5) Discussion of the assimilation of Puerto Ricans in the United States has focused on two factors: social standing and the loss of national culture. In general, excessive stress is placed on one factor or the other, depending on whether the commentator is North American or Puerto Rican. Many North American social scientists, such as Oscar Handlin, Joseph Fitzpatrick, and Oscar Lewis, consider Puerto Ricans as the most recent in a long line of ethnic entrants to
(10) occupy the lowest rung on the social ladder. Such a “sociodemographic” approach tends to regard assimilation as a benign process, taking for granted increased economic advantage and inevitable cultural integration, in a supposedly egalitarian context. However, this approach fails to take into account the colonial nature of the Puerto Rican case, with this group, unlike their European predecessors, coming from a nation politically subordinated to the United States. Even the “radical” critiques of this mainstream research model, such as the critique developed in *Divided Society*, attach the issue of ethnic assimilation too mechanically to factors of economic and social mobility and are thus unable to illuminate the cultural subordination of Puerto Ricans as a colonial minority.

(25) In contrast, the “colonialist” approach of island-based writers such as Eduardo Seda-Bonilla, Manuel Maldonado-Denis, and Luis Nieves-Falcón tends to view assimilation as the forced loss of national culture in an unequal contest with imposed foreign values.
(30) There is, of course, a strong tradition of cultural accommodation among other Puerto Rican thinkers. The writings of Eugenio Fernández Méndez clearly exemplify this tradition, and many supporters of Puerto Rico’s commonwealth status share the same universalizing orientation. But the Puerto Rican intellectuals who have written most about the assimilation process in the United States all advance cultural nationalist views, advocating the preservation of minority cultural distinctions and rejecting what they see as the subjugation of
(35) colonial nationalities.

(40) This cultural and political emphasis is appropriate, but the colonialist thinkers misdirect it, overlooking the class relations at work in both Puerto Rican and North American history. They pose the clash of national cultures as an absolute polarity, with each culture understood as static and undifferentiated. Yet both the Puerto Rican and North American traditions have been subject to constant challenge from cultural forces within their own societies, forces that may move toward each other in ways that cannot be written off as mere “assimilation.” Consider, for example, the indigenous and Afro-Caribbean traditions in Puerto Rican culture and how they influence and are influenced by other Caribbean cultures and Black cultures in the United States. The
(45) elements of coercion and inequality, so central to cultural contact according to the colonialist framework, play no role in this kind of convergence of racially and ethnically different elements of the same social class.
(50)
(55)

21. The author’s main purpose is to
- (A) criticize the emphasis on social standing in discussions of the assimilation of Puerto Ricans in the United States
 - (B) support the thesis that assimilation has not been a benign process for Puerto Ricans
 - (C) defend a view of the assimilation of Puerto Ricans that emphasizes the preservation of national culture
 - (D) indicate deficiencies in two schools of thought on the assimilation of Puerto Ricans in the United States
 - (E) reject the attempt to formulate a general framework for discussion of the assimilation of Puerto Ricans in the United States
22. According to the passage, cultural accommodation is promoted by
- (A) Eduardo Seda-Bonilla
 - (B) Manuel Maldonado-Denis
 - (C) the author of *Divided Society*
 - (D) the majority of social scientists writing on immigration
 - (E) many supporters of Puerto Rico’s commonwealth status
23. It can be inferred from the passage that a writer such as Eugenio Fernández Méndez would most likely agree with which of the following statements concerning members of minority ethnic groups?
- (A) It is necessary for the members of such groups to adapt to the culture of the majority.
 - (B) The members of such groups generally encounter a culture that is static and undifferentiated.
 - (C) Social mobility is the most important feature of the experience of members of such groups.
 - (D) Social scientists should emphasize the cultural and political aspects of the experience of members of such groups.
 - (E) The assimilation of members of such groups requires the forced abandonment of their authentic national roots.

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24. The author implies that the Puerto Rican writers who have written most about assimilation do NOT do which of the following?
- (A) Regard assimilation as benign.
 - (B) Resist cultural integration.
 - (C) Describe in detail the process of assimilation.
 - (D) Take into account the colonial nature of the Puerto Rican case.
 - (E) Criticize supporters of Puerto Rico's commonwealth status.
25. It can be inferred from the passage that the "colonialist" approach is so called because its practitioners
- (A) support Puerto Rico's commonwealth status
 - (B) have a strong tradition of cultural accommodation
 - (C) emphasize the class relations at work in both Puerto Rican and North American history
 - (D) pose the clash of national cultures as an absolute polarity in which each culture is understood as static and undifferentiated
 - (E) regard the political relation of Puerto Rico to the United States as a significant factor in the experience of Puerto Ricans
26. The author regards the emphasis by island-based writers on the cultural and political dimensions of assimilation as
- (A) ironic
 - (B) dangerous
 - (C) fitting but misdirected
 - (D) illuminating but easily misunderstood
 - (E) peculiar but benign
27. The example discussed in lines 51-54 is intended by the author to illustrate a
- (A) strength of the sociodemographic approach
 - (B) strength of the "colonialist" approach
 - (C) weakness of the sociodemographic approach
 - (D) weakness of the "colonialist" approach
 - (E) weakness of the cultural-accommodationist approach

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6. The average after-tax income for a household was 2.4 percent higher in 1983 than in 1982. At the same time, average after-tax income declined for households at the lower- and middle-income levels.

Which of the following can be most reasonably inferred from the information above?

- (A) There were more households overall in 1983 than in 1982.
 - (B) There were fewer households at the upper-income level in 1983 than in 1982.
 - (C) Total after-tax income for all households at the lower- and middle-income levels was higher in 1983 than in 1982.
 - (D) Average after-tax income for households at the upper-income level rose by more than 2.4 percent between 1982 and 1983.
 - (E) Average after-tax income for households at the lower- and middle-income levels was declining prior to 1982.
7. A study of attitudes toward new cars showed that cars that were identical in every respect except color received widely differing ratings for quality from potential buyers. Therefore, in future advertisements for cars of high quality, we can expect to see no variety in the color of car featured.

Which of the following is an assumption made in the passage above?

- (A) If a car in a preferred color is not available, a buyer is usually willing to accept the car in another color.
- (B) New cars differ significantly from each other with respect to quality.
- (C) There is a single color generally associated with the highest quality rating in the study.
- (D) An advertisement for a particular car should display all of its significant advantages.
- (E) Potential buyers give more weight to color than to price in making a decision about a car.

8. Sometime during the 1950's, rock music permanently ousted jazz from the music scene. This is evident from the behavior of youths of that time. In crowded nightclubs they would applaud rock acts enthusiastically. But when a jazz act began, they went outside and got refreshments. They came back in only when the jazz set was finished.

Which of the following statements, if true, is a valid objection to the conclusion drawn above?

- (A) Jazz is the most important musical contribution of the United States to world culture.
- (B) Although some young people who attended nightclubs in the 1950's did try to listen to jazz, they eventually became bored with it.
- (C) Since the 1960's, rock music has not only provided youths with recreation but has, as well, become a rallying point for making social statements.
- (D) Although by 1960 jazz performances were less popular, there has since been a revival of interest in jazz among middle-class professionals.
- (E) Jazz steadily increased in popularity between the 1930's and the 1950's.

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Questions 19-22

The officers of Renco Manufacturing are analyzing their company's chances of winning a large contract to manufacture equipment for the state highway department. Renco is one of five companies competing for the contract: the others are Selway, Inc., Tate Industries, Upshaw Corp., and Velco. The contract will be awarded on the basis of points given in three categories: cost, amount of experience on similar contracts, and quality of equipment. In each category, the company that is best in that category will receive five points, the second best, 4 points, and so on down to 1. There will be no ties within any of the categories. The company that receives the highest total number of points will be awarded the contract. In the event of a tie, the company with the higher number of 5's will be awarded the contract; if the number of 5's is the same, additional criteria will be used to break the tie.

19. The highest total number of points that any of the competing companies can receive is

(A) twelve
(B) fourteen
(C) fifteen
(D) twenty
(E) twenty-five

20. If no one company is given the same number of points in any two categories, the highest possible winning total is

(A) eleven
(B) twelve
(C) thirteen
(D) fourteen
(E) fifteen

21. If the five companies tie with nine points each, which of the following CANNOT be the distribution of points received by any of the companies?

(A) Three 3's
(B) Two 4's and a 1
(C) A 5 and two 2's
(D) A 4, a 3, and a 2
(E) A 5, a 3, and a 1

22. If Selway, Inc. and Velco between them receive all of the 1's and 2's and each of the remaining three competitors receives a 5, Renco would need to receive how many points in addition to its 5 to be awarded the contract without having first been tied for total number of points?
- (A) Four
(B) Five
(C) Six
(D) Seven
(E) Eight
-

23. Persons imprisoned for violent street crimes often commit the same crimes again after being released. Persons imprisoned for white-collar crimes such as receiving bribes or embezzlement, however, typically do not, after being released, repeat the crimes for which they have been imprisoned. It is fair to conclude that imprisonment, while it often fails to change the behavior of violent street criminals, does succeed in making white-collar criminals unwilling to repeat their crimes.

Which of the following, if true, would most seriously weaken the conclusion stated above?

- (A) Statistics show that persons convicted of committing white-collar crimes rarely have a prison record.
(B) The percentage of those who commit white-collar crimes and are imprisoned for doing so is lower than the percentage of those who commit violent street crimes and are imprisoned for doing so.
(C) White-collar criminals whose prison sentences are shortened return to criminal activities at a slightly higher rate than white-collar criminals who serve their full sentences.
(D) Persons released from prison after white-collar crimes are seldom given high positions or access to other people's money.
(E) Persons who commit violent street crimes seldom commit white-collar crimes, and vice versa.

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24. Industrial solvents, which can damage the liver, kidneys, and nervous system, often drain into public water supplies. Currently, tested water is considered pure if the amount of solvent an individual is exposed to through drinking one-half gallon of water per day—roughly what a typical adult drinks per day—does not pose a significant threat to human health. But many toxicologists claim that the standard set by this method does not adequately protect the public.
- Which of the following, if true, would best support the claim of the toxicologists mentioned above?
- (A) The figure of one-half gallon a day includes water contained in beverages such as soft drinks, which are often bottled at locations distant from where they are consumed.
- (B) Some industrial solvents have less toxic but more expensive analogues that industry has not adopted for use.
- (C) Water treatment centers usually filter out bacteria and other organisms before the water is pumped into public supply systems.
- (D) Industrial polluters are rarely fined or punished, even when they knowingly allow toxic chemicals to enter water supplies.
- (E) More solvent enters the body through skin absorption, during washing and bathing, than through drinking.
25. Many behavioral studies of the psychological capacities of animals reveal hardly any difference between rats and chimpanzees. The most reasonable explanation for such results is that the studies themselves are inadequate.

The argument above relies on the unstated premise that

- (A) rats and chimpanzees do not have highly developed psychological capacities
- (B) the results of psychological studies of animals are often misinterpreted by biased experimenters
- (C) there is no way to measure objectively the psychological capacities of animals
- (D) there is considerable difference between the psychological capacities of rats and those of chimpanzees
- (E) examining the brain of an animal is a better means of determining its psychological capacity than is a study of the animal's behavior

SECTION 3

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Many artists believe that successful imitation, far from being symptomatic of a lack of -----, is the first step in learning to be creative.
(A) elegance (B) resolution (C) goodness
(D) originality (E) sympathy
2. As serious as she is about the bullfight, she does not allow respect to ----- her sense of whimsy when painting it.
(A) inspire (B) provoke (C) suppress
(D) attack (E) satisfy
3. No one is ----- about Stephens; he inspires either uncritical adulation or profound ----- in those who work for him.
(A) neutral.. antipathy
(B) infuriated.. aversion
(C) worried.. anxiety
(D) enthusiastic.. veneration
(E) apprehensive.. consternation
4. Before about 1960, virtually all accounts of evolution assumed most adaptation to be a product of selection at the level of populations; recent studies of evolution, however, have found no ----- this ----- view of selection.
(A) departures from .. controversial
(B) basis for .. pervasive
(C) bias toward .. unchallenged
(D) precursors of .. innovative
(E) criticisms of .. renowned
5. The new biological psychiatry does not deny the contributing role of psychological factors in mental illnesses, but posits that these factors may act as a catalyst on existing physiological conditions and ----- such illnesses.
(A) disguise (B) impede (C) constrain
(D) precipitate (E) consummate
6. During periods of social and cultural stability, many art academies are so firmly controlled by ----- that all real creative work must be done by the -----.
(A) dogmatists.. disenfranchised
(B) managers.. reactionaries
(C) reformers.. dissatisfied
(D) imposters.. academicians
(E) specialists.. elite
7. The First World War began in a context of jargon and verbal delicacy and continued in a cloud of ----- as ----- as language and literature, skillfully used, could make it.
(A) circumlocution.. literal
(B) cliché.. lucid
(C) euphemism.. impenetrable
(D) particularity.. deliberate
(E) subjectivity.. entralling

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

*Line
(5)*
Geologists have long known that the Earth's mantle is heterogeneous, but its spatial arrangement remains unresolved—is the mantle essentially layered or irregularly heterogeneous? The best evidence for the layered-mantle thesis is the well-established fact that volcanic rocks found on oceanic islands, islands believed to result from mantle plumes arising from the lower mantle, are composed of material fundamentally different from that of the midocean ridge system, whose source, most geologists contend, is the upper mantle.

(10) Some geologists, however, on the basis of observations concerning mantle xenoliths, argue that the mantle is not layered, but that heterogeneity is created by fluids rich in "incompatible elements" (elements tending toward liquid rather than solid state) percolating upward and transforming portions of the upper mantle irregularly, according to the vagaries of the fluids' pathways. We believe, perhaps unimaginatively, that this debate can be resolved through further study, and that the underexplored midocean ridge system is the key.

(15) 17. Which of the following best expresses the main idea of the passage?

- (A) Current theories regarding the structure of the Earth's mantle cannot account for new discoveries regarding the composition of mantle xenoliths.
- (B) There are conflicting hypotheses about the heterogeneity of the Earth's mantle because few mantle elements have been thoroughly studied.
- (C) Further research is needed to resolve the debate among geologists over the composition of the midocean ridge system.
- (D) There is clear-cut disagreement within the geological community over the structure of the Earth's mantle.
- (E) There has recently been a strong and exciting challenge to geologists' long-standing belief in the heterogeneity of the Earth's mantle.

18. According to the passage, it is believed that oceanic islands are formed from

- (A) the same material as mantle xenoliths
- (B) the same material as the midocean ridge system
- (C) volcanic rocks from the upper mantle
- (D) incompatible elements percolating up from the lower mantle
- (E) mantle plumes arising from the lower mantle

19. It can be inferred from the passage that the supporters of the "layered-mantle" theory believe which of the following?

- I. The volcanic rocks on oceanic islands are composed of material derived from the lower part of the mantle.
 - II. The materials of which volcanic rocks on oceanic islands and midocean ridges are composed are typical of the layers from which they are thought to originate.
 - III. The differences in composition between volcanic rocks on oceanic islands and the midocean ridges are a result of different concentrations of incompatible elements.
- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III

20. The authors suggest that their proposal for determining the nature of the mantle's heterogeneity might be considered by many to be

- (A) pedestrian
- (B) controversial
- (C) unrealistic
- (D) novel
- (E) paradoxical

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Many literary detectives have pored over a great puzzle concerning the writer Marcel Proust: what happened in 1909? How did *Contre Saint-Beuve*, an essay attacking the methods of the critic Saint-Beuve, turn into the start of the novel *Remembrance of Things Past*? A recently published letter from Proust to the editor Vallette confirms that Fallois, the editor of the 1954 edition of *Contre Saint-Beuve*, made an essentially correct guess about the relationship of the essay to the novel. Fallois proposed that Proust had tried to begin a novel in 1908, abandoned it for what was to be a long demonstration of Saint-Beuve's blindness to the real nature of great writing, found the essay giving rise to personal memories and fictional developments, and allowed these to take over in a steadily developing novel.

Draft passages in Proust's 1909 notebooks indicate that the transition from essay to novel began in *Contre Saint-Beuve*, when Proust introduced several examples to show the powerful influence that involuntary memory exerts over the creative imagination. In effect, in trying to demonstrate that the imagination is more profound and less submissive to the intellect than Saint-Beuve assumed, Proust elicited vital memories of his own and, finding subtle connections between them, began to amass the material for *Remembrance*. By August, Proust was writing to Vallette, informing him of his intention to develop the material as a novel. Maurice Bardèche, in *Marcel Proust, romancier*, has shown the importance in the drafts of *Remembrance* of spontaneous and apparently random associations of Proust's subconscious. As incidents and reflections occurred to Proust, he continually inserted new passages altering and expanding his narrative. But he found it difficult to control the drift of his inspiration. The very richness and complexity of the meaningful relationships that kept presenting and rearranging themselves on all levels, from abstract intelligence to profound dreamy feelings, made it difficult for Proust to set them out coherently. The beginning of control came when he saw how to connect the beginning and the end of his novel.

Intrigued by Proust's claim that he had "begun and finished" *Remembrance* at the same time, Henri Bonnet discovered that parts of *Remembrance*'s last book were actually started in 1909. Already in that year, Proust had drafted descriptions of his novel's characters in their old age that would appear in the final book of *Remembrance*, where the permanence of art is set against the ravages of time. The letter to Vallette, drafts of the essay and novel, and Bonnet's researches establish in broad outline the process by which Proust generated his novel out of the ruins of his essay. But those of us who hoped, with Kolb, that Kolb's newly published complete edition of Proust's correspondence for 1909 would document the process in greater detail are disappointed. For until Proust was confident that he was at last in sight of a viable structure for *Remembrance*, he told few correspondents that he was producing anything more ambitious than *Contre Saint-Beuve*.

- Line (5) 21. The passage is primarily concerned with
- the role of involuntary memory in Proust's writing
 - evidence concerning the genesis of Proust's novel *Remembrance of Things Past*
 - conflicting scholarly opinions about the value of studying the drafts of *Remembrance of Things Past*
 - Proust's correspondence and what it reveals about *Remembrance of Things Past*
 - the influence of Saint-Beuve's criticism on Proust's novel *Remembrance of Things Past*
- (10) 22. It can be inferred from the passage that all of the following are literary detectives who have tried, by means of either scholarship or criticism, to help solve the "great puzzle" mentioned in lines 1-2 EXCEPT
- Bardèche
 - Bonnet
 - Fallois
 - Kolb
 - Vallette
- (15) 23. According to the passage, in drafts of *Contre Saint-Beuve* Proust set out to show that Saint-Beuve made which of the following mistakes as a critic?
- I. Saint-Beuve made no effort to study the development of a novel through its drafts and revisions.
 - II. Saint-Beuve assigned too great a role in the creative process to a writer's conscious intellect.
 - III. Saint-Beuve concentrated too much on plots and not enough on imagery and other elements of style.
- II only
 - III only
 - I and II only
 - I and III only
 - I, II, and III

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24. Which of the following best states the author's attitude toward the information that scholars have gathered about Proust's writing in 1909?
- (A) The author is disappointed that no new documents have come to light since Fallois's speculations.
- (B) The author is dissatisfied because there are too many gaps and inconsistencies in the drafts.
- (C) The author is confident that Fallois's 1954 guess has been proved largely correct, but regrets that still more detailed documentation concerning Proust's transition from the essay to the novel has not emerged.
- (D) The author is satisfied that Fallois's judgment was largely correct, but feels that Proust's early work in designing and writing the novel was probably far more deliberate than Fallois's description of the process would suggest.
- (E) The author is satisfied that the facts of Proust's life in 1909 have been thoroughly established, but believes such documents as drafts and correspondence are only of limited value in a critical assessment of Proust's writing.
25. The author of the passage implies that which of the following would be the LEAST useful source of information about Proust's transition from working on *Contre Saint-Beuve* to having a viable structure for *Remembrance of Things Past*?
- (A) Fallois's comments in the 1954 edition of *Contre Saint-Beuve*
- (B) Proust's 1909 notebooks, including the drafts of *Remembrance of Things Past*
- (C) Proust's 1909 correspondence, excluding the letter to Vallette
- (D) Bardèche's *Marcel Proust, romancier*
- (E) Bonnet's researches concerning Proust's drafts of the final book of *Remembrance of Things Past*
26. The passage offers information to answer which of the following questions?
- (A) Precisely when in 1909 did Proust decide to abandon *Contre Saint-Beuve*?
- (B) Precisely when in 1909 did Proust decide to connect the beginning and the end of *Remembrance of Things Past*?
- (C) What was the subject of the novel that Proust attempted in 1908?
- (D) What specific criticisms of Saint-Beuve appear, in fictional form, in *Remembrance of Things Past*?
- (E) What is a theme concerning art that appears in the final book of *Remembrance of Things Past*?
27. Which of the following best describes the relationship between *Contre Saint-Beuve* and *Remembrance of Things Past* as it is explained in the passage?
- (A) Immediately after abandoning *Contre Saint-Beuve*, at Vallette's suggestion, Proust started *Remembrance* as a fictional demonstration that Saint-Beuve was wrong about the imagination.
- (B) Immediately after abandoning *Contre Saint-Beuve*, at Vallette's suggestion, Proust turned his attention to *Remembrance*, starting with incidents that had occurred to him while planning the essay.
- (C) Despondent that he could not find a coherent structure for *Contre Saint-Beuve*, an essay about the role of memory in fiction, Proust began instead to write *Remembrance*, a novel devoted to important early memories.
- (D) While developing his argument about the imagination in *Contre Saint-Beuve*, Proust described and began to link together personal memories that became a foundation for *Remembrance*.
- (E) While developing his argument about memory and imagination in *Contre Saint-Beuve*, Proust created fictional characters to embody the abstract themes in his essay.

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4. Because of rules imposed by the Federal Drug Administration restricting the sale of thalidomide, many people who have trouble sleeping turn to barbiturates. Yet each year barbiturate-alcohol interactions cause the deaths of over a thousand people who probably would have lived had they used thalidomide instead of barbiturates, even without changing their alcohol consumption.
- Which of the following statements about thalidomide is best supported by the statements above?
- (A) Thalidomide alone poses no serious health risks.
(B) Barbiturates alone are more dangerous than alcohol alone.
(C) Thalidomide is a more effective sleeping aid than barbiturates.
(D) In some cases, the thalidomide-barbiturate interaction would be less dangerous than the barbiturate-alcohol interaction.
(E) In some cases, the thalidomide-alcohol interaction would be less life-threatening than the barbiturate-alcohol interaction.
5. Existing United States landfills are rapidly approaching the limits of their capacity. Landfills can leach toxins into groundwater, polluting it. Instead of creating more landfills, solid-waste managers should recycle as much trash as possible and then incinerate the remainder. This will keep future environmental damage to a minimum.
- Which of the following is an assumption on which the argument made above is based?
- (A) Future landfills will pollute the environment more than do those that already exist.
(B) After existing landfills reach the limit of their capacity, they are closed, and the leaching of toxins from these sites decreases.
(C) Reducing the volume of trash through recycling will not lessen future environmental danger unless the remaining trash is subsequently incinerated.
(D) The environmental damage caused by the proposed incineration of trash would be less than that caused by the leaching of toxins from new landfills into groundwater.
(E) No new landfill sites can be found in order to increase the total capacity of landfills in the United States.
6. According to a 1980 survey, ten percent of all United States citizens over the age of sixteen are functionally illiterate. Therefore, if the projection that there will be 250 million United States citizens over sixteen in the year 2000 is correct, we project that 25 million of these citizens will be functionally illiterate.
- Which of the following, if true, would most weaken the conclusion drawn by the author of the passage above?
- (A) The percentage of high school graduates who do not go on to college has grown steadily over the past two decades.
(B) From 1975 to 1980 there was a three-percent decrease in the rate of functional illiteracy among United States citizens over the age of sixteen.
(C) Many United States citizens included in the 1980 survey would also be included in a survey conducted in the year 2000.
(D) Surveys that are improperly designed usually provide inaccurate results.
(E) In 1980 sixty-five percent of all United States citizens were over the age of sixteen.

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Questions 20-22

Exactly seven people—Q, R, S, T, X, Y, and Z—serve on an advisory board. Q, R, S, and T have been elected to the board, and X, Y, and Z have been appointed to the board. Three-person or four-person panels are sometimes drawn from the board to study proposals. Each panel must include at least one elected and at least one appointed board member, but no panel can consist of equal numbers of elected and appointed members. Each panel is chaired by a person who is a member of the group of board members (elected or appointed) whose representatives are in the minority on that panel. Any panel must also conform to the following conditions:

If Q serves on a panel, T cannot serve on that panel.

If R serves on a panel, X cannot serve on that panel.

T and Y cannot serve on a panel unless they serve together.

If Z serves on a panel, X must also serve on that panel.

20. Which of the following could be a panel drawn from the advisory board?

- (A) Q, R, S
- (B) S, X, Z
- (C) T, Y, Z
- (D) Q, S, T, Y
- (E) R, T, X, Y

21. If R serves on a panel, it must be true that

- (A) it is a three-person panel
- (B) it is a four-person panel
- (C) R chairs the panel
- (D) T chairs the panel
- (E) Y chairs the panel

22. Each of the following could chair a panel EXCEPT

- (A) S
- (B) T
- (C) X
- (D) Y
- (E) Z

23. On the basis of figures it compiles, a citizens' group argues that congressional members of Party X authorize the spending of more taxpayer dollars than do congressional members of Party Y. The group's figures are based on an analysis of the number of spending bills for which members of Congress vote.

The figures of the citizens' group will be unreliable as a gauge of which party in Congress spends more taxpayer dollars if which of the following is true?

- (A) The group weighs all votes for spending bills equally, no matter how much taxpayer money is involved in each bill.
- (B) The group counts votes for all spending bills, including bills concerning the salaries of members of Congress.
- (C) Most spending bills that are introduced in Congress are passed by Congress.
- (D) Most spending bills that members of Party X vote for are written and sponsored by members of Party X.
- (E) All spending bills, before being voted on by Congress, must be approved by committees in which members of both parties participate.

GO ON TO THE NEXT PAGE.

24. Statistics over four consecutive years showed that four percent more automobile accidents happened in California during the week following the switch to daylight saving time and during the week following the switch back to standard time than occurred the week before each event. These statistics show that these time changes adversely affect the alertness of California drivers.

The conclusion in the argument above is based on which of the following assumptions?

- (A) Drivers in California as well as those in the rest of the United States have similar driving patterns.
- (B) The observed increases in accident rates are due almost entirely to an increase in the number of minor accidents.
- (C) Four years is not a sufficiently long period of time over which to judge the phenomenon described.
- (D) There are no other factors such as school vacations or holiday celebrations that cause accident rates to rise during these weeks.
- (E) A time change at any other time of year would not produce a similar increase in accident rates.

25. Since 1945 there have been numerous international confrontations as tense as those that precipitated the Second World War, and yet no large-scale conflict has resulted. To explain this, some argue that fear of enormous destruction such as the Second World War produced has had a dramatic deterrent effect.

Which of the following, if true, most seriously weakens the deterrent theory mentioned above?

- (A) After the First World War, the fear of great future destruction was as intense as it was after the Second World War.
- (B) Psychologists have determined that the fear of retaliation tends to temper aggressiveness among human beings.
- (C) The Second World War was far less destructive than most people generally believe.
- (D) Fear of repeating the levels of destruction that the Second World War produced is as pervasive today as it was forty years ago.
- (E) Many of the international confrontations that have occurred since 1945 have involved countries that participated in the Second World War.

SECTION 6

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Because no comprehensive ----- exist regarding personal reading practices, we do not know, for example, the greatest number of books read in an individual lifetime.
(A) records
(B) instincts
(C) remedies
(D) proposals
(E) commercials
2. In our corporation there is a ----- between male and female ----- because 73 percent of the men and 34 percent of the women polled believe that our company provides equal compensation to men and women.
(A) contrast.. .stereotypes
(B) difference.. .perceptions
(C) variation.. .salaries
(D) resemblance.. .employees
(E) similarity.. .aspirations
3. The wonder of De Quincey is that although opium dominated his life, it never ----- him; indeed, he turned its use to ----- when he published the story of its influence in the *London Magazine*.
(A) overcame.. .altruism
(B) intimidated.. .triumph
(C) distressed.. .pleasure
(D) conquered.. .gain
(E) released.. .necessity
4. The reduction of noise has been ----- in terms of ----- its sources, but the alternative of canceling noise out by adding sound with the opposite wave pattern may be more useful in practice.
(A) justified.. .diffusing
(B) accomplished.. .tracking
(C) conceived.. .concealing
(D) explained.. .isolating
(E) approached.. .eliminating
5. While Parker is very outspoken on issues she cares about, she is not -----; she concedes the ----- of opposing arguments when they expose weaknesses inherent in her own.
(A) fickle.. .validity
(B) arrogant.. .restraint
(C) fanatical.. .strength
(D) congenial.. .incompatibility
(E) unyielding.. .speciousness
6. Hampshire's assertions, far from showing that we can ----- the ancient puzzles about objectivity, reveal the issue to be even more ----- than we had thought.
(A) adapt.. .pressing
(B) dismiss.. .relevant
(C) rediscover.. .unconventional
(D) admire.. .elusive
(E) appreciate.. .interesting
7. Usually the first to spot data that were inconsistent with other findings, in this particular experiment she let a number of ----- results slip by.
(A) inaccurate
(B) verifiable
(C) redundant
(D) salient
(E) anomalous

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

*Line
(5)*
Traditional research has confronted only Mexican and United States interpretations of Mexican-American culture. Now we must also examine the culture as we Mexican Americans have experienced it, passing from a sovereign people to compatriots with newly arriving settlers to, finally, a conquered people—a charter minority on our own land.

When the Spanish first came to Mexico, they intermarried with and absorbed the culture of the indigenous Indians. This policy of colonization through acculturation was continued when Mexico acquired Texas in the early 1800's and brought the indigenous Indians into Mexican life and government. In the 1820's, United States citizens migrated to Texas, attracted by land suitable for cotton. As their numbers became more substantial, their policy of acquiring land by subduing native populations began to dominate. The two ideologies clashed repeatedly, culminating in a military conflict that led to victory for the United States. Thus, suddenly deprived of our parent culture, we had to evolve uniquely Mexican-American modes of thought and action in order to survive.

17. The author's purpose in writing this passage is primarily to
- (A) suggest the motives behind Mexican and United States intervention in Texas
 - (B) document certain early objectives of Mexican-American society
 - (C) provide a historical perspective for a new analysis of Mexican-American culture
 - (D) appeal to both Mexican and United States scholars to give greater consideration to economic interpretations of history
 - (E) bring to light previously overlooked research on Mexican Americans
18. The author most probably uses the phrase "charter minority" (lines 6-7) to reinforce the idea that Mexican Americans
- (A) are a native rather than an immigrant group in the United States
 - (B) played an active political role when Texas first became part of the United States
 - (C) recognized very early in the nineteenth century the need for official confirmation of their rights of citizenship
 - (D) have been misunderstood by scholars trying to interpret their culture
 - (E) identify more closely with their Indian heritage than with their Spanish heritage

19. According to the passage, a major difference between the colonization policy of the United States and that of Mexico in the 1800's was the
- (A) degree to which policies were based on tradition
 - (B) form of economic interdependency between different cultural groups
 - (C) number of people who came to settle new areas
 - (D) treatment of the native inhabitants
 - (E) relationship between the military and the settlers
20. Which of the following statements most clearly contradicts the information in this passage?
- (A) In the early 1800's, the Spanish committed more resources to settling California than to developing Texas.
 - (B) While Texas was under Mexican control, the population of Texas quadrupled, in spite of the fact that Mexico discouraged immigration from the United States.
 - (C) By the time Mexico acquired Texas, many Indians had already married people of Spanish heritage.
 - (D) Many Mexicans living in Texas returned to Mexico after Texas was annexed by the United States.
 - (E) Most Indians living in Texas resisted Spanish acculturation and were either killed or enslaved.

GO ON TO THE NEXT PAGE.

This passage was adapted from an article published in 1982.

Until about five years ago, the very idea that peptide hormones might be made anywhere in the brain besides the hypothalamus was astounding. Peptide hormones, scientists thought, were made by endocrine glands and the hypothalamus was thought to be the brains' only endocrine gland. What is more, because peptide hormones cannot cross the blood-brain barrier, researchers believed that they never got to any part of the brain other than the hypothalamus, where they were simply produced and then released into the bloodstream.

But these beliefs about peptide hormones were questioned as laboratory after laboratory found that antisera to peptide hormones, when injected into the brain, bind in places other than the hypothalamus, indicating that either the hormones or substances that cross-react with the antisera are present. The immunological method of detecting peptide hormones by means of antisera, however, is imprecise. Cross-reactions are possible and this method cannot determine whether the substances detected by the antisera are really the hormones, or merely close relatives. Furthermore, this method cannot be used to determine the location in the body where the detected substances are actually produced.

New techniques of molecular biology, however, provide a way to answer these questions. It is possible to make specific complementary DNA's (cDNA's) that can serve as molecular probes to seek out the messenger RNA's (mRNA's) of the peptide hormones. If brain cells are making the hormones, the cells will contain these mRNA's. If the products the brain cells make resemble the hormones but are not identical to them, then the cDNA's should still bind to these mRNA's, but should not bind as tightly as they would to mRNA's for the true hormones. The cells containing these mRNA's can then be isolated and their mRNA's decoded to determine just what their protein products are and how closely the products resemble the true peptide hormones.

The molecular approach to detecting peptide hormones using cDNA probes should also be much faster than the immunological method because it can take years of tedious purifications to isolate peptide hormones and then develop antisera to them. Roberts, expressing the sentiment of many researchers, states: "I was trained as an endocrinologist. But it became clear to me that the field of endocrinology needed molecular biology input. The process of grinding out protein purifications is just too slow."

If, as the initial tests with cDNA probes suggest, peptide hormones really are made in the brain in areas other than the hypothalamus, a theory must be developed that explains their function in the brain. Some have suggested that the hormones are all growth regulators, but Rosen's work on rat brains indicates that this cannot be true. A number of other researchers propose that they might be used for intercellular communication in the brain.

Line 21. Which of the following titles best summarizes the passage?

- (A) Is Molecular Biology the Key to Understanding Intercellular Communication in the Brain?
- (B) Molecular Biology: Can Researchers Exploit Its Techniques to Synthesize Peptide Hormones?
- (C) The Advantages and Disadvantages of the Immunological Approach to Detecting Peptide Hormones
- (D) Peptide Hormones: How Scientists Are Attempting to Solve Problems of Their Detection and to Understand Their Function
- (E) Peptide Hormones: The Role Played by Messenger RNA's in Their Detection

22. The passage suggests that a substance detected in the brain by use of antisera to peptide hormones may

- (A) have been stored in the brain for a long period of time
- (B) play no role in the functioning of the brain
- (C) have been produced in some part of the body other than the brain
- (D) have escaped detection by molecular methods
- (E) play an important role in the functioning of the hypothalamus

23. According to the passage, confirmation of the belief that peptide hormones are made in the brain in areas other than the hypothalamus would force scientists to

- (A) reject the theory that peptide hormones are made by endocrine glands
- (B) revise their beliefs about the ability of antisera to detect peptide hormones
- (C) invent techniques that would allow them to locate accurately brain cells that produce peptide hormones
- (D) search for techniques that would enable them to distinguish peptide hormones from their close relatives
- (E) develop a theory that explains the role played by peptide hormones in the brain

GO ON TO THE NEXT PAGE.

24. Which of the following is mentioned in the passage as a drawback of the immunological method of detecting peptide hormones?
- (A) It cannot be used to detect the presence of growth regulators in the brain.
 - (B) It cannot distinguish between the peptide hormones and substances that are very similar to them.
 - (C) It uses antiserums that are unable to cross the blood-brain barrier.
 - (D) It involves a purification process that requires extensive training in endocrinology.
 - (E) It involves injecting foreign substances directly into the bloodstream.
25. The passage implies that, in doing research on rat brains, Rosen discovered that
- (A) peptide hormones are used for intercellular communication
 - (B) complementary DNA's do not bind to cells producing peptide hormones
 - (C) products closely resembling peptide hormones are not identical to peptide hormones
 - (D) some peptide hormones do not function as growth regulators
 - (E) antiserums cross-react with substances that are not peptide hormones
26. Which of the following is a way in which the immunological method of detecting peptide hormones differs from the molecular method?
- (A) The immunological method uses substances that react with products of hormone-producing cells, whereas the molecular method uses substances that react with a specific component of the cells themselves.
 - (B) The immunological method has produced results consistent with long-held beliefs about peptide hormones, whereas the molecular method has produced results that upset these beliefs.
 - (C) The immunological method requires a great deal of expertise, whereas the molecular method has been used successfully by nonspecialists.
 - (D) The immunological method can only be used to test for the presence of peptide hormones within the hypothalamus, whereas the molecular method can be used throughout the brain.
 - (E) The immunological method uses probes that can only bind with peptide hormones, whereas the molecular method uses probes that bind with peptide hormones and substances similar to them.
27. The idea that the field of endocrinology can gain from developments in molecular biology is regarded by Roberts with
- (A) incredulity
 - (B) derision
 - (C) indifference
 - (D) pride
 - (E) enthusiasm

GO ON TO THE NEXT PAGE.

TEST 22

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. There is perhaps some truth in that waggish old definition of a scholar—a siren that calls attention to a fog without doing anything to ----- it.
(A) describe
(B) cause
(C) analyze
(D) dispel
(E) thicken
2. Cryogenic energy storage has the advantage of being suitable in any -----, regardless of geography or geology, factors that may ----- both underground gas storage and pumped hydroelectric storage.
(A) location..limit (B) climate..deter
(C) site..forebode (D) proportion..typify
(E) surface..hamper
3. The newborn human infant is not a passive figure, nor an active one, but what might be called an actively ----- one, eagerly attentive as it is to sights and sounds.
(A) adaptive (B) selective (C) inquisitive
(D) receptive (E) intuitive
4. Opponents of the expansion of the market economy, although in -----, continued to constitute ----- political force throughout the century.
(A) error..an inconsequential
(B) retreat..a powerful
(C) disarray..a disciplined
(D) jeopardy..an ineffective
(E) command..a viable
5. Nature's energy efficiency often ----- human technology: despite the intensity of the light fireflies produce, the amount of heat is negligible; only recently have humans developed chemical light-producing systems whose efficiency ----- the firefly's system.
(A) engenders..manipulates
(B) reflects..simulates
(C) outstrips..rivals
(D) inhibits..matches
(E) determines..reproduces
6. Scholars' sense of the uniqueness of the central concept of "the state" at the time when political science became an academic field quite naturally led to striving for a correspondingly ----- mode of study.
(A) thorough
(B) distinctive
(C) dependable
(D) scientific
(E) dynamic
7. Just as astrology was for centuries ----- faith, countering the strength of established churches, so today believing in astrology is an act of ----- the professional sciences.
(A) an individual..rebellion by
(B) an accepted..antagonism toward
(C) an underground..defiance against
(D) a heretical..support for
(E) an unknown..concern about

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

- Our visual perception depends on the reception of energy reflecting or radiating from that which we wish to perceive. If our eyes could receive and measure infinitely delicate sense-data, we could perceive the world with infinite precision. The natural limits of our eyes have, of course, been extended by mechanical instruments; telescopes and microscopes, for example, expand our capabilities greatly. There is, however, an ultimate limit beyond which no instrument can take us; this limit is imposed by our inability to receive sense-data smaller than those conveyed by an individual quantum of energy. Since these quanta are believed to be indivisible packages of energy and so cannot be further refined, we reach a point beyond which further resolution of the world is not possible. It is like a drawing a child might make by sticking indivisible discs of color onto a canvas.
- We might think that we could avoid this limitation by using quanta with extremely long wavelengths; such quanta would be sufficiently sensitive to convey extremely delicate sense-data. And these quanta would be useful, as long as we only wanted to measure energy, but a completely accurate perception of the world will depend also on the exact measurement of the lengths and positions of what we wish to perceive. For this, quanta of extremely long wavelengths are useless. To measure a length accurately to within a millionth of an inch, we must have a measure graduated in millionths of an inch; a yardstick graduated in inches is useless. Quanta with a wavelength of one inch would be, in a sense, measures that are graduated in inches. Quanta of extremely long wavelength are useless in measuring anything except extremely large dimensions.
- Despite these difficulties, quanta have important theoretical implications for physics. It used to be supposed that, in the observation of nature, the universe could be divided into two distinct parts, a perceiving subject and a perceived object. In physics, subject and object were supposed to be entirely distinct, so that a description of any part of the universe would be independent of the observer. The quantum theory, however, suggests otherwise, for every observation involves the passage of a complete quantum from the object to the subject, and it now appears that this passage constitutes an important coupling between observer and

- observed. We can no longer make a sharp division between the two in an effort to observe nature objectively. Such an attempt at objectivity would distort the crucial interrelationship of observer and observed as parts of a single whole. But, even for scientists, it is only in the world of atoms that this new development makes any appreciable difference in the explanation of observations.
- The primary purpose of the passage is to
- (A) discuss a problem that hinders precise perception of the world
 - (B) point out the inadequacies of accepted units of measurement
 - (C) criticize attempts to distinguish between perceiving subjects and perceived objects
 - (D) compare and contrast rival scientific hypotheses about how the world should be measured and observed
 - (E) suggest the limited function of sensory observation
- According to the passage, quanta with an extremely long wavelength cannot be used to give complete information about the physical world because they
- (A) exist independently of sense-data
 - (B) are graduated only in inches
 - (C) have an insignificant amount of energy
 - (D) cannot, with present-day instruments, be isolated from quanta of shorter wavelength
 - (E) provide an insufficiently precise means of measuring length and position

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19. Which of the following describes a situation most analogous to the situation discussed in lines 9-13?
- (A) A mathematician can only solve problems the solution of which can be deduced from known axioms.
 - (B) An animal can respond to no command that is more complicated syntactically than any it has previously received.
 - (C) A viewer who has not learned, at least intuitively, the conventions of painting, cannot understand perspective in a drawing.
 - (D) A sensitized film will record no detail on a scale that is smaller than the grain of the film.
 - (E) A shadow cast on a screen by an opaque object will have a sharp edge only if the light source is small or very distant.
20. The author uses the analogy of the child's drawing (lines 17-19) primarily in order to
- (A) illustrate the ultimate limitation in the precision of sense-data conveyed by quanta
 - (B) show the sense of helplessness scientists feel in the face of significant observational problems
 - (C) anticipate the objections of those scientists who believe that no instrumental aid to observation is entirely reliable
 - (D) exemplify the similarities between packages of energy and varieties of color
 - (E) disparage those scientists who believe that measurement by means of quanta offers an accurate picture of the world
21. The author implies that making a sharp division between subject and object in physics is
- (A) possible in a measurement of an object's length and position, but not in a measurement of its energy
 - (B) still theoretically possible in the small-scale world of atoms and electrons
 - (C) possible in the case of observations involving the passage of a complete quantum
 - (D) no longer an entirely accurate way to describe observation of the universe
 - (E) a goal at which scientists still aim
22. The author's use of the phrase "in a sense" (line 34) implies which of the following?
- (A) Quanta of extremely long wavelength are essentially graduated in inches.
 - (B) Quanta of one-inch wavelength are not precisely analogous to yardsticks graduated in inches.
 - (C) Quanta of extremely long wavelength, in at least one respect, resemble quanta of shorter wavelength.
 - (D) Quanta of one-inch wavelength and quanta of extremely long wavelength do not differ only in their wavelengths.
 - (E) Quanta of one-inch wavelength must be measured by different standards than quanta of extremely long wavelength.
23. According to the passage, the quantum theory can be distinguished from previous theories of physics by its
- (A) insistence on scrupulously precise mathematical formulations
 - (B) understanding of the inherent interrelationship of perceiver and perceived
 - (C) recognition of the need for sophisticated instruments of measurement
 - (D) emphasis on small-scale rather than on large-scale phenomena
 - (E) regard for philosophical issues as well as for strictly scientific ones

GO ON TO THE NEXT PAGE.

- Tillie Olsen's fiction and essays have been widely and rightly acknowledged as major contributions to American literature. Her work has been particularly valued by contemporary feminists. Yet few of Olsen's readers realize the extent to which her vision and choice of subject are rooted in an earlier literary heritage—the tradition of radical political thought, mostly socialist and anarchist, of the 1910's and 1920's, and the Old Left tradition of the 1930's. I do not mean that one can adequately explain the eloquence of her work in terms of its political origins, or that left-wing politics were the single most important influence on it. My point is that its central consciousness—its profound understanding of class and gender as shaping influences on people's lives—owes much to that earlier literary heritage, a heritage that, in general, has not been sufficiently valued by most contemporary literary critics.
24. The primary purpose of the passage is to
- (A) argue that Olsen's understanding of class and gender is her greatest gift as a writer
 - (B) acknowledge Olsen's importance as the leading spokesperson for a radical literary heritage
 - (C) point out a literary heritage to which Olsen's work is related
 - (D) urge literary critics to investigate the origins of a literary heritage
 - (E) suggest that Olsen's work has been placed in a literary heritage to which it does not belong
25. According to the author, which of the following is true of the heritage mentioned in the passage?
- (A) It emphasizes gender as the determinate influence on people's lives.
 - (B) It has been the most important influence on Olsen's work.
 - (C) It includes political traditions that span three decades of the twentieth century.
 - (D) It explains the eloquence but not the subject matter of Olsen's work.
 - (E) It reflects primarily the development of socialist political thought in the early twentieth century.
26. In the sentence "I do not . . . influence on it" (lines 10-14), the author does which of the following?
- (A) Broadens an existing classification.
 - (B) Contradicts the passage's central thesis.
 - (C) Qualifies a commonly accepted point of view.
 - (D) Presents conflicting explanations for a phenomenon.
 - (E) Denies possible interpretations of an earlier assertion.
27. According to the author, Olsen's work has been
- (A) rightly acknowledged for its contribution to political thought
 - (B) thought to represent the beginning of a new literary tradition
 - (C) a needed impetus for social change
 - (D) most clearly influenced by feminism
 - (E) deservedly admired by readers

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- * 5. During the War of 1812, the United States Congress licensed privateers (armed pirates) who were empowered to plunder enemy ships. Those privateers financed their ventures through the sale of the seized cargo. A Florida man has petitioned Congress to license modern privateers to mount a private “war-for-profit” against seagoing smugglers of illegal drugs.
- Which of the following, if true, is a drawback to the Florida man’s proposal?
- (A) Modern ships are much faster than those of the nineteenth century.
(B) Although the United States Constitution still authorizes the licensing of privateers, no licenses have been issued for over 150 years.
(C) Modern privateers would be unable to finance their operations by selling the seized cargo without being in violation of the law.
(D) The 1812 privateers were plundering ships that belonged to citizens of another country.
(E) Most of the ships used by drug smugglers are modified fishing boats.
6. Dense snow cover can cause unusually harsh weather patterns to persist. If a severe winter storm blankets the Great Plains, the snow cover reflects the sun’s radiation back into space and thus keeps the temperature of the ground low. Consequently, cold air moving down from Canada remains cold enough to cause more snowstorms.
- Which of the following is a conclusion that can be properly drawn from the information above?
- (A) Winter weather on the Great Plains is the product of unusual movements of air masses.
(B) The Great Plains are more likely than other areas to suffer unusually harsh weather patterns.
(C) If the Great Plains get more snow than usual early in the winter and the snow remains until the spring thaw, the winter is likely to be colder than usual.
(D) Even if the temperatures on the Great Plains are not extremely cold but are just below freezing, a moderate snowstorm will probably turn into a blizzard.
(E) The temperature of the ground depends primarily on the thickness of the snow cover.

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Questions 19-21

From exactly seven objects—R, S, T, U, X, Y, and Z—a group of exactly four objects must be selected in accordance with the following conditions:

- If R is selected, T must also be selected.
- If S is selected, U must also be selected.
- If X and Y are both selected together, T cannot be selected.

19. If X and Y are both selected together, which of the following must also be selected?

- (A) R
- (B) S
- (C) T
- (D) U
- (E) Z

20. If S and Z are both selected together, each of the following could also be selected EXCEPT

- (A) R
- (B) T
- (C) U
- (D) X
- (E) Y

21. If U is not selected, which of the following can be, but does not have to be, selected?

- (A) R
- (B) S
- (C) T
- (D) X
- (E) Z

Questions 22-23

No botanist lives long enough to study the complete life cycle of an individual California redwood tree. Nevertheless, by observing many trees at different stages, botanists can piece together the evolution of a single tree. Exactly the same principle applies in astronomy to the study of the life story of globular clusters, huge spherical aggregations of about a million stars all swarming about each other.

22. Which of the following is an assumption made in the passage above?

- (A) The methods of scientists in one field generally carry over to other fields even if the subject matter is vastly different.
- (B) Observations of the life cycle of a single individual have little value in scientific studies.
- (C) Globular clusters at different stages of development are accessible to astronomers for observation and study.
- (D) There are globular clusters that have not so far been detected by astronomers.
- (E) Redwoods and globular clusters must both be studied intensively now, while they still exist in sufficient numbers.

23. Which of the following studies is most similar, in terms of both the problem posed by the time dimension and the method of coping with that problem, to the studies of botanists and astronomers alluded to in the passage above?

- (A) A study of the annual growth cycle of the sugar maple whose method is to analyze many different individual trees in an effort to derive a composite picture
- (B) A study analyzing the progression of lakes from their formation to their end as peat bogs whose method is to examine lakes at many different stages of this progression
- (C) A study charting developments in automotive engineering whose method is to contrast comparable models from many different years
- (D) A study of the impact of computers on industrial society whose method is to monitor the degree of computerization by calculating several significant indices every three years
- (E) A study of an extinct creature's skeletal development whose method is to compare the extant skeletons of individuals that died at different ages

24. Consider three fish swimming together in a school. The space within which each fish can be seen by predator Y is defined by a sphere centered on the fish and having a radius that is the maximum distance Y can see. The school is vulnerable to attack when Y is within one of the three spheres. The spheres overlap to a great extent, since the fish are in a compact group.
- Which of the following is a reliable inference to be drawn from the passage above?
- (A) The vulnerability to attack of the school as a whole is not much greater than the vulnerability to attack of any one fish in the school.
- (B) There is less chance that predator Y will attack a school of four fish than that it will attack a school of three fish.
- (C) Fish who swim in schools are less likely to be devoured by predators than are fish who do not swim in schools.
- (D) The maximum distance at which an individual fish is visible depends less on the size of the fish than on whether the fish is swimming in a school.
- (E) The maximum distance at which predator Y can see its prey is increased if Y is itself swimming in a school of Y's.
25. In respectable periodicals, books are given reviewing space in inverse proportion to the likely size of their sales. Airport and supermarket bookstalls stock only books that are expected to sell in large numbers. Consequently, those who buy books at such bookstalls have to do so without any guidance whatever from the book reviewers whose work is published in respectable periodicals.
- Which of the following is a valid criticism of the argument above?
- (A) Bookstalls like those found at airports and in supermarkets are designed to induce people to buy books on impulse.
- (B) The assortment of books available at airport bookstalls is different from the assortment of books available at supermarket bookstalls.
- (C) The fact that a book is expected to sell well does not guarantee that actual sales will be large.
- (D) Many who later come to be respected as book reviewers start their careers by writing for trashy magazines.
- (E) The conclusion that respectable periodicals never publish reviews of projected best-sellers is unwarranted.

SECTION 4
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Despite the fact that the two council members belonged to different political parties, they _____ the issue of how to finance the town debt.
(A) complicated (B) avoided
(C) attested to (D) reported on
(E) agreed on
2. The breathing spell provided by the _____ arms shipments should give all the combatants a chance to reevaluate their positions.
(A) plethora of
(B) moratorium on
(C) reciprocation of
(D) concentration on
(E) development of
3. The notion that cultural and biological influences _____ determine cross-cultural diversity is discredited by the fact that, in countless aspects of human existence, it is cultural programming that overwhelmingly accounts for cross-population variance.
(A) jointly (B) completely (C) directly
(D) equally (E) eventually
4. Because medieval women's public participation in spiritual life was not welcomed by the male establishment, a compensating _____ religious writings, inoffensive to the members of the establishment because of its _____, became important for many women.
(A) involvement with..privacy
(B) attention to..popularity
(C) familiarity with..scarcity
(D) dissatisfaction with..profundity
(E) resistance to..domesticity
5. This final essay, its prevailing kindliness ----- by occasional flashes of savage irony, bespeaks the ----- character of the author.
(A) illuminated..imperturbable
(B) marred..dichotomous
(C) untainted..vindictive
(D) exemplified..chivalrous
(E) diluted..ruthless
6. Although his attempts to appear psychotic were so _____ as to be almost _____, there is evidence that Ezra Pound was able to avoid standing trial for treason merely by faking symptoms of mental illness.
(A) spontaneous..amusing
(B) contrived..believable
(C) clumsy..ludicrous
(D) stylized..distressing
(E) sporadic..premeditated
7. The _____ questions that consistently structure the study of history must be distinguished from merely _____ questions, which have their day and then pass into oblivion.
(A) recurrent..practical
(B) instinctive..factual
(C) ingrained..discriminating
(D) philosophical..random
(E) perennial..ephemeral

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

- Currently, the paramount problem in the field of biomaterials, the science of replacing diseased tissue with human-made implants, is control over the interface, or surface, between implanted biomaterials and living tissues. The physical properties of most tissues can be matched by careful selection of raw materials: metals, ceramics, or several varieties of polymer materials. Even the requirement that biomaterials processed from these materials be nontoxic to host tissue can be met by techniques derived from studying the reactions of tissue cultures to biomaterials or from short-term implants. But achieving necessary matches in physical properties across interfaces between living and non-living matter requires knowledge of which molecules control the bonding of cells to each other—an area that we have not yet explored thoroughly. Although recent research has allowed us to stabilize the tissue-biomaterial interface by controlling either the chemical reactions or the microstructure of the biomaterials, our fundamental understanding of how implant devices adhere to tissues remains woefully incomplete.
- According to the passage, the major problem currently facing scientists in the field of biomaterials is
- (A) assessing and regulating the bonding between host tissue and implants
 - (B) controlling the transfer of potentially toxic materials across the interface of tissue and implant
 - (C) discovering new materials from which to construct implant devices
 - (D) deciding in what situations implants are needed
 - (E) determining the importance of short-term implants to long-term stability of tissue-implant interfaces
18. The passage suggests which of the following about the recent research mentioned in lines 19-25?
- (A) It has solved one set of problems but has created another.
 - (B) It has concentrated on secondary concerns but has ignored primary concerns.
 - (C) It has improved practical applications of biomaterial technology without providing a complete theoretical explanation of that improvement.
 - (D) It has thoroughly investigated properties of biomaterials but has paid little attention to relevant characteristics of human tissue.
 - (E) It has provided considerable information on short-term implant technology but little on long-term implant technology.
19. The author's primary purpose is to
- (A) answer a theoretical question in the field of biomaterials
 - (B) discuss the current state of technology in the field of biomaterials
 - (C) resolve a research dispute in the field of biomaterials
 - (D) predict an ethical crisis for biomaterials researchers
 - (E) suggest some practical benefits of biomaterial implants

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Islamic law is a particularly instructive example of “sacred law.” Islamic law is a phenomenon so different from all other forms of law—notwithstanding, of course, a considerable and inevitable number of coincidences with one or the other of them as far as subject matter and positive enactments are concerned—that its study is indispensable in order to appreciate adequately the full range of possible legal phenomena. Even the two other representatives of sacred law that are historically and geographically nearest to it, Jewish law and Roman Catholic canon law, are perceptibly different.

Both Jewish law and canon law are more uniform than Islamic law. Though historically there is a discernible break between Jewish law of the sovereign state of ancient Israel and of the Diaspora (the dispersion of Jewish people after the conquest of Israel), the spirit of the legal matter in later parts of the Old Testament is very close to that of the Talmud, one of the primary codifications of Jewish law in the Diaspora. Islam, on the other hand, represented a radical breakaway from the Arab paganism that preceded it; Islamic law is the result of an examination, from a religious angle, of legal subject matter that was far from uniform, comprising as it did the various components of the laws of pre-Islamic Arabia and numerous legal elements taken over from the non-Arab peoples of the conquered territories. All this was unified by being subjected to the same kind of religious scrutiny, the impact of which varied greatly, being almost nonexistent in some fields, and in others originating novel institutions. This central duality of legal subject matter and religious norm is additional to the variety of legal, ethical, and ritual rules that is typical of sacred law.

In its relation to the secular state, Islamic law differed from both Jewish and canon law. Jewish law was buttressed by the cohesion of the community, reinforced by pressure from outside; its rules are the direct expression of this feeling of cohesion, tending toward the accommodation of dissent. Canon and Islamic law, on the contrary, were dominated by the dualism of religion and state, where the state was not, in contrast with Judaism, an alien power but the political expression of the same religion. But the conflict between state and religion took different forms; in Christianity it appeared as the struggle for political power on the part of a tightly organized ecclesiastical hierarchy, and canon law was one of its political weapons. Islamic law, on the other hand, was never supported by an organized institution; consequently, there never developed an overt trial of strength. There merely existed discordance between application of the sacred law and many of the regulations framed by Islamic states; this antagonism varied according to place and time.

20. The author’s purpose in comparing Islamic law to Jewish law and canon law is most probably to
 - (A) contend that traditional legal subject matter does not play a large role in Islamic law
 - (B) support his argument that Islamic law is a unique kind of legal phenomenon
 - (C) emphasize the variety of forms that can all be considered sacred law
 - (D) provide an example of how he believes comparative institutional study should be undertaken
 - (E) argue that geographical and historical proximity does not necessarily lead to parallel institutional development
21. The passage provides information to answer which of the following questions?
 - (A) Does Islamic law depend on sources other than Arab legal principles?
 - (B) What secular practices of Islamic states conflicted with Islamic law?
 - (C) Are Jewish law and canon law the most typical examples of sacred law?
 - (D) Is Jewish law more uniform than canon law?
 - (E) What characterized Arab law of the pre-Islamic era?
22. According to the passage, which of the following statements about sacred law is correct?
 - (A) The various systems of sacred law originated in a limited geographical area.
 - (B) The various systems of sacred law have had marked influence on one another.
 - (C) Systems of sacred law usually rely on a wide variety of precedents.
 - (D) Systems of sacred law generally contain prescriptions governing diverse aspects of human activity.
 - (E) Systems of sacred law function most effectively in communities with relatively small populations.

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23. It can be inferred from the passage that the application of Islamic law in Islamic states has
- systematically been opposed by groups who believe it is contrary to their interests
 - suffered irreparably from the lack of firm institutional backing
 - frequently been at odds with the legal activity of government institutions
 - remained unaffected by the political forces operating alongside it
 - benefited from the fact that it never experienced a direct confrontation with the state
24. Which of the following most accurately describes the organization of the passage?
- A universal principle is advanced and then discussed in relation to a particular historical phenomenon.
 - A methodological innovation is suggested and then examples of its efficacy are provided.
 - A traditional interpretation is questioned and then modified to include new data.
 - A general opinion is expressed and then supportive illustrations are advanced.
 - A controversial viewpoint is presented and then both supportive evidence and contradictory evidence are cited.
25. The passage implies that the relationship of Islamic, Jewish, and canon law is correctly described by which of the following statements?
- Because each constitutes an example of sacred law, they necessarily share some features.
 - They each developed in reaction to the interference of secular political institutions.
 - The differences among them result partly from their differing emphasis on purely ethical rules.
- I only
 - III only
 - I and II only
 - II and III only
 - I, II, and III
26. The passage suggests that canon law differs from Islamic law in that only canon law
- contains prescriptions that nonsacred legal systems might regard as properly legal
 - concerns itself with the duties of a person in regard to the community as a whole
 - was affected by the tension of the conflict between religion and state
 - developed in a political environment that did not challenge its fundamental existence
 - played a role in the direct confrontation between institutions vying for power
27. All of the following statements about the development of Islamic law are implied in the passage EXCEPT:
- Pre-Islamic legal principles were incorporated into Islamic law with widely differing degrees of change.
 - Diverse legal elements were joined together through the application of a purely religious criterion.
 - Although some of the sources of Islamic law were pagan, its integrity as a sacred law was not compromised by their incorporation.
 - There was a fundamental shared characteristic in all pre-Islamic legal matter taken over by Islamic law.
 - Although Islam emerged among the Arabs, Islamic law was influenced by ethnically diverse elements.

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5. Despite the fact that the health-inspection procedures for catering establishments are more stringent than those for ordinary restaurants, more of the cases of food poisoning reported to the city health department were brought on by banquets served by catering services than were brought on by restaurant meals.

Which of the following, if true, helps explain the apparent paradox in the statement above?

- (A) A significantly larger number of people eat in restaurants than attend catered banquets in any given time period.
- (B) Catering establishments know how many people they expect to serve, and therefore are less likely than restaurants to have, and serve, leftover food, a major source of food poisoning.
- (C) Many restaurants provide catering services for banquets in addition to serving individual meals.
- (D) The number of reported food-poisoning cases at catered banquets is unrelated to whether the meal is served on the caterer's or the client's premises.
- (E) People are unlikely to make a connection between a meal they have eaten and a subsequent illness unless the illness strikes a group who are in communication with one another.

6. Dear Editor: Jones's new book has the potential to destroy reputations of persons who have held high governmental responsibility during national crises. However, readers should dismiss Jones's criticisms. Jones's antigovernment attitude is well known, and his criticisms will convince only those like himself, persons who have never had real responsibility and never will, and hence are not qualified to judge.

The argument above includes which of the following questionable techniques?

- (A) It employs the term "responsibility" in more than one sense.
- (B) It assumes that attacking the source of a claim is sufficient to disprove the claim.
- (C) It assumes that the majority of people share Jones's attitude of opposition to government policies.
- (D) It appeals to a person of unreliable authority as a supporter of its position.
- (E) It confuses cause and effect.

7. I. Neither Peter nor Sarah has any common sense.
II. Neither Peter nor Sarah is able to run the factory.

Statement II must be true if both Statement I and which of the following statements are true?

- (A) Neither Peter nor Sarah has any experience in running factories.
- (B) Even a person who lacks common sense would be able to run a factory if he or she had taken courses in factory management.
- (C) To be able to run a factory, a person must have common sense.
- (D) Peter and Sarah, working with someone who has good common sense, would be able to run the factory.
- (E) If Sarah had any common sense, she and Peter would be able to run the factory.

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Questions 19-22

Classroom assignments are being made for 5 teachers—F, G, H, I, and J—and 5 assistants—K, L, M, N, and O. The classrooms are all in a line on one side of a corridor and are numbered consecutively from 1 to 6. One teacher and one assistant will be assigned to each of 5 classrooms, and one classroom will remain unassigned. The assignments must conform to the following conditions:

- F is assigned to the same room as K.
- G is not assigned to the same room as O.
- I is assigned to either Room 2 or Room 3.
- J is assigned to Room 5.
- M is assigned to a room next to F's room.
- The unassigned room is not either one of the end rooms.

19. M CANNOT be assigned to which of the following rooms?

- (A) 1 (B) 2 (C) 3 (D) 5 (E) 6

20. If G is assigned to Room 3, which of the following must be true?

- (A) F is assigned to Room 1.
- (B) I is assigned to Room 2.
- (C) L is assigned to Room 3.
- (D) N is assigned to Room 4.
- (E) O is assigned to Room 5.

21. If Room 2 is the unassigned room, which of the following could be true?

- (A) G is assigned to an end room.
- (B) M is assigned to an end room.
- (C) M is assigned to the same room as H.
- (D) G is assigned to a room next to H's room.
- (E) M is assigned to a room next to I's room.

22. If G is assigned to a room next to H's room, which of the following must be true?

- (A) G is assigned to Room 1.
- (B) L is assigned to Room 2.
- (C) O is assigned to Room 3.
- (D) Room 3 is the unassigned room.
- (E) Room 4 is the unassigned room.

23. If we employ a broad definition of what is urban—that is, one that includes suburbs—about 33,000 square miles of land in the United States were converted from rural to urban uses in the 1960's and 1970's. From 1960 to 1980 the area of urban settlement increased by 84 percent while the urban population increased by 33 percent.

If all of the statements above are true, which of the following must also be true?

- (A) The rate of growth of the population in urban areas in the United States increased between 1960 and 1980.
- (B) By 1980 the fraction of the United States population living in urban settlements built after 1960 exceeded the fraction of the population living in urban settlements built before 1960.
- (C) The density of the urban population in the United States decreased between 1960 and 1980.
- (D) Areas in the United States that were definitely urban before 1960 gained population at the expense of rural and formerly rural areas between 1960 and 1980.
- (E) The population of rural areas decreased between 1960 and 1980.

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24. Praising a historian for factual accuracy in describing events is like praising an architect for using well-seasoned timber or properly mixed concrete in a building.

The author of this statement is arguing that

- (A) nonhistorians can appreciate well-written historical accounts, but they cannot judge the accuracy of a historian's version of events
- (B) history is analogous to architecture in that both disciplines build on foundations laid by other professions
- (C) a good historian must have a thorough knowledge of auxiliary sciences that help establish facts about events
- (D) the credibility of a historian's argument depends on the amount of information the historian has available
- (E) a historian has an obligation to be factually accurate, but accuracy is not the historian's most notable accomplishment

25. Masterpieces of literature are "intertextual"; that is, they tend to be written in response not to reality but to other works of literature. To the extent that a writing is intertextual, it becomes clouded as a mirror of social reality.

The statements above provide the most support for which of the following conclusions?

- (A) To the extent that a writing fails to mirror social reality, the writing is intertextual.
- (B) The author who wishes to write a masterpiece should avoid being influenced by other works of literature.
- (C) A writing that is not intertextual can have no significant relationship to any other writings.
- (D) Literary masterpieces of the past are suspect as sources of information about the social reality of the past.
- (E) A work of literature is not intertextual if it is written in response to a writing that accurately mirrors social reality.

TEST 23

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The natural balance between prey and predator has been increasingly ——, most frequently by human intervention.
(A) celebrated (B) predicted (C) observed
(D) disturbed (E) questioned
2. There is some —— the fact that the author of a book as sensitive and informed as *Indian Artisans* did not develop her interest in Native American art until adulthood, for she grew up in a region rich in American Indian culture.
(A) irony in (B) satisfaction in
(C) doubt about (D) concern about
(E) presumptuousness in
3. Ecology, like economics, concerns itself with the movement of valuable —— through a complex network of producers and consumers.
(A) commodities (B) dividends
(C) communications (D) nutrients
(E) artifacts
4. Observable as a tendency of our culture is a —— of —— psychoanalysis: we no longer feel that it can solve our emotional problems.
(A) divergence..certainty about
(B) confrontation..enigmas in
(C) withdrawal..belief in
(D) defense..weaknesses in
(E) failure..rigor in

5. The struggle of the generations is one of the obvious constants of human affairs; therefore, it may be presumptuous to suggest that the rivalry between young and old in Western society during the current decade is —— critical.
(A) perennially (B) disturbingly
(C) uniquely (D) archetypally
(E) captiously
6. Rhetoric often seems to —— over reason in a heated debate, with both sides —— in hyperbole.
(A) cloud..subsiding
(B) prevail..yielding
(C) triumph..engaging
(D) reverberate..clamoring
(E) trample..tangling
7. Melodramas, which presented stark oppositions between innocence and criminality, virtue and corruption, good and evil, were popular precisely because they offered the audience a world —— of ——.
(A) bereft..theatricality
(B) composed..adversity
(C) full..circumstantiality
(D) deprived..polarity
(E) devoid..neutrality

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

- A mysterious phenomenon is the ability of over-water migrants to travel on course. Birds, bees, and other species can keep track of time without any sensory cues from the outside
- (5) world, and such “biological clocks” clearly contribute to their “compass sense.” For example, they can use the position of the Sun or stars, along with the time of day, to find north. But compass sense alone cannot explain how birds
- (10) navigate the ocean: after a flock traveling east is blown far south by a storm, it will assume the proper northeasterly course to compensate. Perhaps, some scientists thought, migrants determine their geographic position on Earth by celestial navigation, almost as human navigators use stars and planets, but this would demand of the animals a fantastic map sense. Researchers now know that some species have a magnetic sense, which might allow migrants to determine
- (15) (20) their geographic location by detecting variations in the strength of the Earth’s magnetic field.
17. The main idea of the passage is that
- (A) migration over land requires a simpler explanation than migration over water does
 - (B) the means by which animals migrate over water are complex and only partly understood
 - (C) the ability of migrant animals to keep track of time is related to their magnetic sense
 - (D) knowledge of geographic location is essential to migrants with little or no compass sense
 - (E) explanations of how animals migrate tend to replace, rather than build on, one another
18. It can be inferred from the passage that if the flock of birds described in lines 8-12 were navigating by compass sense alone, they would, after the storm, fly
- (A) east (B) north (C) northwest
 - (D) south (E) southeast

19. In maintaining that migrating animals would need “a fantastic map sense” (line 17) to determine their geographic position by celestial navigation, the author intends to express
- (A) admiration for the ability of the migrants
 - (B) skepticism about celestial navigation as an explanation
 - (C) certainty that the phenomenon of migration will remain mysterious
 - (D) interest in a new method of accounting for over-water migration
 - (E) surprise that animals apparently navigate in much the same way that human beings do
20. Of the following descriptions of migrating animals, which most strongly suggests that the animals are depending on magnetic cues to orient themselves?
- (A) Pigeons can properly readjust their course even when flying long distances through exceedingly dense fogs.
 - (B) Bison are able to reach their destination by passing through a landscape that has been partially altered by a recent fire.
 - (C) Elephants are able to find grounds that some members of the herd have never seen before.
 - (D) Swallows are able to return to a given spot at the same time every year.
 - (E) Monarch butterflies coming from different parts of North America are able to arrive at the same location each winter.

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Roger Rosenblatt's book *Black Fiction*, in attempting to apply literary rather than sociopolitical criteria to its subject, successfully alters the approach taken by most previous studies. As Rosenblatt notes, criticism of Black writing has often served as a pretext for expounding on Black history. Addison Gayle's recent work, for example, judges the value of Black fiction by overtly political standards, rating each work according to the notions of Black identity which it propounds.

Although fiction assuredly springs from political circumstances, its authors react to those circumstances in ways other than ideological, and talking about novels and stories primarily as instruments of ideology circumvents much of the fictional enterprise. Rosenblatt's literary analysis discloses affinities and connections among works of Black fiction which solely political studies have overlooked or ignored.

Writing acceptable criticism of Black fiction, however, presupposes giving satisfactory answers to a number of questions. First of all, is there a sufficient reason, other than the racial identity of the authors, to group together works by Black authors? Second, how does Black fiction make itself distinct from other modern fiction with which it is largely contemporaneous? Rosenblatt shows that Black fiction constitutes a distinct body of writing that has an identifiable, coherent literary tradition. Looking at novels written by Blacks over the last eighty years, he discovers recurring concerns and designs independent of chronology. These structures are thematic, and they spring, not surprisingly, from the central fact that the Black characters in these novels exist in a predominantly White culture, whether they try to conform to that culture or rebel against it.

Black Fiction does leave some aesthetic questions open. Rosenblatt's thematic analysis permits considerable objectivity; he even explicitly states that it is not his intention to judge the merit of the various works—yet his reluctance seems misplaced, especially since an attempt to appraise might have led to interesting results. For instance, some of the novels appear to be structurally diffuse. Is this a defect, or are the authors working out of, or trying to forge, a different kind of aesthetic? In addition, the style of some Black novels, like Jean Toomer's *Cane*, verges on expressionism or surrealism; does this technique provide a counterpoint to the prevalent theme that portrays the fate against which Black heroes are pitted, a theme usually conveyed by more naturalistic modes of expression?

In spite of such omissions, what Rosenblatt does include in his discussion makes for an astute and worthwhile study. *Black Fiction* surveys a wide variety of novels, bringing to our attention in the process

some fascinating and little-known works like James Weldon Johnson's *Autobiography of an Ex-Colored Man*. Its argument is tightly constructed, and its forthright, lucid style exemplifies levelheaded and penetrating criticism.

21. The author of the passage objects to criticism of Black fiction like that by Addison Gayle because it
 - (A) emphasizes purely literary aspects of such fiction
 - (B) misinterprets the ideological content of such fiction
 - (C) misunderstands the notions of Black identity contained in such fiction
 - (D) substitutes political for literary criteria in evaluating such fiction
 - (E) ignores the interplay between Black history and Black identity displayed in such fiction
22. The author of the passage is primarily concerned with
 - (A) evaluating the soundness of a work of criticism
 - (B) comparing various critical approaches to a subject
 - (C) discussing the limitations of a particular kind of criticism
 - (D) summarizing the major points made in a work of criticism
 - (E) explaining the theoretical background of a certain kind of criticism

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23. The author of the passage believes that *Black Fiction* would have been improved had Rosenblatt
- (A) evaluated more carefully the ideological and historical aspects of Black fiction
 - (B) attempted to be more objective in his approach to novels and stories by Black authors
 - (C) explored in greater detail the recurrent thematic concerns of Black fiction throughout its history
 - (D) established a basis for placing Black fiction within its own unique literary tradition
 - (E) assessed the relative literary merit of the novels he analyzes thematically
24. The author's discussion of *Black Fiction* can be best described as
- (A) pedantic and contentious
 - (B) critical but admiring
 - (C) ironic and deprecating
 - (D) argumentative but unfocused
 - (E) stilted and insincere
25. It can be inferred that the author of the passage would be LEAST likely to approve of which of the following?
- (A) An analysis of the influence of political events on the personal ideology of Black writers
 - (B) A critical study that applies sociopolitical criteria to autobiographies by Black authors
 - (C) A literary study of Black poetry that appraises the merits of poems according to the political acceptability of their themes
 - (D) An examination of the growth of a distinct Black literary tradition within the context of Black history
 - (E) A literary study that attempts to isolate aesthetic qualities unique to Black fiction
26. The author of the passage uses all of the following in the discussion of Rosenblatt's book EXCEPT
- (A) rhetorical questions
 - (B) specific examples
 - (C) comparison and contrast
 - (D) definition of terms
 - (E) personal opinion
27. The author of the passage refers to James Weldon Johnson's *Autobiography of an Ex-Colored Man* most probably in order to
- (A) point out affinities between Rosenblatt's method of thematic analysis and earlier criticism
 - (B) clarify the point about expressionistic style made earlier in the passage
 - (C) qualify the assessment of Rosenblatt's book made in the first paragraph of the passage
 - (D) illustrate the affinities among Black novels disclosed by Rosenblatt's literary analysis
 - (E) give a specific example of one of the accomplishments of Rosenblatt's work

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6. The world's annual food production slightly exceeds the amount of food required to provide a minimally adequate diet for the world's population. To predict that insufficient food production will cause a hunger crisis in the future is nonsense. Any hunger crisis will result from a distribution problem rather than a production problem.

The statement above assumes which of the following?

- (A) The world's food requirements are greater than they will be in the future.
- (B) A shortfall in the world's food production can be prevented by a better distribution system.
- (C) The world's food production will continue to be sufficient to meet or exceed needs.
- (D) The distribution of the world's existing food supply will be improved in the future.
- (E) The world hunger crisis will not exist in the future.

7. Psychological maladjustment in children is caused by the stress of the birthing process as is proved by the discovery of a positive relationship between the duration of the mother's labor and the amount of time the child spent crying in the first month of life.

Which of the following, if true, LEAST damages the author's assertion?

- (A) There is no relationship between the amount of time spent crying and psychological maladjustment.
- (B) Behavior indicative of psychological maladjustment does not appear until the third month of a child's life.
- (C) From the infant's point of view, a hurried labor is more stressful than a gradual, slow delivery.
- (D) The estimates of the duration of labor were based on obstetricians' estimates of the time of the onset of labor.
- (E) The infants who have experienced the greatest stress during birth are often too weak to cry for extended periods of time.

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Questions 19-22

Eight adjacent offices completely enclose a circular central courtyard. The offices are numbered consecutively, beginning at one of the offices with 1 and proceeding clockwise to 8. Eight junior executives—J, K, L, M, N, O, P, and R—are to occupy the offices, one to an office. The assignment of offices is subject to the following restrictions:

- J is allowed first choice of any of the offices.
K and P must be assigned to adjacent offices.
L and P must be assigned to adjacent offices.
M and O must be assigned to adjacent offices.
M and N cannot be assigned to adjacent offices.
O is assigned to office 2 unless J chooses it; in that case, O will be assigned to office 3.
K is assigned to office 7 unless J chooses it; in that case, K will be assigned to office 5.
19. Which of the following is an assignment of executives to offices, beginning with office 1 and proceeding consecutively to office 8, that conforms to the restrictions above?
- (A) J, O, M, R, L, P, K, N
(B) J, R, O, M, L, P, K, N
(C) M, O, N, K, P, L, R, J
(D) M, O, R, J, L, K, P, N
(E) N, J, O, M, K, P, L, R
20. If J chooses office 8, which of the following must be true?
- (A) L is assigned to office 5.
(B) M is assigned to office 1.
(C) M is assigned to office 3.
(D) N is assigned to office 1.
(E) R is assigned to office 1.
21. P could be assigned to which of the following offices?
- (A) 1 (B) 2 (C) 3 (D) 4 (E) 5
22. If N is assigned to office 5, which of the following can be true?
- (A) L is assigned to office 3.
(B) M is assigned to office 4.
(C) O is assigned to office 3.
(D) P is assigned to office 1.
(E) R is assigned to office 6.

23. Found in caves with the bones of australopithecines, which are thought by some to be ancient ancestors of the human species, were great collections of animal bones. From the frequencies of types of bones, it can be seen that many bones represented only parts of animals that must have died elsewhere. The australopithecines thus must have been mighty hunters, to have brought home so much meat.

Which of the following, if true, most seriously weakens the conclusion drawn above?

- (A) The australopithecines sometimes moved from cave to cave for shelter and did not remain in one cave for a lifetime.
(B) The australopithecine bones found in the caves were those of adult males, adult females, and juveniles.
(C) Evidence of the use of fire was absent from the caves in which the collections of bones were found.
(D) Marks on the bones, including the bones of the australopithecines, are consistent with teeth marks of large catlike animals of the period.
(E) The bones in the cave did not include bones of an elephantlike animal that existed in the area at the time of the australopithecines.

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24. During the Second World War, fighter pilots watched for enemies in the sky by direct visual perception. The pilots had to turn their heads frequently in order to look to their rear, and so calisthenics to develop neck muscles were part of their training. Today, with electronic instruments, pilots never need to look to the rear. Their ability to detect slight changes on electronic dials and gauges is more significant than their keenness of long-distance vision or their developed musculature.

The information above best supports which of the following conclusions?

- (A) The reliance on increasingly sophisticated electronic instruments in air combat situations will soon make human pilots superfluous.
- (B) Visual acuity is of little help in air combat today because of the terrific speeds at which modern aircraft approach each other.
- (C) Fitness with regard to military service must always be defined in terms of the demands combat situations place on combatants.
- (D) The performance of pilots will necessarily decline if the strenuous physical conditioning programs employed in the past are not continued.
- (E) Revisions of military training programs at frequent intervals can guarantee adaptability to the demands of future combat situations.

25. Some United States psychologists have concluded that one specific set of parental behaviors toward children always signifies acceptance and a second set always signifies rejection, for there is remarkable agreement among investigators about the maternal behaviors designated as indicative of these parental attitudes.

The conclusion of the psychologists mentioned above logically depends on the assumption that

- (A) most maternal behaviors have been interpreted as conveying either acceptance or rejection
- (B) the maternal behaviors indicating acceptance or rejection are exhibited by fathers as well
- (C) the behaviors of fathers toward children have been studied as carefully as have the behaviors of mothers
- (D) acceptance and rejection are the easiest to recognize of all parental behaviors
- (E) parental attitudes are best conveyed through behaviors that the parents have consciously agreed on

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. In the current research program, new varieties of apple trees are evaluated under different agricultural _____ for tree size, bloom density, fruit size, _____ to various soils, and resistance to pests and disease.
(A) circumstances..proximity
(B) regulations..conformity
(C) conditions..adaptability
(D) auspices..susceptibility
(E) configurations..propensity
2. At first, I found her gravity rather intimidating; but, as I saw more of her, I found that _____ was very near the surface.
(A) seriousness (B) confidence
(C) laughter (D) poise (E) determination
3. Even though in today's Soviet Union the _____ the Muslim clergy have been accorded power and privileges, the Muslim laity and the rank-and-file clergy still have little _____ to practice their religion.
(A) practitioners among..opportunity
(B) dissidents within..obligation
(C) adversaries of..inclination
(D) leaders of..latitude
(E) traditionalists among..incentive
4. The proponents of recombinant DNA research have decided to _____ federal regulation of their work; they hope that by making this compromise they can forestall proposed state and local controls that might be even stiffer.
(A) protest (B) institute (C) deny
(D) encourage (E) disregard
5. It is to the novelist's credit that all of the episodes in her novel are presented realistically, without any _____ or playful supernatural tricks.
(A) elucidation (B) discrimination
(C) artlessness (D) authenticity
(E) whimsy
6. Our new tools of systems analysis, powerful though they may be, lead to _____ theories, especially, and predictably, in economics and political science, where productive approaches have long been highly _____.
(A) pragmatic..speculative
(B) inelegant..efficacious
(C) explanatory..intuitive
(D) wrongheaded..convergent
(E) simplistic..elusive
7. Nineteenth-century scholars, by examining earlier geometric Greek art, found that classical Greek art was not a magical _____ or a brilliant _____ blending Egyptian and Assyrian art, but was independently evolved by Greeks in Greece.
(A) stratagem..appropriation
(B) exemplar..synthesis
(C) conversion..annexation
(D) paradigm..construct
(E) apparition..amalgam

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The molecules of carbon dioxide in the Earth's atmosphere affect the heat balance of the Earth by acting as a one-way screen. Although these molecules allow radiation at visible wavelengths, where most of the energy of sunlight is concentrated, to pass through, they absorb some of the longer-wavelength, infrared emissions radiated from the Earth's surface, radiation that would otherwise be transmitted back into space. For the Earth to maintain a constant average temperature, such emissions from the planet must balance incoming solar radiation. If there were no carbon dioxide in the atmosphere, heat would escape from the Earth much more easily. The surface temperature would be so much lower that the oceans might be a solid mass of ice.

Today, however, the potential problem is too much carbon dioxide. The burning of fossil fuels and the clearing of forests have increased atmospheric carbon dioxide by about 15 percent in the last hundred years, and we continue to add carbon dioxide to the atmosphere. Could the increase in carbon dioxide cause a global rise in average temperature, and could such a rise have serious consequences for human society? Mathematical models that allow us to calculate the rise in temperature as a function of the increase indicate that the answer is probably yes.

Under present conditions a temperature of -18°C can be observed at an altitude of 5 to 6 kilometers above the Earth. Below this altitude (called the radiating level), the temperature increases by about 6°C per kilometer approaching the Earth's surface, where the average temperature is about 15°C . An increase in the amount of carbon dioxide means that there are more molecules of carbon dioxide to absorb infrared radiation. As the capacity of the atmosphere to absorb infrared radiation increases, the radiating level and the temperature of the surface must rise.

One mathematical model predicts that doubling the atmospheric carbon dioxide would raise the global mean surface temperature by 2.5°C . This model assumes that the atmosphere's relative humidity remains constant and the temperature decreases with altitude at a rate of 6.5°C per kilometer. The assumption of constant relative humidity is important, because water vapor in the atmosphere is another efficient absorber of radiation at infrared wavelengths. Because warm air can hold more moisture than cool air, the relative humidity will be constant only if the

amount of water vapor in the atmosphere increases as the temperature rises. Therefore, more infrared radiation would be absorbed and reradiated back to the Earth's surface. The resultant warming at the surface could be expected to melt snow and ice, reducing the Earth's reflectivity. More solar radiation would then be absorbed, leading to a further increase in temperature.

17. The primary purpose of the passage is to
 - (A) warn of the dangers of continued burning of fossil fuels
 - (B) discuss the significance of increasing the amount of carbon dioxide in the atmosphere
 - (C) explain how a constant temperature is maintained on the Earth's surface
 - (D) describe the ways in which various atmospheric and climatic conditions contribute to the Earth's weather
 - (E) demonstrate the usefulness of mathematical models in predicting long-range climatic change
18. According to the passage, the greatest part of the solar energy that reaches the Earth is
 - (A) concentrated in the infrared spectrum
 - (B) concentrated at visible wavelengths
 - (C) absorbed by carbon dioxide molecules
 - (D) absorbed by atmospheric water vapor
 - (E) reflected back to space by snow and ice

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19. According to the passage, atmospheric carbon dioxide performs all of the following functions EXCEPT
- (A) absorbing radiation at visible wavelengths
(B) absorbing infrared radiation
(C) absorbing outgoing radiation from the Earth
(D) helping to retain heat near the Earth's surface
(E) helping to maintain a constant average temperature on the Earth's surface
20. Which of the following best describes the author's attitude toward the increasing amount of carbon dioxide in the atmosphere and its consequences?
- (A) Incredulous
(B) Completely detached
(C) Interested but skeptical
(D) Angry yet resigned
(E) Objective yet concerned
21. It can be concluded from information contained in the passage that the average temperature at an altitude of 1 kilometer above the Earth is about
- (A) 15°C
(B) 9°C
(C) 2.5°C
(D) -12°C
(E) -18°C
22. It can be inferred from the passage that the construction of the mathematical model mentioned in the passage involved the formulation of which of the following?
- (A) An assumption that the amount of carbon dioxide added to the atmosphere would in reality steadily increase
(B) An assumption that human activities are the only agencies by which carbon dioxide is added to the atmosphere
(C) Assumptions about the social and political consequences of any curtailment of the use of fossil fuels
(D) Assumptions about the physical conditions that are likely to prevail during the period for which the model was made
(E) Assumptions about the differential behavior of carbon dioxide molecules at the various levels of temperature calculated in the model
23. According to the passage, which of the following is true of the last hundred years?
- (A) Fossil fuels were burned for the first time.
(B) Greater amounts of land were cleared than at any time before.
(C) The average temperature at the Earth's surface has become 2°C cooler.
(D) The amount of carbon dioxide in the atmosphere has increased measurably.
(E) The amount of farmland worldwide has doubled.

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Some modern anthropologists hold that biological evolution has shaped not only human morphology but also human behavior. The role those anthropologists ascribe to evolution is not of dictating the details of human behavior but one of imposing constraints—ways of feeling, thinking, and acting that “come naturally” in archetypal situations in any culture. Our “frailties”—emotions and motives such as rage, fear, greed, gluttony, joy, lust, love—may be a very mixed assortment, but they share at least one immediate quality: we are, as we say, “in the grip” of them. And thus they give us our sense of constraints.

Unhappily, some of those frailties—our need for ever-increasing security among them—are presently maladaptive. Yet beneath the overlay of cultural detail, they, too, are said to be biological in direction, and therefore as natural to us as are our appendixes. We would need to comprehend thoroughly their adaptive origins in order to understand how badly they guide us now. And we might then begin to resist their pressure.

24. The primary purpose of the passage is to present
- (A) a position on the foundations of human behavior and on what those foundations imply
 - (B) a theory outlining the parallel development of human morphology and of human behavior
 - (C) a diagnostic test for separating biologically determined behavior patterns from culture-specific detail
 - (D) a practical method for resisting the pressures of biologically determined drives
 - (E) an overview of those human emotions and motives that impose constraints on human behavior
25. The author implies that control to any extent over the “frailties” that constrain our behavior is thought to presuppose
- (A) that those frailties are recognized as currently beneficial and adaptive
 - (B) that there is little or no overlay of cultural detail that masks their true nature
 - (C) that there are cultures in which those frailties do not “come naturally” and from which such control can be learned
 - (D) a full understanding of why those frailties evolved and of how they function now
 - (E) a thorough grasp of the principle that cultural detail in human behavior can differ arbitrarily from society to society

26. Which of the following most probably provides an appropriate analogy from human morphology for the “details” versus “constraints” distinction made in the passage in relation to human behavior?
- (A) The ability of most people to see all the colors of the visible spectrum as against most people’s inability to name any but the primary colors
 - (B) The ability of even the least fortunate people to show compassion as against people’s inability to mask their feelings completely
 - (C) The ability of some people to dive to great depths as against most people’s inability to swim long distances
 - (D) The psychological profile of those people who are able to delay gratification as against people’s inability to control their lives completely
 - (E) The greater lung capacity of mountain peoples that helps them live in oxygen-poor air as against people’s inability to fly without special apparatus
27. It can be inferred that in his discussion of maladaptive frailties the author assumes that
- (A) evolution does not favor the emergence of adaptive characteristics over the emergence of maladaptive ones
 - (B) any structure or behavior not positively adaptive is regarded as transitory in evolutionary theory
 - (C) maladaptive characteristics, once fixed, make the emergence of other maladaptive characteristics more likely
 - (D) the designation of a characteristic as being maladaptive must always remain highly tentative
 - (E) changes in the total human environment can outpace evolutionary change

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4. Some geologists argue that if oil is as common in unsampled areas of the world as it is in those already sampled, our current estimate of reserves that exist underground must be multiplied by a factor of 10,000. From this we can conclude that we can meet the oil needs of the entire world for at least five centuries, even assuming that future consumption grows at an accelerating rate.
- To reach the stated conclusion, the author must assume which of the following?
- (A) It is possible to recover the oil contained in unexplored areas of the world.
(B) The consumption rate for oil will not grow rapidly.
(C) Oil will remain an important energy source for at least 500 years.
(D) The world will achieve and maintain zero population growth.
(E) New technology will make oil discovery and drilling more feasible than ever before.
5. Approximately 5,000 people who have been convicted of nonviolent crimes in the state have been given community-service sentences instead of prison sentences. These offenders perform services commensurate with their training and skills, from scrubbing floors to conducting research for the state. The community-service program, which began in 1979, has grown immensely as a result of drunken-driver legislation enacted a few months ago.

The introduction of the community-service program in 1979 was most probably prompted by which of the following, all of which occurred during the 1970's?

- (A) A decrease in the number of violent crimes in the state
(B) An increase in the number of crimes committed by employees of the state
(C) A gradual decrease in the median age of judges in the state
(D) The overcrowding of prisons in the state
(E) The passage of drunken-driver legislation in other states

6. The nuclear polyhedrosis virus helps control gypsy moth populations by killing the moth's larvae. The virus is always present in the larvae, but only every sixth or seventh year does the virus seriously decimate the numbers of larvae, thereby drastically setting back the gypsy moth population. Scientists believe that the virus, ordinarily latent, is triggered only when the larvae experience biological stress.

If the scientists mentioned above are correct, it can be inferred that the decimation of gypsy moth larvae populations by the nuclear polyhedrosis virus would be most likely to be triggered by which of the following conditions?

- (A) A shift from drought conditions to normal precipitation in areas infested by gypsy moths
(B) The escalating stress of defoliation sustained by trees attacked by gypsy moths for the second consecutive year
(C) Predation on larvae of all kinds by parasitic wasps and flies
(D) Starvation of the gypsy moth larvae as a result of overpopulation
(E) Spraying of areas infested by gypsy moths with laboratory-raised nuclear polyhedrosis virus

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Questions 20-22

U, V, W, X, Y, and Z are chemical compounds. In any mixture of them in which a reaction is possible, some reaction will occur, and likewise among the products of each reaction, until a nonreactive mixture is produced. The following are the only possible reactions:

- One molecule of U instantaneously reacts with one molecule of V to produce one molecule of Y, one of Z, and one of V.
 - One molecule of W instantaneously reacts with one molecule of X to produce one molecule of V.
 - Two molecules of Y instantaneously react with one molecule of W to produce one molecule of Z and one of U.
 - One molecule of X instantaneously reacts with one molecule of U to produce two molecules of W.
 - Four molecules of Z instantaneously react with one molecule of X to produce one molecule of U and one of Y.
 - A molecule of a compound cannot be divided into smaller units of that compound.
20. If two molecules of Y, one of W, and one of V are mixed, which of the following accurately lists each individual molecule present in the resultant nonreactive mixture?
- (A) U, V, Z
 - (B) V, Y, Z
 - (C) U, Y, Z, Z
 - (D) V, Y, Z, Z
 - (E) V, Y, Y, Z, Z

21. If three molecules of W, one molecule of X, and three molecules of Y are mixed, how many molecules will be present in the resulting nonreactive mixture?
- (A) 4 (B) 5 (C) 6 (D) 7 (E) 8
22. In any mixture in which one or more reactions occur, the number of molecules of which compound will always increase or remain constant?
- (A) U (B) V (C) W (D) X (E) Y

23. A research study reports that a particular educational program has improved the prospects for success in later schooling for those children aged three to five who were subjects of the study. It follows, then, that introducing similar programs for all children aged three to five will improve their chances for success in later schooling.

Which of the following, if true, would most weaken the argument above?

- (A) The parents of preschool children in the United States are attracted to educational fads and do not have a clear idea of what sorts of early education programs might benefit their children.
- (B) The cognitive abilities of children are constantly changing between ages three and five.
- (C) The researchers unwittingly included a substantial number of children who had been previously exposed to another educational enrichment program.
- (D) Many parents erroneously presume that early formal instruction takes up time that children could better spend exploring their worlds independently.
- (E) It would require extraordinary public expense to establish such educational enrichment programs on a national basis.

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24. The school bus always stops at the railroad tracks. When the warning light is not flashing, it then proceeds directly across if the tracks are clear. However, when the warning light is not flashing and the tracks are not clear, the school bus waits until they are clear and then proceeds immediately across them.

If the statements above are true and it is true that the school bus stops at the tracks and then does not proceed to cross them, which of the following must also be true?

- (A) The warning light is flashing and the tracks are clear.
- (B) The warning light is flashing and the tracks are not clear.
- (C) The warning light is not flashing and the tracks are not clear.
- (D) The warning light is flashing, or the tracks are not clear, or both.
- (E) The warning light is not flashing, or the tracks are not clear, or both.

25. Konstantin Stanislavski's justly praised method for training actors arose from Stanislavski's own awkwardness and susceptibility to theatrical clichés as a young actor. The "method" must be understood in terms of Stanislavski's personal search for release from the temptations of stock gestures, well-tried vocal intonations, and standard emotional formulas. Despite the pretensions of certain of his disciples in the United States, the Russian director never intended to formulate a textbook of rigid solutions to acting problems.

It can be inferred that the author of the preceding statements about Stanislavski's method holds which of the following opinions about acting?

- (A) Acting is essentially spontaneous emotional expression, with which systematic training usually interferes.
- (B) The Stanislavski method has lost some of its flexibility and exploratory qualities as it has been used by some followers of Stanislavski in the United States.
- (C) The Stanislavski method has misled those actors in the United States who have adopted it.
- (D) Virtually the only advice young actors need be given is that they must systematically suppress theatrical clichés in their performances.
- (E) The Stanislavski method is useful primarily for young actors who must overcome artificiality and immaturity in their performances.

TEST 24

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Clearly refuting sceptics, researchers have ----- not only that gravitational radiation exists but that it also does exactly what theory ----- it should do.
(A) doubted. .warranted
(B) estimated. .accepted
(C) demonstrated. .predicted
(D) assumed. .deduced
(E) supposed. .asserted
2. Sponsors of the bill were ----- because there was no opposition to it within the legislature until after the measure had been signed into law.
(A) unreliable (B) well-intentioned
(C) persistent (D) relieved (E) detained
3. The paradoxical aspect of the myths about Demeter, when we consider the predominant image of her as a tranquil and serene goddess, is her ----- search for her daughter.
(A) extended
(B) agitated
(C) comprehensive
(D) motiveless
(E) heartless
4. Yellow fever, the disease that killed 4,000 Philadelphians in 1793, and so ----- Memphis, Tennessee, that the city lost its charter, has reappeared after nearly two decades in ----- in the Western Hemisphere.
(A) terrorized. .contention
(B) ravaged. .secret
(C) disabled. .quarantine
(D) corrupted. .quiescence
(E) decimated. .abeyance
5. Although -----, almost self-effacing in his private life, he displays in his plays and essays a strong ----- publicity and controversy.
(A) conventional. .interest in
(B) monotonous. .reliance on
(C) shy. .aversion toward
(D) retiring. .penchant for
(E) evasive. .impatience with
6. Comparatively few rock musicians are willing to laugh at themselves, although a hint of ----- can boost sales of video clips very nicely.
(A) self-deprecation
(B) congeniality
(C) cynicism
(D) embarrassment
(E) self-doubt
7. Parts of seventeenth-century Chinese pleasure gardens were not necessarily intended to look -----; they were designed expressly to evoke the agreeable melancholy resulting from a sense of the ----- of natural beauty and human glory.
(A) beautiful. .immutability
(B) cheerful. .transitoriness
(C) colorful. .abstractness
(D) luxuriant. .simplicity
(E) conventional. .wildness

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

A Marxist sociologist has argued that racism stems from the class struggle that is unique to the capitalist system—that racial prejudice is generated by capitalists as a means of controlling workers. His thesis works relatively well when applied to discrimination against Blacks in the United States, but his definition of racial prejudice as “racially-based negative judgments against a group generally accepted as a race in any given region of ethnic competition,” can be interpreted as also including hostility toward such ethnic groups as the Chinese in California and the Jews in medieval Europe. However, since prejudice against these latter peoples was not inspired by capitalists, he has to reason that such antagonisms were not really based on race. He disposes thusly (albeit unconvincingly) of both the intolerance faced by Jews before the rise of capitalism and the early twentieth-century discrimination against Oriental people in California, which, inconveniently, was instigated by workers.

17. The passage supplies information that would answer which of the following questions?
 - (A) What accounts for the prejudice against the Jews in medieval Europe?
 - (B) What conditions caused the discrimination against Oriental people in California in the early twentieth century?
 - (C) Which groups are not in ethnic competition with each other in the United States?
 - (D) What explanation did the Marxist sociologist give for the existence of racial prejudice?
 - (E) What evidence did the Marxist sociologist provide to support his thesis?
18. The author considers the Marxist sociologist’s thesis about the origins of racial prejudice to be
 - (A) unoriginal
 - (B) unpersuasive
 - (C) offensive
 - (D) obscure
 - (E) speculative
19. It can be inferred from the passage that the Marxist sociologist would argue that in a noncapitalist society racial prejudice would be
 - (A) pervasive
 - (B) tolerated
 - (C) ignored
 - (D) forbidden
 - (E) nonexistent
20. According to the passage, the Marxist sociologist’s chain of reasoning required him to assert that prejudice toward Oriental people in California was
 - (A) directed primarily against the Chinese
 - (B) similar in origin to prejudice against the Jews
 - (C) understood by Oriental people as ethnic competition
 - (D) provoked by workers
 - (E) nonracial in character

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By 1950, the results of attempts to relate brain processes to mental experience appeared rather discouraging. Such variations in size, shape, chemistry, conduction speed, excitation threshold, and the

- (5) like as had been demonstrated in nerve cells remained negligible in significance for any possible correlation with the manifold dimensions of mental experience.

Near the turn of the century, it had been sug-

- (10) gested by Hering that different modes of sensation, such as pain, taste, and color, might be correlated with the discharge of specific kinds of nervous energy. However, subsequently developed methods of recording and analyzing nerve potentials failed (15) to reveal any such qualitative diversity. It was possible to demonstrate by other methods refined structural differences among neuron types; however, proof was lacking that the quality of the impulse or its conduction was influenced by these differences, (20) which seemed instead to influence the developmental patterning of the neural circuits. Although qualitative variance among nerve energies was never rigidly disproved, the doctrine was generally abandoned in favor of the opposing view, namely, that (25) nerve impulses are essentially homogeneous in quality and are transmitted as "common currency" throughout the nervous system. According to this theory, it is not the quality of the sensory nerve impulses that determines the diverse conscious sensations they produce, but rather the different areas (30) of the brain into which they discharge, and there is some evidence for this view. In one experiment, when an electric stimulus was applied to a given sensory field of the cerebral cortex of a conscious (35) human subject, it produced a sensation of the appropriate modality for that particular locus, that is, a visual sensation from the visual cortex, an auditory sensation from the auditory cortex, and so on. Other experiments revealed slight variations in (40) the size, number, arrangement, and interconnection of the nerve cells, but as far as psychoneural correlations were concerned, the obvious similarities of these sensory fields to each other seemed much more remarkable than any of the minute differences.

- (45) However, cortical locus, in itself, turned out to have little explanatory value. Studies showed that sensations as diverse as those of red, black, green, and white, or touch, cold, warmth, movement, (50) pain, posture, and pressure apparently may arise through activation of the same cortical areas. What seemed to remain was some kind of differential patterning effects in the brain excitation: it is the difference in the central distribution of impulses that (55) counts. In short, brain theory suggested a correlation between mental experience and the activity of

relatively homogeneous nerve-cell units conducting essentially homogeneous impulses through homogeneous cerebral tissue. To match the multiple dimen-

- (60) sions of mental experience psychologists could only point to a limitless variation in the spatiotemporal patterning of nerve impulses.

21. The author suggests that, by 1950, attempts to correlate mental experience with brain processes would probably have been viewed with
(A) indignation (B) impatience (C) pessimism
(D) indifference (E) defiance
22. The author mentions "common currency" in line 26 primarily in order to emphasize the
(A) lack of differentiation among nerve impulses in human beings
(B) similarity of the sensations that all human beings experience
(C) similarities in the views of scientists who have studied the human nervous system
(D) continuous passage of nerve impulses through the nervous system
(E) recurrent questioning by scientists of an accepted explanation about the nervous system
23. The description in lines 32-38 of an experiment in which electric stimuli were applied to different sensory fields of the cerebral cortex tends to support the theory that
(A) the simple presence of different cortical areas cannot account for the diversity of mental experience
(B) variation in spatiotemporal patterning of nerve impulses correlates with variation in subjective experience
(C) nerve impulses are essentially homogeneous and are relatively unaffected as they travel through the nervous system
(D) the mental experiences produced by sensory nerve impulses are determined by the cortical area activated
(E) variation in neuron types affects the quality of nerve impulses

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24. According to the passage, some evidence exists that the area of the cortex activated by a sensory stimulus determines which of the following?
- I. The nature of the nerve impulse
 - II. The modality of the sensory experience
 - III. Qualitative differences within a modality
- (A) II only (B) III only (C) I and II only
(D) II and III only (E) I, II, and III
25. The passage can most accurately be described as a discussion concerning historical views of the
- (A) anatomy of the brain
(B) manner in which nerve impulses are conducted
(C) significance of different cortical areas in mental experience
(D) mechanics of sense perception
(E) physiological correlates of mental experience
26. Which of the following best summarizes the author's opinion of the suggestion that different areas of the brain determine perceptions produced by sensory nerve impulses?
- (A) It is a plausible explanation, but it has not been completely proved.
(B) It is the best explanation of brain processes currently available.
(C) It is disproved by the fact that the various areas of the brain are physiologically very similar.
(D) There is some evidence to support it, but it fails to explain the diversity of mental experience.
(E) There is experimental evidence that confirms its correctness.
27. It can be inferred from the passage that which of the following exhibit the LEAST qualitative variation?
- (A) Nerve cells
(B) Nerve impulses
(C) Cortical areas
(D) Spatial patterns of nerve impulses
(E) Temporal patterns of nerve impulses

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SECTION 2
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Since it is now ----- to build the complex central processing unit of a computer on a single silicon chip using photolithography and chemical etching, it seems plausible that other miniature structures might be fabricated in ----- ways.
(A) unprecedented..undiscovered
(B) difficult..related
(C) permitted..unique
(D) mandatory..congruent
(E) routine..similar
2. Given the evidence of Egyptian and Babylonian ----- later Greek civilization, it would be incorrect to view the work of Greek scientists as an entirely independent creation.
(A) disdain for
(B) imitation of
(C) ambivalence about
(D) deference to
(E) influence on
3. Laws do not ensure social order since laws can always be -----, which makes them ----- unless the authorities have the will and the power to detect and punish wrongdoing.
(A) contested..provisional
(B) circumvented..antiquated
(C) repealed..vulnerable
(D) violated..ineffective
(E) modified..unstable
4. Since she believed him to be both candid and trustworthy, she refused to consider the possibility that his statement had been -----.
(A) irrelevant (B) facetious (C) mistaken
(D) critical (E) insincere
5. Ironically, the party leaders encountered no greater ----- their efforts to build a progressive party than the ----- of the progressives already elected to the legislature.
(A) support for..advocacy
(B) threat to..promise
(C) benefit from..success
(D) obstacle to..resistance
(E) praise for..reputation
6. It is strange how words shape our thoughts and trap us at the bottom of deeply ----- canyons of thinking, their imprisoning sides carved out by the ----- of past usage.
(A) cleaved..eruptions
(B) rooted..flood
(C) incised..river
(D) ridged..ocean
(E) notched..mountains
7. That his intransigence in making decisions ----- no open disagreement from any quarter was well known; thus, clever subordinates learned the art of ----- their opinions in casual remarks.
(A) elicited..quashing
(B) engendered..recasting
(C) brooked..intimating
(D) embodied..instigating
(E) forbore..emending

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

The transfer of heat and water vapor from the ocean to the air above it depends on a disequilibrium at the interface of the water and the air. Within about a millimeter of the water, air temperature is close to that of the surface water, and the air is nearly saturated with water vapor. But the differences, however small, are crucial, and the disequilibrium is maintained by air near the surface mixing with air higher up, which is typically appreciably cooler and lower in water-vapor content. The air is mixed by means of turbulence that depends on the wind for its energy. As wind speed increases, so does turbulence, and thus the rate of heat and moisture transfer. Detailed understanding of this phenomenon awaits further study. An interacting—and complicating—phenomenon is wind-to-water transfer of momentum that occurs when waves are formed. When the wind makes waves, it transfers important amounts of energy—energy that is therefore not available to provide turbulence.

17. The primary purpose of the passage is to

- (A) resolve a controversy
- (B) describe a phenomenon
- (C) outline a theory
- (D) confirm research findings
- (E) classify various observations

18. According to the passage, wind over the ocean generally does which of the following?

- I. Causes relatively cool, dry air to come into proximity with the ocean surface.
 - II. Maintains a steady rate of heat and moisture transfer between the ocean and the air.
 - III. Causes frequent changes in the temperature of the water at the ocean's surface.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III

19. It can be inferred from the passage that the author regards current knowledge about heat and moisture transfer from the ocean to air as

- (A) revolutionary
- (B) inconsequential
- (C) outdated
- (D) derivative
- (E) incomplete

20. The passage suggests that if on a certain day the wind were to decrease until there was no wind at all, which of the following would occur?

- (A) The air closest to the ocean surface would become saturated with water vapor.
- (B) The air closest to the ocean surface would be warmer than the water.
- (C) The amount of moisture in the air closest to the ocean surface would decrease.
- (D) The rate of heat and moisture transfer would increase.
- (E) The air closest to the ocean would be at the same temperature as air higher up.

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Extraordinary creative activity has been characterized as revolutionary, flying in the face of what is established and producing not what is acceptable but what will become accepted. According to this formulation, highly creative activity transcends the limits of an existing form and establishes a new principle of organization. However, the idea that extraordinary creativity transcends established limits is misleading when it is applied to the arts, even though it may be valid for the sciences. Differences between highly creative art and highly creative science arise in part from a difference in their goals. For the sciences, a new theory is the goal and end result of the creative act. Innovative science produces new propositions in terms of which diverse phenomena can be related to one another in more coherent ways. Such phenomena as a brilliant diamond or a nesting bird are relegated to the role of data, serving as the means for formulating or testing a new theory. The goal of highly creative art is very different: the phenomenon itself becomes the direct product of the creative act. Shakespeare's *Hamlet* is not a tract about the behavior of indecisive princes or the uses of political power; nor is Picasso's painting *Guernica* primarily a propositional statement about the Spanish Civil War or the evils of fascism. What highly creative artistic activity produces is not a new generalization that transcends established limits, but rather an aesthetic particular. Aesthetic particulars produced by the highly creative artist extend or exploit, in an innovative way, the limits of an existing form, rather than transcend that form.

This is not to deny that a highly creative artist sometimes establishes a new principle of organization in the history of an artistic field; the composer Monteverdi, who created music of the highest aesthetic value, comes to mind. More generally, however, whether or not a composition establishes a new principle in the history of music has little bearing on its aesthetic worth. Because they embody a new principle of organization, some musical works, such as the operas of the Florentine Camerata, are of signal historical importance, but few listeners or musicologists would include these among the great works of music. On the other hand, Mozart's *The Marriage of Figaro* is surely among the masterpieces of music even though its modest innovations are confined to extending existing means. It has been said of Beethoven that he toppled the rules and freed music from the stifling confines of convention. But a close study of his compositions reveals that Beethoven overturned no fundamental rules. Rather, he was an incomparable strategist who exploited limits—the rules, forms, and conventions that he inherited from predecessors such as Haydn and Mozart, Handel and Bach—in strikingly original ways.

21. The author considers a new theory that coherently relates diverse phenomena to one another to be the
 - (A) basis for reaffirming a well-established scientific formulation
 - (B) byproduct of an aesthetic experience
 - (C) tool used by a scientist to discover a new particular
 - (D) synthesis underlying a great work of art
 - (E) result of highly creative scientific activity
22. The author implies that Beethoven's music was strikingly original because Beethoven
 - (A) strove to outdo his predecessors by becoming the first composer to exploit limits
 - (B) fundamentally changed the musical forms of his predecessors by adopting a richly inventive strategy
 - (C) embellished and interwove the melodies of several of the great composers who preceded him
 - (D) manipulated the established conventions of musical composition in a highly innovative fashion
 - (E) attempted to create the illusion of having transcended the musical forms of his predecessors
23. The passage states that the operas of the Florentine Camerata are
 - (A) unjustifiably ignored by musicologists
 - (B) not generally considered to be of high aesthetic value even though they are important in the history of music
 - (C) among those works in which popular historical themes were portrayed in a musical production
 - (D) often inappropriately cited as examples of musical works in which a new principle of organization was introduced
 - (E) minor exceptions to the well-established generalization that the aesthetic worth of a composition determines its importance in the history of music

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24. The passage supplies information for answering all of the following questions EXCEPT:
- (A) Has unusual creative activity been characterized as revolutionary?
(B) Did Beethoven work within a musical tradition that also included Handel and Bach?
(C) Is Mozart's *The Marriage of Figaro* an example of a creative work that transcended limits?
(D) Who besides Monteverdi wrote music that the author would consider to embody new principles of organization and to be of high aesthetic value?
(E) Does anyone claim that the goal of extraordinary creative activity in the arts differs from that of extraordinary creative activity in the sciences?
25. The author regards the idea that all highly creative artistic activity transcends limits with
- (A) deep skepticism
(B) strong indignation
(C) marked indifference
(D) moderate amusement
(E) sharp derision
26. The author implies that an innovative scientific contribution is one that
- (A) is cited with high frequency in the publications of other scientists
(B) is accepted immediately by the scientific community
(C) does not relegate particulars to the role of data
(D) presents the discovery of a new scientific fact
(E) introduces a new valid generalization
27. Which of the following statements would most logically conclude the last paragraph of the passage?
- (A) Unlike Beethoven, however, even the greatest of modern composers, such as Stravinsky, did not transcend existing musical forms.
(B) In similar fashion, existing musical forms were even further exploited by the next generation of great European composers.
(C) Thus, many of the great composers displayed the same combination of talents exhibited by Monteverdi.
(D) By contrast, the view that creativity in the arts exploits but does not transcend limits is supported in the field of literature.
(E) Actually, Beethoven's most original works were largely unappreciated at the time that they were first performed.

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4. During the month of July in City X, the humidity was always 80 percent or higher whenever the temperature was 75° F or higher. Temperatures that month ranged from 65° to 95° F.

If the statements in the passage above are true, which of the following CANNOT be an accurate report of a temperature and humidity reading for City X in July?

- (A) 77° F, 81%
- (B) 76° F, 80%
- (C) 75° F, 79%
- (D) 74° F, 78%
- (E) 73° F, 77%

5. Anyone who has owned a car knows that saving money in the short run by skimping on relatively minor repairs and routine maintenance will prove very costly in the long run. However, this basic truth is often forgotten by those who call for reduced government spending on social programs.

Which of the following is NOT implied by the analogy above as a point of comparison?

- (A) Money that is spent on repairs and maintenance helps to ensure the continued functioning of a car.
- (B) Owners can take chances on not maintaining or repairing their cars.
- (C) In order to keep operating, cars will normally need some work.
- (D) The problems with a car will become worse if they are not attended to.
- (E) A car will last for only a limited period of time and then must be replaced.

6. If athletes want better performances, they should train at high altitudes. At higher altitudes, the body has more red blood cells per unit volume of blood than at sea level. The red blood cells transport oxygen, which will improve performance if available in greater amounts. The blood of an athlete who trains at high altitudes will transport more oxygen per unit volume of blood, improving the athlete's performance.

Which of the following, if true, would be most damaging to the argument above, provided that the athlete's heart rate is the same at high and low altitudes?

- (A) Scientists have found that an athlete's heart requires a period of time to adjust to working at high altitudes.
- (B) Scientists have found that the body's total volume of blood declines by as much as 25 percent at high altitudes.
- (C) Middle-distance runners who train at high altitudes sometimes lose races to middle-distance runners who train at sea level.
- (D) The performances of athletes in competitions at all altitudes have improved markedly during the past twenty years.
- (E) At altitudes above 5,500 feet, middle-distance runners often better their sea-level running times by several seconds.

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23. M is heavier than Q, but it is lighter than R. S is heavier than Q and it is also heavier than R. U is heavier than Q and it is also heavier than R.
- If the statements above are true, one can conclude with certainty that T is heavier than M if one knows in addition that
- (A) S weighs the same as U weighs
(B) S is heavier than T
(C) T is heavier than Q
(D) T is heavier than U
(E) U is heavier than M
24. The cost of the average computer logic device is falling at the rate of 25 percent per year, and the cost of the average computer memory device at the rate of 40 percent per year. It can be concluded that if these rates of cost decline remain constant for a period of three years, at the end of that time the cost of the average computer memory device will have declined by a greater amount than the cost of the average computer logic device.
- Accurate information about which of the following would be most useful in evaluating the correctness of the conclusion above?
- (A) The number of logic devices and memory devices projected to be purchased during the next three years
(B) The actual prices charged for the average computer logic device and the average computer memory device
(C) The compatibility of different manufacturers' logic devices and memory devices
(D) The relative durability of logic devices and memory devices
(E) The average number of logic devices and memory devices needed for an average computer system
25. Earthquakes, volcanic eruptions, and unusual weather have caused many more natural disasters adversely affecting people in the past decade than in previous decades. We can conclude that the planet Earth as a natural environment has become more inhospitable and dangerous, and we should employ the weather and earth sciences to look for causes of this trend.
- The conclusion drawn above is most seriously weakened if which of the following is true?
- (A) The weather and earth sciences have provided better early warning systems for natural disasters in the past decade than in previous decades.
(B) International relief efforts for victims of natural disasters have been better organized in the past decade than in previous decades.
(C) There are records of major earthquakes, volcanic eruptions, droughts, landslides, and floods occurring in the distant past, as well as in the recent past.
(D) Population pressures and poverty have forced increasing numbers of people to live in areas prone to natural disasters.
(E) There have been no changes in the past decade in people's land-use practices that could have affected the climate.

6. At the end of the Second World War the number of women in their childbearing years was at a record low. Yet for almost twenty years they produced a record high number of children. In 1957 there was an average of 3.72 children per family. Now the postwar babies are producing a record low number of babies. In 1983 the average number of children per family was about 1.79—two children fewer than the 1957 rate and lower even than the 2.11 rate that a population needs to replace itself.
- It can properly be inferred from the passage that
- (A) for the birth rate to be high, there must be a relatively large number of women in their childbearing years
 - (B) the most significant factor influencing the birth rate is whether the country is engaged in a war
 - (C) unless there are extraordinary circumstances, the birth rate will not dip below the level at which a population replaces itself
 - (D) for the birth rate to be low, there must be a relatively small number of women in their childbearing years
 - (E) the birth rate is not directly proportional to the number of women in their childbearing years
7. A study of illusionistic painting inevitably begins with the Greek painter Zeuxis. In an early work, which is the basis for his fame, he painted a bowl of grapes that was so lifelike that birds pecked at the fruit. In an attempt to expand his achievement to encompass human figures, he painted a boy carrying a bunch of grapes. When birds immediately came to peck at the fruit, Zeuxis judged that he had failed. Zeuxis' judgment that he had failed in his later work was based on an assumption. Which of the following can have served as that assumption?
- (A) People are more easily fooled by illusionistic techniques than are birds.
 - (B) The use of illusionistic techniques in painting had become commonplace by the time Zeuxis completed his later work.
 - (C) The grapes in the later painting were even more realistic than the ones in the earlier work.
 - (D) Birds are less likely to peck at fruit when they see that a human being is present.
 - (E) After the success of his early work, Zeuxis was unable to live up to the expectations of the general public.
- * 8. The best argument for the tenure system that protects professional employment in universities is that it allows veteran faculty to hire people smarter than they are and yet remain secure in the knowledge that unless they themselves are caught in an act of moral turpitude—a concept that in the present climate almost defies definition—the younger faculty cannot turn around and fire them. This is not true in industry.
- Which of the following assumptions is most likely to have been made by the author of the argument above?
- (A) Industry should follow the example of universities and protect the jobs of managers by instituting a tenure system.
 - (B) If no tenure system existed, veteran faculty would be reluctant to hire new faculty who might threaten the veteran faculty's own jobs.
 - (C) The traditional argument that the tenure system protects scholars in universities from being dismissed for holding unconventional or unpopular beliefs is no longer persuasive.
 - (D) If a stronger consensus concerning what constitutes moral turpitude existed, the tenure system in universities would be expendable.
 - (E) Veteran faculty will usually hire and promote new faculty whose scholarship is more up-to-date than their own.

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Questions 20-22

An instructor regularly offers a six-week survey course on film genres. Each time the course is given, she covers six of the following eight genres: adventure films, *cinéma noir*, detective films, fantasy films, horror films, musical comedies, silent films, and westerns. She will discuss exactly one genre per week according to the following conditions:

Silent films are always covered, and always in the first week.

Westerns and adventure films are always covered, with westerns covered in the week immediately preceding the week adventure films are covered.

Musical comedies are never covered in the same course in which fantasy films are covered.

If detective films are covered, they are covered after westerns are covered, with exactly one of the other genres covered between them.

Cinéma noir is not covered unless detective films are covered in one of the previous weeks.

20. Which of the following is an acceptable schedule of genres for weeks one through six of the course?

- (A) Silent films, westerns, adventure films, detective films, horror films, musical comedies
- (B) Silent films, westerns, adventure films, horror films, detective films, fantasy films
- (C) Fantasy films, musical comedies, detective films, *cinéma noir*, westerns, adventure films
- (D) Westerns, adventure films, detective films, *cinéma noir*, musical comedies, horror films
- (E) Detective films, westerns, adventure films, horror films, fantasy films, *cinéma noir*

21. If musical comedies are covered the week immediately preceding the week westerns are covered, which of the following can be true?

- (A) Adventure films are covered the second week.
- (B) *Cinéma noir* is covered the fourth week.
- (C) Detective films are covered the third week.
- (D) Fantasy films are covered the fifth week.
- (E) Horror films are covered the sixth week.

22. Which of the following will NEVER be covered in the sixth week of the course?

- (A) *Cinéma noir*
- (B) Fantasy films
- (C) Horror films
- (D) Musical comedies
- (E) Westerns

23. The population of elephant seals, reduced by hunting to perhaps a few dozen animals early in this century, has soared under federal protection during the last few decades. However, because the species repopulated itself through extensive inbreeding, it now exhibits a genetic uniformity that is almost unparalleled in other species of mammals, and thus it is in far greater danger of becoming extinct than are most other species.

Given the information in the passage above, which of the following is most likely the reason that other species of mammals are less likely than elephant seals to become extinct?

- (A) Other species of mammals have large populations, so the loss of a few members of the species is not significant.
- (B) Other species of mammals have increased their knowledge of dangers through the experience of generation after generation of animals.
- (C) In other species of mammals, hunters can readily distinguish between males and females or between young animals and adults.
- (D) In other species of mammals, some members of the species are genetically better equipped to withstand a disease or event that destroys other members of the species.
- (E) Other species of mammals have retained habits of caution and alertness because they have not been protected as endangered species.

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24. Some people assert that prosecutors should be allowed to introduce illegally obtained evidence in criminal trials if the judge and jury can be persuaded that the arresting officer was not aware of violating or did not intend to violate the law while seizing the evidence. This proposed “good-faith exception” would weaken everyone’s constitutional protection, lead to less careful police practices, and promote lying by law enforcement officers in court.

The argument above for maintaining the prohibition against illegally obtained evidence assumes that

- (A) defendants in criminal cases should enjoy greater protection from the law than other citizens do
- (B) law enforcement authorities need to be encouraged to pursue criminals assiduously
- (C) the legal system will usually find ways to ensure that real crimes do not go unprosecuted
- (D) the prohibition now deters some unlawful searches and seizures
- (E) courts should consider the motives of law enforcement officers in deciding whether evidence brought forward by the officers is admissible in a trial

25. If it is true that the streets and the sidewalks are wet whenever it is raining, which of the following must also be true?

- I. If the streets and sidewalks are wet, it is raining.
 - II. If the streets are wet but the sidewalks are not wet, it is not raining.
 - III. If it is not raining, the streets and sidewalks are not wet.
- (A) I only
 - (B) II only
 - (C) III only
 - (D) I and II only
 - (E) II and III only

SECTION 2

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Hydrogen is the ----- element of the universe in that it provides the building blocks from which the other elements are produced.
(A) steadiest (B) expendable (C) lightest
(D) final (E) fundamental
2. Few of us take the pains to study our cherished convictions; indeed, we almost have a natural ----- doing so.
(A) aptitude for (B) repugnance to
(C) interest in (D) ignorance of
(E) reaction after
3. It is his dubious distinction to have proved what nobody would think of denying, that Romero at the age of sixty-four writes with all the characteristics of -----
(A) maturity (B) fiction
(C) inventiveness (D) art
(E) brilliance
4. The primary criterion for ----- a school is its recent performance: critics are ----- to extend credit for earlier victories.
(A) evaluating..prone
(B) investigating..hesitant
(C) judging..reluctant
(D) improving..eager
(E) administering..persuaded
5. Number theory is rich in problems of an especially ----- sort: they are tantalizingly simple to state but ----- difficult to solve.
(A) cryptic..deceptively
(B) spurious..equally
(C) abstruse..ostensibly
(D) elegant..rarely
(E) vexing..notoriously
6. In failing to see that the justice's pronouncement merely ----- previous decisions rather than actually establishing a precedent, the novice law clerk ----- the scope of the justice's judgment.
(A) synthesized..limited
(B) overturned..misunderstood
(C) endorsed..nullified
(D) qualified..overemphasized
(E) recapitulated..defined
7. When theories formerly considered to be ----- in their scientific objectivity are found instead to reflect a consistent observational and evaluative bias, then the presumed neutrality of science gives way to the recognition that categories of knowledge are human -----.
(A) disinterested..constructions
(B) callous..errors
(C) verifiable..prejudices
(D) convincing..imperatives
(E) unassailable..fantasies

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

* By the time the American colonists took up arms against Great Britain in order to secure their independence, the institution of Black slavery was deeply entrenched. But the contradiction inherent in this situation was, for many, a source of constant embarrassment. "It always appeared a most iniquitous scheme to me," Abigail Adams wrote her husband in 1774, "to fight ourselves for what we are daily robbing and plundering from those who have as good a right to freedom as we have."

Many Americans besides Abigail Adams were struck by the inconsistency of their stand during the War of Independence, and they were not averse to making moves to emancipate the slaves. Quakers and other religious groups organized antislavery societies, while numerous individuals manumitted their slaves. In fact, within several years of the end of the War of Independence, most of the Eastern states had made provisions for the gradual emancipation of slaves.

- * 17. Which of the following best states the central idea of the passage?
- (A) The War of Independence produced among many Black Americans a heightened consciousness of the inequities in American society.
 - (B) The War of Independence strengthened the bonds of slavery of many Black Americans while intensifying their desire to be free.
 - (C) The War of Independence exposed to many Americans the contradiction of slavery in a country seeking its freedom and resulted in efforts to resolve that contradiction.
 - (D) The War of Independence provoked strong criticisms by many Americans of the institution of slavery, but produced little substantive action against it.
 - (E) The War of Independence renewed the efforts of many American groups toward achieving Black emancipation.
18. The passage contains information that would support which of the following statements about the colonies before the War of Independence?
- (A) They contained organized antislavery societies.
 - (B) They allowed individuals to own slaves.
 - (C) They prohibited religious groups from political action.
 - (D) They were inconsistent in their legal definitions of slave status.
 - (E) They encouraged abolitionist societies to expand their influence.

* 19. According to the passage, the War of Independence was embarrassing to some Americans for which of the following reasons?

- I. It involved a struggle for many of the same liberties that Americans were denying to others.
 - II. It involved a struggle for independence from the very nation that had founded the colonies.
 - III. It involved a struggle based on inconsistencies in the participants' conceptions of freedom.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) I and III only
 - (E) I, II, and III

* 20. Which of the following statements regarding American society in the years immediately following the War of Independence is best supported by the passage?

- (A) The unexpected successes of the anti-slavery societies led to their gradual demise in the Eastern states.
- (B) Some of the newly independent American states had begun to make progress toward abolishing slavery.
- (C) Americans like Abigail Adams became disillusioned with the slow progress of emancipation and gradually abandoned the cause.
- (D) Emancipated slaves gradually were accepted in the Eastern states as equal members of American society.
- (E) The abolition of slavery in many Eastern states was the result of close cooperation between religious groups and free Blacks.

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The evolution of sex ratios has produced, in most plants and animals with separate sexes, approximately equal numbers of males and females. Why should this be so? Two main kinds of answers have been offered. One is couched in terms of advantage to population. It is argued that the sex ratio will evolve so as to maximize the number of meetings between individuals of the opposite sex. This is essentially a "group selection" argument. The other, and in my view correct, type of answer was first put forward by Fisher in 1930. This "genetic" argument starts from the assumption that genes can influence the relative numbers of male and female offspring produced by an individual carrying the genes. That sex ratio will be favored which maximizes the number of descendants an individual will have and hence the number of gene copies transmitted. Suppose that the population consisted mostly of females: then an individual who produced sons only would have more grandchildren. In contrast, if the population consisted mostly of males, it would pay to have daughters. If, however, the population consisted of equal numbers of males and females, sons and daughters would be equally valuable. Thus a one-to-one sex ratio is the only stable ratio; it is an "evolutionarily stable strategy." Although Fisher wrote before the mathematical theory of games had been developed, his theory incorporates the essential feature of a game—that the best strategy to adopt depends on what others are doing.

Since Fisher's time, it has been realized that genes can sometimes influence the chromosome or gamete in which they find themselves so that the gamete will be more likely to participate in fertilization. If such a gene occurs on a sex-determining (X or Y) chromosome, then highly aberrant sex ratios can occur. But more immediately relevant to game theory are the sex ratios in certain parasitic wasp species that have a large excess of females. In these species, fertilized eggs develop into females and unfertilized eggs into males. A female stores sperm and can determine the sex of each egg she lays by fertilizing it or leaving it unfertilized. By Fisher's argument, it should still pay a female to produce equal numbers of sons and daughters. Hamilton, noting that the eggs develop within their host—the larva of another insect—and that the newly emerged adult wasps mate immediately and disperse, offered a remarkably cogent analysis. Since only one female usually lays eggs in a given larva, it would pay her to produce one male only, because this one male could fertilize all his sisters on emergence. Like Fisher, Hamilton looked for an evolutionarily stable strategy, but he went a step further in recognizing that he was looking for a strategy.

21. The author suggests that the work of Fisher and Hamilton was similar in that both scientists
 - (A) conducted their research at approximately the same time
 - (B) sought to manipulate the sex ratios of some of the animals they studied
 - (C) sought an explanation of why certain sex ratios exist and remain stable
 - (D) studied game theory, thereby providing important groundwork for the later development of strategy theory
 - (E) studied reproduction in the same animal species

22. It can be inferred from the passage that the author considers Fisher's work to be
 - (A) fallacious and unprofessional
 - (B) definitive and thorough
 - (C) inaccurate but popular, compared with Hamilton's work
 - (D) admirable, but not as up-to-date as Hamilton's work
 - (E) accurate, but trivial compared with Hamilton's work

23. The passage contains information that would answer which of the following questions about wasps?
 - I. How many eggs does the female wasp usually lay in a single host larva?
 - II. Can some species of wasp determine sex ratios among their offspring?
 - III. What is the approximate sex ratio among the offspring of parasitic wasps?
 - (A) I only
 - (B) II only
 - (C) III only
 - (D) I and II only
 - (E) II and III only

24. It can be inferred that the author discusses the genetic theory in greater detail than the group selection theory primarily because he believes that the genetic theory is more
 - (A) complicated
 - (B) accurate
 - (C) popular
 - (D) comprehensive
 - (E) accessible

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25. According to the passage, successful game strategy depends on
- (A) the ability to adjust one's behavior in light of the behavior of others
 - (B) one's awareness that there is safety in numbers
 - (C) the degree of stability one can create in one's immediate environment
 - (D) the accuracy with which one can predict future events
 - (E) the success one achieves in conserving and storing one's resources
26. It can be inferred from the passage that the mathematical theory of games has been
- (A) developed by scientists with an interest in genetics
 - (B) adopted by Hamilton in his research
 - (C) helpful in explaining how genes can sometimes influence gametes
 - (D) based on animal studies conducted prior to 1930
 - (E) useful in explaining some biological phenomena
27. Which of the following is NOT true of the species of parasitic wasps discussed in the passage?
- (A) Adult female wasps are capable of storing sperm.
 - (B) Female wasps lay their eggs in the larvae of other insects.
 - (C) The adult female wasp can be fertilized by a male that was hatched in the same larva as herself.
 - (D) So few male wasps are produced that extinction is almost certain.
 - (E) Male wasps do not emerge from their hosts until they reach sexual maturity.

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Questions 8-9

"On the whole," Ms. Dennis remarked, "engineering students are lazier now than they used to be. I know because fewer and fewer of my students regularly do the work they are assigned."

8. The conclusion drawn above depends on which of the following assumptions?
 - (A) Engineering students are working less because, in a booming market, they are spending more and more time investigating different job opportunities.
 - (B) Whether or not students do the work they are assigned is a good indication of how lazy they are.
 - (C) Engineering students should work harder than students in less demanding fields.
 - (D) Ms. Dennis' students are doing less work because Ms. Dennis is not as effective a teacher as she once was.
 - (E) Laziness is something most people do not outgrow.
9. Which of the following identifies a flaw in Ms. Dennis' reasoning?
 - (A) Plenty of people besides engineering students do not work as hard as they should.
 - (B) Ms. Dennis does not consider the excuses her students may have for being lazy.
 - (C) The argument does not propose any constructive solutions to the problem it identifies.
 - (D) The argument assumes that Ms. Dennis' students are representative of engineering students in general.
 - (E) Ms. Dennis does not seem sympathetic to the problems of her students.

10. Popular culture in the United States has become Europeanized to an extent unimaginable twenty-five years ago. Not many people then drank wine with meals, and no one drank imported mineral water. No idea would have been more astonishing than that Americans would pay to watch soccer games. Such thoughts arise because of a report that the American Association of State Highway and Transportation Officials has just adopted a proposal to develop the country's first comprehensive interstate system of routes for bicycles.

Which of the following inferences is best supported by the passage?

- (A) Long-distance bicycle routes are used in Europe.
- (B) Drinking imported mineral water is a greater luxury than drinking imported wine.
- (C) United States culture has benefited from exposure to foreign ideas.
- (D) Most Europeans make regular use of bicycles.
- (E) The influence of the United States on European culture has assumed unprecedented proportions in the last twenty-five years.

GO ON TO THE NEXT PAGE.

23. In the 1980 United States census, marital status was described under one of five categories: single, now married (but not separated), separated, divorced, widowed. In the category "separated," including both those who were legally separated and those who were estranged and living apart from their spouses, one million more women than men were counted.
- Which of the following, if true, provide(s) or contribute(s) to an explanation for this result?
- I. There are more women of marriageable age than men of marriageable age in the United States.
 - II. More of the separated men than separated women in the United States could not be found by the census takers during the census.
 - III. Many more separated men than separated women left the United States for residence in another country.
- (A) I only
(B) II only.
(C) III only
(D) I and II only
(E) II and III only
24. In recent years shrimp harvests of commercial fishermen in the South Atlantic have declined dramatically in total weight. The decline is due primarily to competition from a growing number of recreational fishermen, who are able to net young shrimp in the estuaries where they mature.
- Which of the following regulatory actions would be most likely to help increase the shrimp harvests of commercial fishermen?
- (A) Requiring commercial fishermen to fish in estuaries
(B) Limiting the total number of excursions per season for commercial fishermen
(C) Requiring recreational fishermen to use large-mesh nets in their fishing
(D) Putting an upper limit on the size of the shrimp recreational fishermen are allowed to catch
(E) Allowing recreational fishermen to move out of estuaries into the South Atlantic
25. The 38 corporations that filed United States income tax returns showing a net income of more than \$100 million accounted for 53 percent of the total taxable income from foreign sources reported on all tax returns. Sixty percent of the total taxable income from foreign sources came from the 200 returns reporting income from 10 or more countries.
- If the statements above are true, which of the following must also be true?
- (A) Most of the total taxable income earned by corporations with net income above \$100 million was earned from foreign sources.
(B) Wealthy individuals with large personal incomes reported 47 percent of the total taxable income from foreign sources.
(C) Income from foreign sources amounted to between 53 and 60 percent of all reported taxable income.
(D) Some of the corporations with net income above \$100 million reported income from 10 or more countries.
(E) Most of the tax returns showing income from 10 or more countries reported net income of more than \$100 million.

SECTION 5
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Although the minuet appeared simple, its _____ steps had to be studied very carefully before they could be gracefully _____ in public.
(A) progressive..revealed
(B) intricate..executed
(C) rudimentary..allowed
(D) minute..discussed
(E) entertaining..stylized
2. The results of the experiments performed by Elizabeth Hazen and Rachel Brown were _____ not only because these results challenged old assumptions but also because they called the _____ methodology into question.
(A) provocative..prevailing
(B) predictable..contemporary
(C) inconclusive..traditional
(D) intriguing..projected
(E) specious..original
3. Despite the _____ of many of their colleagues, some scholars have begun to emphasize "pop culture" as a key for _____ the myths, hopes, and fears of contemporary society.
(A) antipathy..entangling
(B) discernment..evaluating
(C) pedantry..reinstating
(D) skepticism..deciphering
(E) enthusiasm..symbolizing
4. In the seventeenth century, direct flouting of a generally accepted system of values was regarded as _____, even as a sign of madness.
(A) adventurous (B) frivolous
(C) willful (D) impermissible
(E) irrational
5. Queen Elizabeth I has quite correctly been called a _____ of the arts, because many young artists received her patronage.
(A) connoisseur (B) critic (C) friend
(D) scourge (E) judge
6. Because outlaws were denied _____ under medieval law, anyone could raise a hand against them with legal _____.
(A) propriety..authority
(B) protection..impunity
(C) collusion..consent
(D) rights..collaboration
(E) provisions..validity
7. Rather than enhancing a country's security, the successful development of nuclear weapons could serve at first to increase that country's _____.
(A) boldness (B) influence
(C) responsibility (D) moderation
(E) vulnerability

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Thomas Hardy's impulses as a writer, all of which he indulged in his novels, were numerous and divergent, and they did not always work together in harmony. Hardy was to some degree

- (5) interested in exploring his characters' psychologies, though impelled less by curiosity than by sympathy. Occasionally he felt the impulse to comedy (in all its detached coldness) as well as the impulse to farce, but he was more often
(10) inclined to see tragedy and record it. He was also inclined to literary realism in the several senses of that phrase. He wanted to describe ordinary human beings; he wanted to speculate on their dilemmas rationally (and, unfortu-
(15) nately, even schematically); and he wanted to record precisely the material universe. Finally, he wanted to be more than a realist. He wanted to transcend what he considered to be the banality of solely recording things exactly and
(20) to express as well his awareness of the occult and the strange.

In his novels these various impulses were sacrificed to each other inevitably and often. Inevitably, because Hardy did not care in the
(25) way that novelists such as Flaubert or James cared, and therefore took paths of least resistance. Thus, one impulse often surrendered to a fresher one and, unfortunately, instead of exacting a compromise, simply disappeared.
(30) A desire to throw over reality a light that never was might give way abruptly to the desire on the part of what we might consider a novelist-scientist to record exactly and concretely the structure and texture of a flower. In this
(35) instance, the new impulse was at least an energetic one, and thus its indulgence did not result in a relaxed style. But on other occasions Hardy abandoned a perilous, risky, and highly energizing impulse in favor of what was for him the fatally relaxing impulse to classify and schematize abstractly. When a relaxing impulse was indulged, the style—that sure index of an author's literary worth—was certain to become verbose. Hardy's weakness derived from his
(40) apparent inability to control the comings and goings of these divergent impulses and from his unwillingness to cultivate and sustain the energetic and risky ones. He submitted to first one and then another, and the spirit blew where
(45) it listed; hence the unevenness of any one of his novels. His most controlled novel, *Under the Greenwood Tree*, prominently exhibits two different but reconcilable impulses—a desire to be a realist-historian and a desire to be a psychologist of love—but the slight interlock-
(50) ings of plot are not enough to bind the two completely together. Thus even this book splits into two distinct parts.

17. Which of the following is the most appropriate title for the passage, based on its content?
(A) *Under the Greenwood Tree*: Hardy's Ambiguous Triumph
(B) The Real and the Strange: The Novelist's Shifting Realms
(C) Energy Versus Repose: The Role of Ordinary People in Hardy's Fiction
(D) Hardy's Novelistic Impulses: The Problem of Control
(E) Divergent Impulses: The Issue of Unity in the Novel
18. The passage suggests that the author would be most likely to agree with which of the following statements about literary realism?
(A) Literary realism is most concerned with the exploration of the internal lives of ordinary human beings.
(B) The term "literary realism" is susceptible to more than a single definition.
(C) Literary realism and an interest in psychology are likely to be at odds in a novelist's work.
(D) "Literary realism" is the term most often used by critics in describing the method of Hardy's novels.
(E) A propensity toward literary realism is a less interesting novelistic impulse than is an interest in the occult and the strange.
19. The author of the passage considers a writer's style to be
(A) a reliable means by which to measure the writer's literary merit
(B) most apparent in those parts of the writer's work that are not realistic
(C) problematic when the writer attempts to follow perilous or risky impulses
(D) shaped primarily by the writer's desire to classify and schematize
(E) the most accurate index of the writer's literary reputation

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20. Which of the following words could best be substituted for “relaxed” (line 37) without substantially changing the author’s meaning?
- (A) informal
(B) confined
(C) risky
(D) wordy
(E) metaphoric
21. The passage supplies information to suggest that its author would be most likely to agree with which of the following statements about the novelists Flaubert and James?
- (A) They indulged more impulses in their novels than did Hardy in his novels.
(B) They have elicited a greater degree of favorable response from most literary critics than has Hardy.
(C) In the writing of their novels, they often took pains to effect a compromise among their various novelistic impulses.
(D) Regarding novelistic construction, they cared more about the opinions of other novelists than about the opinions of ordinary readers.
(E) They wrote novels in which the impulse toward realism and the impulse away from realism were evident in equal measure.
22. Which of the following statements best describes the organization of lines 27 to 41 of the passage (“Thus . . . abstractly”)?
- (A) The author makes a disapproving observation and then presents two cases, one of which leads to a qualification of his disapproval and the other of which does not.
(B) The author draws a conclusion from a previous statement, explains his conclusion in detail, and then gives a series of examples that have the effect of resolving an inconsistency.
(C) The author concedes a point and then makes a counterargument, using an extended comparison and contrast that qualifies his original concession.
(D) The author makes a judgment, points out an exception to his judgment, and then contradicts his original assertion.
(E) The author summarizes and explains an argument and then advances a brief history of opposing arguments.
23. Which of the following statements about the use of comedy in Hardy’s novels is best supported by the passage?
- (A) Hardy’s use of comedy in his novels tended to weaken his literary style.
(B) Hardy’s use of comedy in his novels was inspired by his natural sympathy.
(C) Comedy appeared less frequently in Hardy’s novels than did tragedy.
(D) Comedy played an important role in Hardy’s novels though that comedy was usually in the form of farce.
(E) Comedy played a secondary role in Hardy’s more controlled novels only.
24. The author implies which of the following about *Under the Greenwood Tree* in relation to Hardy’s other novels?
- (A) It is Hardy’s most thorough investigation of the psychology of love.
(B) Although it is his most controlled novel, it does not exhibit any harsh or risky impulses.
(C) It, more than his other novels, reveals Hardy as a realist interested in the history of ordinary human beings.
(D) In it Hardy’s novelistic impulses are managed somewhat better than in his other novels.
(E) Its plot, like the plots of all of Hardy’s other novels, splits into two distinct parts.

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Upwards of a billion stars in our galaxy have burnt up their internal energy sources, and so can no longer produce the heat a star needs to oppose the inward force of gravity. These stars, of more than a few solar masses, evolve, in general, much more rapidly than does a star like the Sun. Moreover, it is just these more massive stars whose collapse does not halt at intermediate stages (that is, as white dwarfs or neutron stars). Instead, the collapse continues until a singularity (an infinitely dense concentration of matter) is reached.

It would be wonderful to observe a singularity and obtain direct evidence of the undoubtedly bizarre phenomena that occur near one. Unfortunately in most cases a distant observer cannot see the singularity; outgoing light rays are dragged back by gravity so forcefully that even if they could start out within a few kilometers of the singularity, they would end up in the singularity itself.

25. The author's primary purpose in the passage is to
- (A) describe the formation and nature of singularities
 - (B) explain why large numbers of stars become singularities
 - (C) compare the characteristics of singularities with those of stars
 - (D) explain what happens during the stages of a singularity's formation
 - (E) imply that singularities could be more easily studied if observers could get closer to them

26. The passage suggests which of the following about the Sun?
- I. The Sun could evolve to a stage of collapse that is less dense than a singularity.
 - II. In the Sun, the inward force of gravity is balanced by the generation of heat.
 - III. The Sun emits more observable light than does a white dwarf or a neutron star.
- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
27. Which of the following sentences would most probably follow the last sentence of the passage?
- (A) Thus, a physicist interested in studying phenomena near singularities would necessarily hope to find a singularity with a measurable gravitational field.
 - (B) Accordingly, physicists to date have been unable to observe directly any singularity.
 - (C) It is specifically this startling phenomenon that has allowed us to codify the scant information currently available about singularities.
 - (D) Moreover, the existence of this extraordinary phenomenon is implied in the extensive reports of several physicists.
 - (E) Although unanticipated, phenomena such as these are consistent with the structure of a singularity.

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5. Athletic director: "Members of our sports teams included, for the fall season, 80 football players and 40 cross-country runners; for the winter season, 20 wrestlers and 40 swimmers; for the spring season, 50 track-team members and 20 lacrosse players. Each team athlete participates in his or her sport five days a week for the whole three-month season, and no athlete is on two teams during any one season. Therefore, adding these figures, we find that our team sports program serves 250 different individual athletes."

In drawing the conclusion above, the athletic director fails to consider the relevant possibility that

- (A) athletes can be on more than one team in a single season
- (B) athletes can be on teams in more than one season
- (C) some of the team sports require a larger number of athletes on the team than do others
- (D) more athletes participate in team sports during one season than during another
- (E) an athlete might not participate in every one of the practice sessions and athletic contests in his or her sport

6. As soon as any part of a person's conduct affects prejudicially the interests of others, society has jurisdiction over it, and the question of whether the general welfare will or will not be promoted by interfering with it becomes open to discussion. If a person's conduct does not affect prejudicially the interests of others, it should not come under the jurisdiction of society in the first place.

The author in the passage above argues that

- (A) society is independent of the actions of individuals
- (B) the general welfare of a society is promoted when a person's conduct benefits others
- (C) conduct that does not infringe on the interests of others should not be under the jurisdiction of society
- (D) interference with the actions of individuals does not enhance the general welfare
- (E) in general, the interests of persons are mutually exclusive

7. Therapists find that treatment of those people who seek help because they are unable to stop smoking or overeating is rarely successful. From these experiences, therapists have concluded that such habits are intractable, and success in breaking them is rare.

As surveys show, millions of people have dropped the habit of smoking, and many people have successfully managed a substantial weight loss.

If all of the statements above are correct, an explanation of their apparent contradiction is provided by the hypothesis that

- (A) there have been some successes in therapy, and those successes were counted in the surveys
- (B) it is easier to stop smoking than it is to stop overeating
- (C) it is easy to break the habits of smoking and overeating by exercising willpower
- (D) the group of people selected for the survey did not include those who failed to break their habits even after therapy
- (E) those who succeed in curing themselves do not go for treatment and so are not included in the therapists' data

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23. The Supreme Court is no longer able to keep pace with the tremendous number of cases it agrees to decide. The Court schedules and hears 160 hours of oral argument each year, and 108 hours of next year's term will be taken up by cases left over from this year. Certainly the Court cannot be asked to increase its already burdensome hours. The most reasonable long-range solution to this problem is to allow the Court to decide many cases without hearing oral argument; in this way the Court might eventually increase dramatically the number of cases it decides each year.
- Which of the following, if true, could best be used to argue against the feasibility of the solution suggested above?
- (A) The time the Court spends hearing oral argument is only a small part of the total time it spends deciding a case.
 (B) The Court cannot legitimately avoid hearing oral argument in any case left over from last year.
 (C) Most authorities agree that 160 hours of oral argument is the maximum number that the Court can handle per year.
 (D) Even now the Court decides a small number of cases without hearing oral argument.
 (E) In many cases, the delay of a hearing for a full year can be extremely expensive to the parties involved.
24. That social institutions influence the formation of character has become a generally accepted proposition. This doctrine views individuals as but compliant recipients of social influence: personalities are entirely the products of society, and at any point in life an individual's personality can be changed by management of the social world. Crime is said to exist only because society has in some ways failed in its responsibility to give every person the resources to lead a productive life. However, whereas it is true that extreme poverty forces some people to steal, it is obvious that some persons will commit crimes no matter how well society treats them.
- Which of the following is implied by the "doctrine" (line 3) described in the passage above?
- (A) Social institutions may reflect personality as much as they shape it.
 (B) Social influence on personality is most strongly felt by the affluent.
 (C) The concentration of wealth in the hands of a privileged few accounts for the existence of crime.
 (D) Bringing about social reform is the most likely means of curtailing crime.
 (E) Less severe punishment of crime would be likely to result in more crime.
25. The sense of delayed gratification, of working now for later pleasure, has helped shape the economic behavior of our society. However, that sense is no longer nurtured as consistently in our children as it once was. For example, it used to take a bit of patience to put together the toys that children got in cereal boxes; now the toys come from the boxes whole.
- Which of the following is an assumption of the passage above?
- (A) The toys in cereal boxes have changed partly because the economic conditions of our society have improved.
 (B) The influence of promotion gimmicks on the economic behavior of our society has increased over the years.
 (C) The toys that used to come in cereal boxes were put together by the same children who played with them.
 (D) Part of the pleasure of any toy lies in putting the toy together before playing with it.
 (E) Today's children do not expect a single toy to provide pleasure for a long period of time.

SECTION 2

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The Chinese, who began systematic astronomical and weather observations shortly after the ancient Egyptians, were assiduous record-keepers, and because of this, can claim humanity's longest continuous ----- of natural events.
(A) defiance (B) documentation
(C) maintenance (D) theory (E) domination
2. Because many of the minerals found on the ocean floor are still ----- on land, where mining is relatively inexpensive, mining the ocean floor has yet to become a ----- enterprise.
(A) scarce..common
(B) accessible..marginal
(C) unidentified..subsidized
(D) conserved..public
(E) plentiful..profitable
3. The valedictory address, as it has developed in American colleges and universities over the years, has become a very strict form, a literary ----- that permits very little -----.
(A) text..clarity
(B) work..tradition
(C) genre..deviation
(D) oration..grandiloquence
(E) achievement..rigidity
4. A human being is quite ----- creature, for the gloss of rationality that covers his or her fears and ----- is thin and often easily breached.
(A) a logical..problems
(B) a frail..insecurity
(C) a valiant..phobias
(D) an ambitious..morality
(E) a ludicrous..laughter
5. Although the passage of years has softened the initially hostile reaction to his poetry, even now only a few independent observers ----- his works.
(A) praise (B) revile (C) scrutinize
(D) criticize (E) neglect
6. Unlike philosophers who constructed theoretically ideal states, she built a theory based on -----; thus, although her constructs may have been inelegant, they were ----- sound.
(A) reality..aesthetically
(B) intuition..intellectually
(C) surmise..scientifically
(D) experience..empirically
(E) conjecture..factually
7. Once a duckling has identified a parent, the instinctive bond becomes a powerful ----- for additional learning since, by ----- the parent, the duckling can acquire further information that is not genetically transmitted.
(A) impulse..surpassing
(B) referent..recognizing
(C) force..acknowledging
(D) inspiration..emulating
(E) channel..mimicking

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

As Gilbert White, Darwin, and others observed long ago, all species appear to have the innate capacity to increase their numbers from generation to generation. The task for ecologists is to untangle the environmental and biological factors that hold this intrinsic capacity for population growth in check over the long run. The great variety of dynamic behaviors exhibited by different populations makes this task more difficult: some populations remain roughly constant from year to year; others exhibit regular cycles of abundance and scarcity; still others vary wildly, with outbreaks and crashes that are in some cases plainly correlated with the weather, and in other cases not.

To impose some order on this kaleidoscope of patterns, one school of thought proposes dividing populations into two groups. These ecologists posit that the relatively steady populations have "density-dependent" growth parameters; that is, rates of birth, death, and migration which depend strongly on population density. The highly varying populations have "density-independent" growth parameters, with vital rates buffeted by environmental events; these rates fluctuate in a way that is wholly independent of population density.

This dichotomy has its uses, but it can cause problems if taken too literally. For one thing, no population can be driven entirely by density-independent factors all the time. No matter how severely or unpredictably birth, death, and migration rates may be fluctuating around their long-term averages, if there were no density-dependent effects, the population would, in the long run, either increase or decrease without bound (barring a miracle by which gains and losses canceled exactly). Put another way, it may be that on average 99 percent of all deaths in a population arise from density-independent causes, and only one percent from factors varying with density. The factors making up the one percent may seem unimportant, and their cause may be correspondingly hard to determine. Yet, whether recognized or not, they will usually determine the long-term average population density.

In order to understand the nature of the ecologist's investigation, we may think of the density-dependent effects on growth parameters as the "signal" ecologists are trying to isolate and interpret, one that tends to make the population increase from relatively low values or decrease from relatively high ones, while the density-independent effects act to produce "noise" in the population dynamics. For populations that remain relatively constant, or that oscillate around repeated cycles, the signal can be fairly easily characterized and its effects described, even though the causative biological mechanism may remain unknown. For irregularly fluctuating populations, we are likely to have too few observations to have any hope of extracting the signal from the overwhelming noise. But it now seems clear that all populations are regulated by a mixture of density-dependent and density-independent effects in varying proportions.

- Line
(5) 17. The author of the passage is primarily concerned with
- (A) discussing two categories of factors that control population growth and assessing their relative importance
 - (B) describing how growth rates in natural populations fluctuate over time and explaining why these changes occur
 - (C) proposing a hypothesis concerning population sizes and suggesting ways to test it
 - (D) posing a fundamental question about environmental factors in population growth and presenting some currently accepted answers
 - (E) refuting a commonly accepted theory about population density and offering a new alternative
- (10) 18. It can be inferred from the passage that the author considers the dichotomy discussed in the second paragraph to be
- (A) applicable only to erratically fluctuating populations
 - (B) useful, but only if its limitations are recognized
 - (C) dangerously misleading in most circumstances
 - (D) a complete and sufficient way to account for observed phenomena
 - (E) conceptually valid, but too confusing to apply on a practical basis
- (15) 19. Which of the following statements can be inferred from the last paragraph?
- (A) For irregularly fluctuating populations, doubling the number of observations made will probably result in the isolation of density-dependent effects.
 - (B) Density-dependent effects on population dynamics do not occur as frequently as do density-independent effects.
 - (C) At present, ecologists do not understand any of the underlying causes of the density-dependent effects they observe in population dynamics.
 - (D) Density-dependent effects on growth parameters are thought to be caused by some sort of biochemical "signaling" that ecologists hope eventually to understand.
 - (E) It is sometimes possible to infer the existence of a density-dependent factor controlling population growth without understanding its causative mechanism.

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20. According to the passage, which of the following is a true statement about density-dependent factors in population growth?
- (A) They ultimately account for long-term population levels.
 - (B) They have little to do with long-term population dynamics.
 - (C) They are always more easily isolated and described than those that are density-independent.
 - (D) They include random environmental events.
 - (E) They contradict current ecological assumptions about population dynamics.
21. According to the passage, all of the following behaviors have been exhibited by different populations EXCEPT
- (A) roughly constant population levels from year to year
 - (B) regular cycles of increases and decreases in numbers
 - (C) erratic increases in numbers correlated with the weather
 - (D) unchecked increases in numbers over many generations
 - (E) sudden declines in numbers from time to time
22. The discussion concerning population in lines 24-40 serves primarily to
- (A) demonstrate the difficulties ecologists face in studying density-dependent factors limiting population growth
 - (B) advocate more rigorous study of density-dependent factors in population growth
 - (C) prove that the death rates of any population are never entirely density-independent
 - (D) give an example of how death rates function to limit population densities in typical populations
 - (E) underline the importance of even small density-dependent factors in regulating long-term population densities
23. In the passage, the author does all of the following EXCEPT
- (A) cite the views of other biologists
 - (B) define a basic problem that the passage addresses
 - (C) present conceptual categories used by other biologists
 - (D) describe the results of a particular study
 - (E) draw a conclusion

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Line
(5)

In *Raisin in the Sun*, Lorraine Hansberry does not reject integration or the economic and moral promise of the American dream; rather, she remains loyal to this dream while looking, realistically, at its incomplete realization. Once we recognize this dual vision, we can accept the play's ironic nuances as deliberate social commentaries by Hansberry rather than as the "unintentional" irony that Bigsby attributes to the work. Indeed, a curiously persistent refusal to credit Hansberry with a capacity for intentional irony has led some critics to interpret the play's thematic conflicts as mere confusion, contradiction, or eclecticism. Isaacs, for example, cannot easily reconcile Hansberry's intense concern for her race with her ideal of human reconciliation. But the play's complex view of Black self-esteem and human solidarity as compatible is no more "contradictory" than Du Bois' famous, well-considered ideal of ethnic self-awareness coexisting with human unity, or Fanon's emphasis on an ideal internationalism that also accommodates national identities and roles.

(10)

(15)

24. The author's primary purpose in this passage is to
- (A) explain some critics' refusal to consider *Raisin in the Sun* a deliberately ironic play
 - (B) suggest that ironic nuances ally *Raisin in the Sun* with Du Bois' and Fanon's writings
 - (C) analyze the fundamental dramatic conflicts in *Raisin in the Sun*
 - (D) justify the inclusion of contradictory elements in *Raisin in the Sun*
 - (E) affirm the thematic coherence underlying *Raisin in the Sun*
25. It can be inferred from the passage that the author believes which of the following about Hansberry's use of irony in *Raisin in the Sun*?
- (A) It derives from Hansberry's eclectic approach to dramatic structure.
 - (B) It is justified by Hansberry's loyalty to a favorable depiction of American life.
 - (C) It is influenced by the themes of works by Du Bois and Fanon.
 - (D) It is more consistent with Hansberry's concern for Black Americans than with her ideal of human reconciliation.
 - (E) It reflects Hansberry's reservations about the extent to which the American dream has been realized.

26. In which of the following does the author of the passage reinforce his criticism of responses such as Isaacs' to *Raisin in the Sun*?
- (A) The statement that Hansberry is "loyal" (line 3) to the American dream
 - (B) The description of Hansberry's concern for Black Americans as "intense" (line 13)
 - (C) The assertion that Hansberry is concerned with "human solidarity" (line 15)
 - (D) The description of Du Bois' ideal as "well-considered" (line 17)
 - (E) The description of Fanon's internationalism as "ideal" (line 19)
27. The author of the passage would probably consider which of the following judgments to be most similar to the reasoning of critics described in lines 8-12?
- (A) The world is certainly flat; therefore, the person proposing to sail around it is unquestionably foolhardy.
 - (B) Radioactivity cannot be directly perceived; therefore, a scientist could not possibly control it in a laboratory.
 - (C) The painter of this picture could not intend it to be funny; therefore, its humor must result from a lack of skill.
 - (D) Traditional social mores are beneficial to culture; therefore, anyone who deviates from them acts destructively.
 - (E) Filmmakers who produce documentaries deal exclusively with facts; therefore, a filmmaker who reinterprets particular events is misleading us.

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8. The equity for women bill was narrowly defeated several times in a country's legislature. Thirty-three votes were required for passage. Thirty-two members of the legislature voted for the bill in 1985, whereas only 30 legislators voted for it in 1987. This was true even though no legislators changed their votes.

Which of the following, if true, best explains why the number of votes for the bill changed from 32 in 1985 to 30 in 1987?

- (A) In 1985 the effort to pass the bill was led by an influential, experienced legislator, whereas in 1987 the effort was led by a little-known, inexperienced legislator.
- (B) There was an election in 1986 in which two legislators who supported the bill lost their seats in the legislature and no one who supported the bill was newly elected.
- (C) There was an election in 1986 in which a party leader who did not support the bill was reelected and the party that was in power lost a seat in the legislature.
- (D) In 1986 an organization that opposed the bill mounted an extensive lobbying campaign to persuade legislators to vote against it.
- (E) Several provisions of the bill were rewritten between 1985 and 1987 in such a way that the bill's coverage was expanded considerably.

9. Tinea is a skin infection caused by certain fungi. A significant fraction of the people who contract tinea have outbreaks of its symptoms again and again. This proves that, for each of these individuals, the original case of tinea was, in fact, never completely cured.

The argument above assumes that a person who has outbreaks of tinea symptoms again and again

- (A) can never be completely cured of tinea
- (B) does not understand what causes tinea
- (C) did not get medical treatment for the original case of tinea
- (D) did not take steps to avoid contracting tinea
- (E) has not been repeatedly infected with tinea

10. Computer programs are unusual in that they are virtually the only products that have been protected both by patent and by copyright. Patents protect the idea behind an innovation, whereas copyrights protect the expression of that idea. However, in order to win either protection, the idea must be clearly distinguished from its expression.

Which of the following can be properly inferred from the statements above?

- (A) The idea behind some computer programs can be distinguished from the expression of that idea.
- (B) Anyone who writes a computer program is the inventor of the idea of that program.
- (C) Most products that are copyrighted are expressions of ideas that are patented.
- (D) Few inventors are owners of both patents and copyrights.
- (E) A patent for a computer program is no more difficult to win than a copyright.

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23. Over several months new residents of a housing development complained to their town council about unpleasant barnyard odors from a nearby farm. The council concluded that, because the residents were not used to rural life, they had mistakenly identified as a barnyard odor the smell of the town's new leaf-composting pile, located on a site adjacent to the farm.

Which of the following, if true, would most seriously weaken the town council's conclusion?

- (A) No one else in the town had complained of unpleasant odors from the farm.
- (B) Some of the new residents had moved to this town in order to lead a more rural life.
- (C) The new residents' complaints started before the establishment of the town's leaf-composting pile.
- (D) Leaf-composting piles produce unpleasant odors even if they are properly managed.
- (E) The farm was selected as the location for the leaf-composting pile before the housing development was built.

24. A three-hour movie replaced three regularly scheduled television programs. The movie had only two equally long breaks for advertisements instead of the five equal breaks that normally interrupted the regular programs. However, the total time used for advertisements during the movie equaled the time usually used for advertisements during the regular programs.

If the statements above are true, which of the following must also be true?

- (A) The average length of the advertisements shown during the movie was shorter than that of the advertisements usually shown during the regular programs.
- (B) Only one sponsor's advertisements were shown during the movie, whereas more than one sponsor's advertisements were shown during the regular programs.
- (C) The sponsors who advertised during the movie were not the same as the sponsors who usually advertised during the regular programs.
- (D) Each of the interruptions for advertisements in the movie was longer than each of the interruptions for advertisements that usually occurred in the regular programs.
- (E) The advertisements during the movie focused on only one kind of product, whereas the advertisements during the regular programs focused on a variety of products.

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25. In the 1980's billions of batteries were thrown into landfills. There is growing concern that as the batteries deteriorate, the toxic metals they contain will seep into the groundwater and contaminate it. That concern is unfounded, however, for studies of groundwater near large landfills used in the 1950's and then closed showed little, if any, such contamination.

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

- (A) Compared to typical 1980's landfills, typical 1950's landfills contain a negligible number of batteries.
- (B) In the 1950's batteries contained higher amounts of toxic metals than they did in the 1980's.
- (C) In the 1950's incinerator ash dumped in landfills contained more toxic material from batteries than did such ash in the 1980's.
- (D) Batteries manufactured in the 1980's were less likely to leak fluids containing toxic metals than were 1950's batteries.
- (E) In the 1980's efforts to recycle the toxic metals contained in batteries increased substantially.

SECTION 5

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Nearly two-thirds of the country's mushroom crop is produced by 160 growers in a single county, the greatest ----- growers anywhere.
(A) cause of
(B) agreement among
(C) indication of
(D) interaction between
(E) concentration of
2. The disjunction between educational objectives that stress independence and individuality and those that emphasize obedience to rules and cooperation with others reflects a ----- that arises from the values on which these objectives are based.
(A) conflict (B) redundancy (C) gain
(D) predictability (E) wisdom
3. It is ----- for a government to fail to do whatever it can to eliminate a totally ----- disease.
(A) folly. .innocuous
(B) irresponsible. .preventable
(C) crucial. .fatal
(D) instinctive. .devastating
(E) detrimental. .insignificant
4. Dramatic literature often ----- the history of a culture in that it takes as its subject matter the important events that have shaped and guided the culture.
(A) confounds (B) repudiates (C) recapitulates
(D) anticipates (E) polarizes
5. The legislators of 1563 realized the ----- of trying to regulate the flow of labor without securing its reasonable remuneration, and so the second part of the statute dealt with establishing wages.
(A) intricacy (B) anxiety (C) futility
(D) necessity (E) decadence
6. Scientists who are on the cutting edge of research must often violate common sense and make seemingly ----- assumptions because existing theories simply do not ----- newly observed phenomena.
(A) radical. .confirm
(B) vague. .incorporate
(C) absurd. .explain
(D) mistaken. .reveal
(E) inexact. .corroborate
7. The ----- with which the French aristocracy greeted the middle-class Rousseau was all the more ----- because he showed so little respect for them.
(A) deference. .remarkable
(B) suspicion. .uncanny
(C) reserve. .unexpected
(D) anger. .ironic
(E) appreciation. .deserved

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Some recent historians have argued that life in the British colonies in America from approximately 1763 to 1789 was marked by internal conflicts among colonists. Inheritors of some of the viewpoints of early twentieth-century Progressive historians such as Beard and Becker, these recent historians have put forward arguments that deserve evaluation.

The kind of conflict most emphasized by these historians is class conflict. Yet with the Revolutionary War dominating these years, how does one distinguish class conflict within that larger conflict? Certainly not by the side a person supported. Although many of these historians have accepted the earlier assumption that Loyalists represented an upper class, new evidence indicates that Loyalists, like rebels, were drawn from all socio-economic classes. (It is nonetheless probably true that a larger percentage of the well-to-do joined the Loyalists than joined the rebels.) Looking at the rebel side, we find little evidence for the contention that lower-class rebels were in conflict with upper-class rebels. Indeed, the war effort against Britain tended to suppress class conflicts. Where it did not, the disputing rebels of one or another class usually became Loyalists. Loyalism thus operated as a safety valve to remove socioeconomic discontent that existed among the rebels.

Disputes occurred, of course, among those who remained on the rebel side, but the extraordinary social mobility of eighteenth-century American society (with the obvious exception of slaves) usually prevented such disputes from hardening along class lines. Social structure was in fact so fluid—though recent statistics suggest a narrowing of economic opportunity as the latter half of the century progressed—that to talk about social classes at all requires the use of loose economic categories such as rich, poor, and middle class, or eighteenth-century designations like “the better sort.” Despite these vague categories, one should not claim unequivocally that hostility between recognizable classes cannot be legitimately observed. Outside of New York, however, there were very few instances of openly expressed class antagonism.

Having said this, however, one must add that there is much evidence to support the further claim of recent historians that sectional conflicts were common between 1763 and 1789. The “Paxton Boys” incident and the Regulator movement are representative examples of the widespread, and justified, discontent of western settlers against colonial or state governments

(50) dominated by eastern interests. Although undertones of class conflict existed beneath such hostility, the opposition was primarily geographical. Sectional conflict—which also existed between North and South—deserves further investigation.

(55) In summary, historians must be careful about the kind of conflict they emphasize in eighteenth-century America. Yet those who stress the achievement of a general consensus among the colonists cannot fully understand that consensus without understanding the conflicts that had to be overcome or repressed in order to reach it.

17. The author considers the contentions made by the recent historians discussed in the passage to be
 - (A) potentially verifiable
 - (B) partially justified
 - (C) logically contradictory
 - (D) ingenious but flawed
 - (E) capricious and unsupported
18. The author most likely refers to “historians such as Beard and Becker” (lines 5-6) in order to
 - (A) isolate the two historians whose work is most representative of the viewpoints of Progressive historians
 - (B) emphasize the need to find connections between recent historical writing and the work of earlier historians
 - (C) make a case for the importance of the views of the Progressive historians concerning eighteenth-century American life
 - (D) suggest that Progressive historians were the first to discover the particular internal conflicts in eighteenth-century American life mentioned in the passage
 - (E) point out historians whose views of history anticipated some of the views of the recent historians mentioned in the passage

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19. According to the passage, Loyalism during the American Revolutionary War served the function of
- (A) eliminating the disputes that existed among those colonists who supported the rebel cause
 - (B) drawing upper, as opposed to lower, socioeconomic classes away from the rebel cause
 - (C) tolerating the kinds of socioeconomic discontent that were not allowed to exist on the rebel side
 - (D) channeling conflict that existed within a socioeconomic class into the war effort against the rebel cause
 - (E) absorbing members of socioeconomic groups on the rebel side who felt themselves in contention with members of other socioeconomic groups
20. The passage suggests that the author would be likely to agree with which of the following statements about the social structure of eighteenth-century American society?
- I. It allowed greater economic opportunity than it did social mobility.
 - II. It permitted greater economic opportunity prior to 1750 than after 1750.
 - III. It did not contain rigidly defined socioeconomic divisions.
 - IV. It prevented economic disputes from arising among members of the society.
- (A) I and IV only
 - (B) II and III only
 - (C) III and IV only
 - (D) I, II, and III only
 - (E) I, II, III, and IV
21. It can be inferred from the passage that the author would be most likely to agree with which of the following statements regarding socioeconomic class and support for the rebel and Loyalist causes during the American Revolutionary War?
- (A) Identifying a person's socioeconomic class is the least accurate method of ascertaining which side that person supported.
 - (B) Identifying a person as a member of the rebel or of the Loyalist side does not necessarily reveal that person's particular socioeconomic class.
 - (C) Both the rebel and the Loyalist sides contained members of all socioeconomic classes, although there were fewer disputes among socioeconomic classes on the Loyalist side.
 - (D) Both the rebel and the Loyalist sides contained members of all socioeconomic classes, although the Loyalist side was made up primarily of members of the upper classes.
 - (E) Both the rebel and the Loyalist sides contained members of all socioeconomic classes, although many upper-class rebels eventually joined the Loyalists.
22. The author suggests which of the following about the representativeness of colonial or state governments in America from 1763 to 1789?
- (A) The governments inadequately represented the interests of people in western regions.
 - (B) The governments more often represented class interests than sectional interests.
 - (C) The governments were less representative than they had been before 1763.
 - (D) The governments were dominated by the interests of people of an upper socioeconomic class.
 - (E) The governments of the northern colonies were less representative than were the governments of the southern colonies.
23. According to the passage, which of the following is a true statement about sectional conflicts in America between 1763 and 1789?
- (A) These conflicts were instigated by eastern interests against western settlers.
 - (B) These conflicts were the most serious kind of conflict in America.
 - (C) The conflicts eventually led to openly expressed class antagonism.
 - (D) These conflicts contained an element of class hostility.
 - (E) These conflicts were motivated by class conflicts.

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Line
(5)

Since 1953, many experimental attempts to synthesize the chemical constituents of life under "primitive Earth conditions" have been performed, but none of these experiments has produced anything approaching the complexity of the simplest organism. They have demonstrated, however, that a variety of the complex molecules currently making up living organisms could have been present in the early ocean and atmosphere, with only one limitation: such molecules are synthesized far less readily when oxygen-containing compounds dominate the atmosphere. Therefore some scientists postulate that the Earth's earliest atmosphere, unlike that of today, was dominated by hydrogen, methane, and ammonia.

(15) From these studies, scientists have concluded that the surface of the primitive Earth was covered with oceans containing the molecules fundamental to life. Although, at present, scientists cannot explain how these relatively small molecules combined to produce (20) larger, more complex molecules, some scientists have precipitously ventured hypotheses that attempt to explain the development, from these larger molecules, of the earliest self-duplicating organisms.

24. According to the passage, which of the following can be inferred about the process by which the chemical constituents of life were synthesized under primitive Earth conditions?

- (A) The synthesis is unlikely to occur under current atmospheric conditions.
- (B) The synthesis is common in modern laboratories.
- (C) The synthesis occurs more readily in the atmosphere than in the ocean.
- (D) The synthesis easily produces the most complex organic molecules.
- (E) The synthesis is accelerated by the presence of oxygen-containing compounds.

25. The primary purpose of the passage is to

- (A) point out that theories about how life developed on Earth have changed little since 1953
- (B) warn of increasing levels of hydrogen, methane, and ammonia in the Earth's atmosphere
- (C) describe the development since 1953 of some scientists' understanding of how life began on Earth
- (D) demonstrate that the synthesis of life in the laboratory is too difficult for modern technology
- (E) describe how primitive atmospheric conditions produced the complex molecules of living organisms

26. It can be inferred from the passage that "some scientists" assume which of the following concerning "larger, more complex molecules" (line 20) ?

- (A) The earliest atmosphere was formed primarily of these molecules.
- (B) Chemical processes involving these molecules proceeded much more slowly under primitive Earth conditions.
- (C) The presence of these molecules would necessarily precede the existence of simple organisms.
- (D) Experimental techniques will never be sufficiently sophisticated to produce in the laboratory simple organisms from these chemical constituents.
- (E) Explanations could easily be developed to explain how simple molecules combined to form these more complex ones.

27. The author's reaction to the attempts that have been made to explain the development of the first self-duplicating organisms can best be described as one of

- (A) enthusiasm (B) expectation (C) dismay
- (D) skepticism (E) antipathy

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- I. From 1975 to 1985, the yearly level of polychlorinated biphenyls, or PCB's, to which the average person is exposed decreased significantly.
- II. From 1975 to 1985, the incidence of disease caused by PCB exposure doubled from previous levels, which were already high. This was true even for the group of people whose exposure was average for each year during that period.
8. Which of the following, if true, would best resolve the apparent contradiction between statement I and statement II above?
- (A) The diseases caused by PCB's are not very severe.
(B) PCB's are not easily destroyed by environmental forces.
(C) From 1965 to 1975, the average level of exposure to PCB's also decreased.
(D) Between 1985 and the present, the average level of exposure to PCB's increased to pre-1975 levels.
(E) The time between the period of exposure to PCB's and the onset of diseases caused by such exposure is often longer than 10 years.
9. Plastic has been replacing aluminum in a widening array of military equipment because it offers equal protection at less weight. A plastic-armored vehicle is, however, twice as costly to make as an aluminum-armored vehicle. Therefore, the replacement of aluminum-armored vehicles by plastic-armored vehicles that offer equal protection is not yet advisable from a financial point of view.
- Which of the following, if true, casts most doubt on the conclusion above?
- (A) A plastic-armored vehicle could be operated at one-third the current cost of operating an aluminum-armored vehicle.
(B) The introduction of plastic-armored vehicles would require the military to retrain maintenance personnel and to purchase new tools and parts.
(C) The aluminum-armored vehicle is the least costly to maintain of all the metal-armored vehicles currently used by the military.
(D) Although the cost of plastic is expected to remain stable, the growing practice of recycling metals will probably drive down the cost of metals.
(E) The cost of repairing body damage on plastic-armored vehicles would exceed what the military currently spends to repair body damage on aluminum-armored vehicles.
10. Pandas are rapidly disappearing from the wild. Therefore, in order to preserve the species, existing pandas should be captured and placed in zoos around the world.
- Which of the following statements, if true, casts most doubt on the conclusion drawn above?
- (A) When in captivity, pandas typically produce more young than they do in their native habitat.
(B) Newborn pandas in zoos are not likely to die from infectious diseases, whereas newborn pandas in the wild are likely to die from these diseases.
(C) Sufficient quantities of bamboo, the panda's only food, cannot be made available outside the panda's native habitat.
(D) Many zoos are eager to increase their stock of rare and exotic animals, but there are not enough pandas for all the zoos that want one.
(E) Pandas in zoos have as many offspring that survive to adulthood as do pandas in the wild.

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23. Scientists have found that inserting genes from a plant virus into the genes of a plant susceptible to that virus increases the plant's resistance to the virus. Because viral diseases account for a significant proportion of crop losses, such genetic alterations, even if carried out on only a modest scale, will significantly reduce crop losses.

Each of the following, if true, strengthens the conclusion above EXCEPT:

- (A) In areas where two successive crops are raised per year, protecting the first crop from a virus will generally protect the second crop from that virus as well.
- (B) By repeatedly attacking plants that are genetically altered to become virus-resistant, the virus often becomes less lethal to plants that are not genetically altered in that way.
- (C) Plants that are genetically altered to become virus-resistant often pass virus-resistant genes on to their offspring.
- (D) Plants that are made genetically resistant to one kind of virus often acquire resistance to related viral strains as well.
- (E) Plants that are made genetically resistant to one kind of virus are then more susceptible to infection by unrelated viruses.

24. Inspection system X and inspection system Y, though based on different principles, each detect all product flaws, but they each also erroneously reject three percent of flawless products. Since false rejections are very costly, money will be saved by installing both systems, instead of either one or the other, and rejecting only products found flawed by both.

The argument above requires which of the following assumptions?

- (A) The three percent of flawless products that system X rejects are not all the same products, piece for piece, that system Y erroneously rejects.
- (B) It is less costly to accept a flawed product than to reject a flawless one.
- (C) In their price range, systems X and Y are the least error-prone inspection systems on the market.
- (D) Whichever system performs the second inspection needs to inspect only products not rejected by the first system.
- (E) Any way of detecting flaws, other than by using either system X or system Y, requires complete disassembly of the products.

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25. The 1988 drought in North America was probably caused by shifts in the temperature patterns of large equatorial stretches of the Pacific Ocean. The drought, therefore, is not evidence for the hypothesis that a long-term global warming trend, allegedly caused by atmospheric pollutants such as carbon dioxide, is occurring.

Which of the following, if true, constitutes the best criticism of the argument above?

- (A) Most pre-1988 droughts for which we have records were preceded by shifts in temperature patterns in the Pacific Ocean.
- (B) There has been no warming trend in the United States over the last 100 years.
- (C) The consequences of global warming occur long after the actual emission of pollutants into the atmosphere.
- (D) Emissions of carbon dioxide gas into the atmosphere increased in 1988.
- (E) A global warming trend could cause increases in the frequency and severity of shifts in temperature patterns in the Pacific Ocean.

TEST 27

SECTION 1

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Agronomists are increasingly worried about “desertification,” the phenomenon that is turning many of the world’s ----- fields and pastures into ----- wastelands, unable to support the people living on them.
(A) fertile..barren
(B) productive..blooming
(C) arid..thriving
(D) poorest..marginal
(E) largest..saturated
2. Old beliefs die hard: even when jobs became -----, the long-standing fear that unemployment could return at a moment’s notice -----.
(A) vacant..perished
(B) easier..changed
(C) plentiful..persisted
(D) protected..subsided
(E) available..receded
3. Intellectual ----- and flight from boredom have caused him to rush pell-mell into situations that less ----- spirits might hesitate to approach.
(A) restlessness..adventurous
(B) agitation..passive
(C) resilience..quiescent
(D) tranquillity..versatile
(E) curiosity..lethargic
4. Science advances in ----- spiral in that each new conceptual scheme ----- the phenomena explained by its predecessors and adds to those explanations.
(A) a discontinuous . . . decries
(B) a repetitive..vitiates
(C) a widening..embraces
(D) an anomalous..captures
(E) an explosive..questions
5. Politeness is not a ----- attribute of human behavior, but rather a central virtue, one whose very existence is increasingly being ----- by the faddish requirement to “speak one’s mind.”
(A) superficial..threatened
(B) pervasive..undercut
(C) worthless..forestalled
(D) precious..repudiated
(E) trivial..affected
6. The painting was larger than it appeared to be, for, hanging in a darkened recess of the chapel, it was ----- by the perspective.
(A) improved
(B) aggrandized
(C) embellished
(D) jeopardized
(E) diminished
7. Because folk art is neither completely rejected nor accepted as an art form by art historians, their final evaluations of it necessarily remain -----.
(A) arbitrary
(B) estimable
(C) orthodox
(D) unspoken
(E) equivocal

GO ON TO THE NEXT PAGE.

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

- Line
(5)* Many critics of Emily Brontë's novel *Wuthering Heights* see its second part as a counterpoint that comments on, if it does not reverse, the first part, where a "romantic" reading receives more confirmation. Seeing the two parts as a whole is encouraged by the novel's sophisticated structure, revealed in its complex use of narrators and time shifts. Granted that the presence of these elements need not argue an authorial awareness of novelistic construction comparable to that of Henry James, their presence does encourage attempts to unify the novel's heterogeneous parts. However, any interpretation that seeks to unify all of the novel's diverse elements is bound to be somewhat unconvincing. This is not because such an interpretation necessarily stiffens into a thesis (although rigidity in any interpretation of this or of any novel is always a danger), but because *Wuthering Heights* has recalcitrant elements of undeniable power that, ultimately, resist inclusion in an all-encompassing interpretation. In this respect, *Wuthering Heights* shares a feature of *Hamlet*.
- (10)* 17. According to the passage, which of the following is a true statement about the first and second parts of *Wuthering Heights*?
- (A) The second part has received more attention from critics.
 - (B) The second part has little relation to the first part.
 - (C) The second part annuls the force of the first part.
 - (D) The second part provides less substantiation for a "romantic" reading.
 - (E) The second part is better because it is more realistic.
- (15)* 18. Which of the following inferences about Henry James's awareness of novelistic construction is best supported by the passage?
- (A) James, more than any other novelist, was aware of the difficulties of novelistic construction.
 - (B) James was very aware of the details of novelistic construction.
 - (C) James's awareness of novelistic construction derived from his reading of Brontë.
 - (D) James's awareness of novelistic construction has led most commentators to see unity in his individual novels.
 - (E) James's awareness of novelistic construction precluded him from violating the unity of his novels.

19. The author of the passage would be most likely to agree that an interpretation of a novel should
- (A) not try to unite heterogeneous elements in the novel
 - (B) not be inflexible in its treatment of the elements in the novel
 - (C) not argue that the complex use of narrators or of time shifts indicates a sophisticated structure
 - (D) concentrate on those recalcitrant elements of the novel that are outside the novel's main structure
 - (E) primarily consider those elements of novelistic construction of which the author of the novel was aware
20. The author of the passage suggests which of the following about *Hamlet*?
- I. *Hamlet* has usually attracted critical interpretations that tend to stiffen into theses.
 - II. *Hamlet* has elements that are not amenable to an all-encompassing critical interpretation.
 - III. *Hamlet* is less open to an all-encompassing critical interpretation than is *Wuthering Heights*.
 - IV. *Hamlet* has not received a critical interpretation that has been widely accepted by readers.
- (A) I only
 - (B) II only
 - (C) I and IV only
 - (D) III and IV only
 - (E) I, II, and III only

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The determination of the sources of copper ore used in the manufacture of copper and bronze artifacts of Bronze Age civilizations would add greatly to our knowledge of cultural contacts and trade in that era. Researchers have analyzed artifacts and ores for their concentrations of elements, but for a variety of reasons, these studies have generally failed to provide evidence of the sources of the copper used in the objects. Elemental composition can vary within the same copper-ore lode, usually because of varying admixtures of other elements, especially iron, lead, zinc, and arsenic. And high concentrations of cobalt or zinc, noticed in some artifacts, appear in a variety of copper-ore sources. Moreover, the processing of ores introduced poorly controlled changes in the concentrations of minor and trace elements in the resulting metal. Some elements evaporate during smelting and roasting; different temperatures and processes produce different degrees of loss. Finally, flux, which is sometimes added during smelting to remove waste material from the ore, could add quantities of elements to the final product.

An elemental property that is unchanged through these chemical processes is the isotopic composition of each metallic element in the ore. Isotopic composition, the percentages of the different isotopes of an element in a given sample of the element, is therefore particularly suitable as an indicator of the sources of the ore. Of course, for this purpose it is necessary to find an element whose isotopic composition is more or less constant throughout a given ore body, but varies from one copper ore body to another or, at least, from one geographic region to another.

The ideal choice, when isotopic composition is used to investigate the source of copper ore, would seem to be copper itself. It has been shown that small but measurable variations occur naturally in the isotopic composition of copper. However, the variations are large enough only in rare ores; between samples of the common ore minerals of copper, isotopic variations greater than the measurement error have not been found. An alternative choice is lead, which occurs in most copper and bronze artifacts of the Bronze Age in amounts consistent with the lead being derived from the copper ores and possibly from the fluxes. The isotopic composition of lead often varies from one source of common copper ore to another, with variations exceeding the measurement error; and preliminary studies indicate virtually uniform isotopic composition of the lead from a single copper-ore source. While some of the lead found in an artifact may have been introduced from flux or when other metals were added to the copper ore, lead so added in Bronze Age processing would usually have the same isotopic composition as the lead in the copper ore. Lead isotope studies may thus prove useful for interpreting the archaeological record of the Bronze Age.

- Line
(5) (10) (15) (20) (25) (30) (35) (40) (45) (50)
21. The primary purpose of the passage is to
- (A) discuss the techniques of analyzing lead isotope composition
 - (B) propose a way to determine the origin of the copper in certain artifacts
 - (C) resolve a dispute concerning the analysis of copper ore
 - (D) describe the deficiencies of a currently used method of chemical analysis of certain metals
 - (E) offer an interpretation of the archaeological record of the Bronze Age
22. The author first mentions the addition of flux during smelting (lines 18-21) in order to
- (A) give a reason for the failure of elemental composition studies to determine ore sources
 - (B) illustrate differences between various Bronze Age civilizations
 - (C) show the need for using high smelting temperatures
 - (D) illustrate the uniformity of lead isotope composition
 - (E) explain the success of copper isotope composition analysis
23. The author suggests which of the following about a Bronze Age artifact containing high concentrations of cobalt or zinc?
- (A) It could not be reliably tested for its elemental composition.
 - (B) It could not be reliably tested for its copper isotope composition.
 - (C) It could not be reliably tested for its lead isotope composition.
 - (D) It could have been manufactured from ore from any one of a variety of sources.
 - (E) It could have been produced by the addition of other metals during the processing of the copper ore.

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24. According to the passage, possible sources of the lead found in a copper or bronze artifact include which of the following?
- I. The copper ore used to manufacture the artifact
 - II. Flux added during processing of the copper ore
 - III. Other metal added during processing of the copper ore
- (A) I only
(B) II only
(C) III only
(D) II and III only
(E) I, II, and III
25. The author rejects copper as the “ideal choice” mentioned in line 33 because
- (A) the concentration of copper in Bronze Age artifacts varies
(B) elements other than copper may be introduced during smelting
(C) the isotopic composition of copper changes during smelting
(D) among common copper ores, differences in copper isotope composition are too small
(E) within a single source of copper ore, copper isotope composition can vary substantially
26. The author makes which of the following statements about lead isotope composition?
- (A) It often varies from one copper-ore source to another.
 - (B) It sometimes varies over short distances in a single copper-ore source.
 - (C) It can vary during the testing of artifacts, producing a measurement error.
 - (D) It frequently changes during smelting and roasting.
 - (E) It may change when artifacts are buried for thousands of years.
27. It can be inferred from the passage that the use of flux in processing copper ore can alter the lead isotope composition of the resulting metal EXCEPT when
- (A) there is a smaller concentration of lead in the flux than in the copper ore
 - (B) the concentration of lead in the flux is equivalent to that of the lead in the ore
 - (C) some of the lead in the flux evaporates during processing
 - (D) any lead in the flux has the same isotopic composition as the lead in the ore
 - (E) other metals are added during processing

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8. For three years, while constructing a new elementary school, the Middletown school board has been sending large numbers of students from the town of Middletown to both Crestwood and Lynbrook elementary schools in the town of Edgewood. Therefore, when Middletown's new elementary school is completed next year, either Crestwood or Lynbrook will have to be closed and their student populations consolidated.

The argument above presupposes that

- (A) withdrawal of the Middletown students from the Crestwood and Lynbrook schools will leave one or both of these schools seriously underpopulated
- (B) Middletown's new elementary school will be too small for the projected student population
- (C) the Middletown students represent only a small fraction of the total student populations at both Crestwood and Lynbrook schools
- (D) absorption of extra students from Middletown has placed a serious strain on the resources of both Crestwood and Lynbrook schools
- (E) students will not transfer between the Crestwood and Lynbrook schools in the next twelve months

9. During his three years in office, the governor of a state has frequently been accused of having sexist attitudes toward women. Yet he has filled five of the nineteen vacant high-level positions in his administration with women appointees, all of whom are still serving. This shows that the governor is not sexist.

Which of the following statements, if true, would most seriously weaken the conclusion above?

- (A) One of the women appointed by the governor to a high-level position is planning to resign her post.
- (B) The platform of the governor's political party required him to appoint at least five women to high-level positions.
- (C) Forty-seven percent of the women who voted in the state gubernatorial election three years ago voted for the governor.
- (D) A governor of a neighboring state recently appointed seven women to high-level positions.
- (E) The governor appointed two Black Americans, two Hispanic Americans, and one Asian American to high-level positions in his administration.

10. Proportionally, more persons diagnosed as having the brain disorder schizophrenia were born in the winter months than at any other time of year. A recent study suggests that the cause may have been the nutrient-poor diets of some expectant mothers during the coldest months of the year, when it was hardest for people to get, or afford, a variety of fresh foods.

Which of the following, if true, helps to support the conclusion presented above?

- (A) Over the years the number of cases of schizophrenia has not shown a correlation with degree of economic distress.
- (B) Most of the development of brain areas affected in schizophrenia occurs during the last month of the mother's pregnancy.
- (C) Suicide rates are significantly higher in winter than in any other season.
- (D) The nutrients in fresh foods have the same effects on the development of the brain as do the nutrients in preserved foods.
- (E) A sizable proportion of the patients involved in the study have a history of schizophrenia in the family.

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23. The primary schools in a city range from one to six stories in height. If a classroom in a primary school is above the second floor, it must have a fireproof door.

If the statements above are true, which of the following statements must also be true about primary-school rooms in the city?

- (A) Some third-floor rooms in primary schools do not have fireproof doors.
 - (B) No second-floor classrooms in primary schools have fireproof doors.
 - (C) In primary schools, rooms above the second floor that are not classrooms do not have fireproof doors.
 - (D) Any fourth-floor classrooms in primary schools have fireproof doors.
 - (E) Primary schools with classrooms on the first floor only do not have any fireproof doors.
24. It is sometimes held that computer scientists would make better progress in developing sophisticated artificial-intelligence programs if only they knew more about how human beings think. This view is, however, open to the objection that not a single major step forward in airplane design has come from any insights into the nature of bird flight.
- The objection above draws on an analogy that assumes that artificial-intelligence programs are similar to which of the following?
- (A) Theories of human thought
 - (B) Blueprints for airplanes
 - (C) Hypotheses about how science achieves progress
 - (D) Computer simulations of birds in flight
 - (E) Research into the nature of bird flight

25. Two hundred corporations with net incomes of more than \$122 million each accounted for 77 percent of total corporate gifts to United States higher education in 1985. That year, 26 percent of total corporate gifts to United States higher education came from 14 Japanese corporations, each of which received income from 27 or more countries.

If the statements above are true, which of the following must also be true?

- (A) Most of the net income earned by the 14 Japanese corporations was earned outside of Japan.
- (B) Individuals contributed 23 percent of total gifts to United States higher education in 1985.
- (C) Gifts from corporations accounted for more than half of the total contributions to United States higher education in 1985.
- (D) One or more of the 200 corporations with more than \$122 million in net income received income from 27 or more countries.
- (E) Most of the 14 Japanese corporations earned more than \$122 million in net income in 1985.

SECTION 5
Time—30 minutes
38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Because it is ----- to ----- all the business costs related to employee discontent, an accurate estimate of the magnitude of these costs is not easily calculated.
(A) difficult..measure
(B) impossible..justify
(C) improper..overlook
(D) useless..discover
(E) necessary..pinpoint
2. Consider the universal cannibalism of the sea, all of whose creatures ----- one another.
(A) hide from
(B) ferret out
(C) prey on
(D) glide among
(E) compete against
3. How could words, confined as they individually are to certain ----- meanings specified in a dictionary, eventually come, when combined in groups, to create obscurity and actually to prevent thought from being -----?
(A) indefinite..articulated
(B) conventional..conceivable
(C) unlikely..classified
(D) archaic..expressed
(E) precise..communicable
4. Even though they tended to be ----- strangers, fifteenth-century Europeans did not automatically associate ----- and danger.
(A) trusting of..diversity
(B) haughty with..nonconformity
(C) interested in..enmity
(D) antagonistic to..rudeness
(E) hostile to..foreignness
5. The modern age is a permissive one in which things can be said explicitly, but the old tradition of ----- dies hard.
(A) garrulousness
(B) exaggeration
(C) excoriation
(D) bombast
(E) euphemism
6. Although many findings of the Soviet and United States probes of Venus were complementary, the two sets of atmospheric results clearly could not be ----- without a major change of data or -----.
(A) obtained..experimentation
(B) completed..position
(C) matched..implementation
(D) reconciled..interpretation
(E) produced..falsification
7. While it is assumed that the mechanization of work has a ----- effect on the lives of workers, there is evidence available to suggest that, on the contrary, mechanization has served to ----- some of the traditional roles of women.
(A) salutary..improve
(B) dramatic..undermine
(C) benign..revise
(D) debilitating..weaken
(E) revolutionary..reinforce

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Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

Line (5) Since the Hawaiian Islands have never been connected to other land masses, the great variety of plants in Hawaii must be a result of the long-distance dispersal of seeds, a process that requires both a method of transport and an equivalence between the ecology of the source area and that of the recipient area.

(10) There is some dispute about the method of transport involved. Some biologists argue that ocean and air currents are responsible for the transport of plant seeds to Hawaii. Yet the results of flotation experiments and the low temperatures of air currents cast doubt on these hypotheses. More probable is bird transport, either externally, by accidental attachment of the seeds to feathers, or internally, by the swallowing of fruit and subsequent excretion of the seeds. While it is likely that fewer varieties of plant seeds have reached Hawaii externally than internally, more varieties are known to be adapted to external than to internal transport.

17. The author of the passage is primarily concerned with
- (A) discussing different approaches biologists have taken to testing theories about the distribution of plants in Hawaii
 - (B) discussing different theories about the transport of plant seeds to Hawaii
 - (C) discussing the extent to which air currents are responsible for the dispersal of plant seeds to Hawaii
 - (D) resolving a dispute about the adaptability of plant seeds to bird transport
 - (E) resolving a dispute about the ability of birds to carry plant seeds long distances

18. The author mentions the results of flotation experiments on plant seeds (lines 10-12) most probably in order to
- (A) support the claim that the distribution of plants in Hawaii is the result of the long-distance dispersal of seeds
 - (B) lend credibility to the thesis that air currents provide a method of transport for plant seeds to Hawaii
 - (C) suggest that the long-distance dispersal of seeds is a process that requires long periods of time
 - (D) challenge the claim that ocean currents are responsible for the transport of plant seeds to Hawaii
 - (E) refute the claim that Hawaiian flora evolved independently from flora in other parts of the world

19. It can be inferred from information in the passage that the existence in alpine regions of Hawaii of a plant species that also grows in the southwestern United States would justify which of the following conclusions?
- (A) The ecology of the southwestern United States is similar in important respects to the ecology of alpine regions of Hawaii.
 - (B) There are ocean currents that flow from the southwestern United States to Hawaii.
 - (C) The plant species discovered in Hawaii must have traveled from the southwestern United States only very recently.
 - (D) The plant species discovered in Hawaii reached there by attaching to the feathers of birds migrating from the southwestern United States.
 - (E) The plant species discovered in Hawaii is especially well adapted to transport over long distances.
20. The passage supplies information for answering which of the following questions?
- (A) Why does successful long-distance dispersal of plant seeds require an equivalence between the ecology of the source area and that of the recipient area?
 - (B) Why are more varieties of plant seeds adapted to external rather than to internal bird transport?
 - (C) What varieties of plant seeds are birds that fly long distances most likely to swallow?
 - (D) What is a reason for accepting the long-distance dispersal of plant seeds as an explanation for the origin of Hawaiian flora?
 - (E) What evidence do biologists cite to argue that ocean and air currents are responsible for the transport of plant seeds to Hawaii?

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Line
(5) A long-held view of the history of the English colonies that became the United States has been that England's policy toward these colonies before 1763 was dictated by commercial interests and that a change to a more imperial policy, dominated by expansionist militarist objectives, generated the tensions that ultimately led to the American Revolution. In a recent study, Stephen Saunders Webb has presented a formidable challenge to this view. According to Webb, England
(10) already had a military imperial policy for more than a century before the American Revolution. He sees Charles II, the English monarch between 1660 and 1685, as the proper successor of the Tudor monarchs of the sixteenth century and of Oliver Cromwell, all of whom were bent on extending centralized executive power over England's possessions through the use of what Webb calls "garrison government." Garrison government allowed the colonists a legislative assembly, but real authority, in Webb's view, belonged to the
(15) colonial governor, who was appointed by the king and supported by the "garrison," that is, by the local contingent of English troops under the colonial governor's command.

According to Webb, the purpose of garrison government was to provide military support for a royal policy designed to limit the power of the upper classes in the American colonies. Webb argues that the colonial legislative assemblies represented the interests not of the common people but of the colonial upper classes, a
(20) coalition of merchants and nobility who favored self-rule and sought to elevate legislative authority at the expense of the executive. It was, according to Webb, the colonial governors who favored the small farmer, opposed the plantation system, and tried through taxation to break up large holdings of land. Backed by the military presence of the garrison, these governors tried to prevent the gentry and merchants, allied in the colonial assemblies, from transforming colonial America into a capitalistic oligarchy.
(25)

Webb's study illuminates the political alignments that existed in the colonies in the century prior to the American Revolution, but his view of the crown's use of the military as an instrument of colonial policy is not entirely convincing. England during the seventeenth century was not noted for its military achievements. Cromwell did mount England's most ambitious overseas military expedition in more than a century, but it proved to be an utter failure. Under Charles II, the English army was too small to be a major instrument of government. Not until the war with France in 1697 did William III persuade Parliament to create a professional standing army, and Parliament's price for doing so was to keep the army under tight legislative control.
(30) While it may be true that the crown attempted to curtail the power of the colonial upper classes, it is hard to imagine how the English army during the seventeenth century could have provided significant military support for such a policy.
(35)
(40)
(45)
(50)
(55)

21. The passage can best be described as a
- (A) survey of the inadequacies of a conventional viewpoint
 - (B) reconciliation of opposing points of view
 - (C) summary and evaluation of a recent study
 - (D) defense of a new thesis from anticipated objections
 - (E) review of the subtle distinctions between apparently similar views
22. The passage suggests that the view referred to in lines 1-7 argued that
- (A) the colonial governors were sympathetic to the demands of the common people
 - (B) Charles II was a pivotal figure in the shift of English monarchs toward a more imperial policy in their governorship of the American colonies
 - (C) the American Revolution was generated largely out of a conflict between the colonial upper classes and an alliance of merchants and small farmers
 - (D) the military did not play a major role as an instrument of colonial policy until 1763
 - (E) the colonial legislative assemblies in the colonies had little influence over the colonial governors
23. It can be inferred from the passage that Webb would be most likely to agree with which of the following statements regarding garrison government?
- (A) Garrison government gave legislative assemblies in the colonies relatively little authority, compared to the authority that it gave the colonial governors.
 - (B) Garrison government proved relatively ineffective until it was used by Charles II to curb the power of colonial legislatures.
 - (C) Garrison government became a less viable colonial policy as the English Parliament began to exert tighter legislative control over the English military.
 - (D) Oliver Cromwell was the first English ruler to make use of garrison government on a large scale.
 - (E) The creation of a professional standing army in England in 1697 actually weakened garrison government by diverting troops from the garrisons stationed in the American colonies.

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24. According to the passage, Webb views Charles II as the “proper successor” (line 13) of the Tudor monarchs and Cromwell because Charles II
- (A) used colonial tax revenues to fund overseas military expeditions
 - (B) used the military to extend executive power over the English colonies
 - (C) wished to transform the American colonies into capitalistic oligarchies
 - (D) resisted the English Parliament’s efforts to exert control over the military
 - (E) allowed the American colonists to use legislative assemblies as a forum for resolving grievances against the crown
25. Which of the following, if true, would most seriously weaken the author’s assertion in lines 54–58 ?
- (A) Because they were poorly administered, Cromwell’s overseas military expeditions were doomed to failure.
 - (B) Because it relied primarily on the symbolic presence of the military, garrison government could be effectively administered with a relatively small number of troops.
 - (C) Until early in the seventeenth century, no professional standing army in Europe had performed effectively in overseas military expeditions.
 - (D) Many of the colonial governors appointed by the crown were also commissioned army officers.
 - (E) Many of the English troops stationed in the American colonies were veterans of other overseas military expeditions.
26. According to Webb’s view of colonial history, which of the following was (were) true of the merchants and nobility mentioned in line 30 ?
- I. They were opposed to policies formulated by Charles II that would have transformed the colonies into capitalistic oligarchies.
 - II. They were opposed to attempts by the English crown to limit the power of the legislative assemblies.
 - III. They were united with small farmers in their opposition to the stationing of English troops in the colonies.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
27. The author suggests that if William III had wanted to make use of the standing army mentioned in line 52 to administer garrison government in the American colonies, he would have had to
- (A) make peace with France
 - (B) abolish the colonial legislative assemblies
 - (C) seek approval from the English Parliament
 - (D) appoint colonial governors who were more sympathetic to royal policy
 - (E) raise additional revenues by increasing taxation of large landholdings in the colonies

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7. In an experiment, two hundred mice of a strain that is normally free of leukemia were given equal doses of radiation. Half the mice were then allowed to eat their usual foods without restraint, while the other half were given adequate but limited amounts of the same foods. Of the first group, fifty-five developed leukemia; of the second, only three.

The experiment above best supports which of the following conclusions?

- (A) Leukemia inexplicably strikes some individuals from strains of mice normally free of the disease.
- (B) The incidence of leukemia in mice of this strain which have been exposed to the experimental doses of radiation can be kept down by limiting their intake of food.
- (C) Experimental exposure to radiation has very little effect on the development of leukemia in any strain of mice.
- (D) Given unlimited access to food, a mouse eventually settles on a diet that is optimum for its health.
- (E) Allowing mice to eat their usual foods increases the likelihood that the mice will develop leukemia whether or not they have been exposed to radiation.

8. Children born blind or deaf and blind begin social smiling on roughly the same schedule as most children, by about three months of age.

The information above provides evidence to support which of the following hypotheses?

- (A) For babies, the survival advantage of smiling consists in bonding the caregiver to the infant.
- (B) Babies do not smile when no one else is present.
- (C) The smiling response depends on an inborn trait determining a certain pattern of development.
- (D) Smiling between persons basically signals a mutual lack of aggressive intent.
- (E) When a baby begins smiling, its caregivers begin responding to it as they would to a person in conversation.

9. Restoration of the original paint colors in Colonial-era rooms has until now relied on the technique of scraping paint in a small area down to the chronological level that represents the paint layer of the Colonial period and then matching the color found at that level. This color was most often the color of putty.

Which of the following, if true, most seriously weakens the validity of the procedure described above?

- (A) If the scraping is too deep, a scratch will be made in the surface of the original paint.
- (B) In the Colonial period, it was customary to paint all the walls of a room the same solid color.
- (C) It is possible to distinguish the paint used in stenciled border designs, such as those used in the Colonial period, from the underlying paint layer.
- (D) The original colors were altered over the years by reactions with air, light, and dirt to become putty-colored.
- (E) Contemporary paint materials include many that did not exist in Colonial times.

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23. Recent surveys show that many people who seek medical help are under a great deal of stress. Medical research also shows that stress can adversely affect an individual's immune system, which is responsible for combating many infections. Thus when a person is under stress, he or she is more likely to become ill.

Which of the following, if true, would most strengthen the conclusion above?

- (A) Many businesses that provide health insurance for their employees also provide seminars on stress management.
- (B) Many businesses report a significant decrease in absenteeism during periods when employees feel pressured by management.
- (C) There is a marked decrease in the number of complaints presented at college infirmaries during vacation time.
- (D) There is a marked increase in the number of illnesses treated at college infirmaries around the time of examinations.
- (E) Most people report that being in a hospital or an infirmary is a stressful situation.

24. Although compact cars make up only 38 percent of the vehicles in traffic, 48 percent of the cars that are followed too closely ("tailgated") are compact. On the other hand, fewer than 27 percent of the cars tailgated are middle-sized, even though middle-sized cars make up 31 percent of the vehicles in traffic.

Which of the following, if true, most contributes to an explanation for the phenomenon described above?

- (A) The shape of compact cars makes it easy for a tailgater to see far enough ahead around such cars to minimize the chances of a rear-end collision.
- (B) Middle-sized cars, owned by families with children and pets, are likely to have bumper stickers that are so interesting to read that tailgaters stay behind such cars longer.
- (C) Compact cars sometimes have superior engines that allow them to pass middle-sized cars on the highway easily.
- (D) The percentage of cars on the highway that are middle-sized has been steadily decreasing over the last decade.
- (E) Compact cars are often driven by fast drivers.

25. As part of a delicately balanced system, the human heart secretes a hormone, a substance that controls the amount of salt in the blood and the volume of blood circulating within the body. Only very small quantities of the hormone are required. This hormone is extremely important in regulating blood pressure and is found in large amounts in the blood of those suffering a heart attack.

If the statements above are true, then it must also be true that

- (A) if there is a deficiency in the amount of heart hormone secreted, low blood pressure will result
- (B) it is large quantities of the heart hormone that cause heart attacks to occur
- (C) the effects of a small amount of the heart hormone will be long-lasting in the body
- (D) if a device that is only a mechanical pump is used as an artificial heart, it will not perform all the functions of the human heart
- (E) any drug that regulates blood pressure will have its effect by influencing the amount of the heart hormone secreted