GMAT/GRE/SAT Reading Comprehension
GMAT/GRE/SAT 閱讀全真題及答案 (5)
compiled by David Pai

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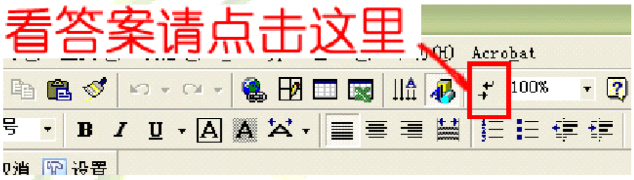

Eight percent of the Earth's crust is aluminum, and there are hundreds of aluminum-bearing minerals and vast quantities of the rocks that contain them. The best aluminum ore is bauxite, defined as aggregates of aluminous minerals, more or less impure, in which aluminum is present as hydrated oxides. 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

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 is 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 thesis. 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?

(A) The approach of psychohistorians to historical study is currently in vogue even though it lacks the rigor and verifiabil

ity of traditional historical method.
(B) Traditional historians can benefit from studying the techniques and findings of psychohistorians.
(C) Areas of sociological study such as childhood and work are of little interest to traditional historians.
(D) The psychological assessment of an individual's behavior and attitudes is more informative than the details of his or her daily life.
(E) 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
(A) views past events as complex and having their own individuality
(B) relies on a single interpretation of human behavior to explain historical events
(C) interprets historical events in such a way that their specific nature is transcended
(D) turns to psychological explanations in historical contexts to account for events
(E) 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
(A) presenting their material in chronological order
(B) producing a one-sided picture of an individual's personality and motivations
(C) uncovering alternative explanations that might cause them to question their own conclusions
(D) offering a consistent interpretation of the impact of personality on historical events
(E) recognizing connections between a government's political actions and the aspirations of government leaders

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 statement 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.

SECTION B

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.

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

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 deve

lop

(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 under-funded

(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

No. 7-3

SECTION A

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 explanation 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.

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 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 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 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 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, 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 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 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, a natural selection never promotes a purely less advantageous variation. As other explanations 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 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

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 3738)

(D) "adaptively significant" (lines 48-49)

(E) "evolutionary red herring" (line 54)

SECTION B

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

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 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 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 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 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 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 point 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 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 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 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 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 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 o n 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.

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.

No. 8-1

SECTION A

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.

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.

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

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 Bardeche, 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*.

21. The passage is primarily concerned with
    (A) the role of involuntary memory in Proust's writing
    (B) evidence concerning the genesis of Proust's novel *Remembrance of Things Past*
    (C) conflicting scholarly opinions about the value of studying the drafts of *Remembrance of Things Past*
    (D) Proust's correspondence and what it reveals about *Remembrance of Things Past*
    (E) the influence of Saint-Beuve's criticism on Proust's novel *Remembrance of Things Past*

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:
    (A) Bardeche
    (B) Bonnet
    (C) Fallois
    (D) Kolb
    (E) Vallette

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

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) Bardeche'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.

SECTION B

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 Texas 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.

This passage was adapted from an article published in 2019.

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 antiserums 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 antiserums are present. The immunological method of detecting peptide hormones by means of antiserums, however, is imprecise. Cross-reactions are possible and this method cannot determine whether the substances detected by the antiserums really are 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 antiserums 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.

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 antiserums 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 antiserums 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

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

No. 8-2

SECTION A

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 Dvorak 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.

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.

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. 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 fi gures. 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 counterpart in the right hand.

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

19. According to the passage, Ralph Vaughan Williams, Anton Dvorak, 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

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.

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.

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.

SECTION B

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.

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 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

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.

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.

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 Gunz, Mindel, Riss, and Wurm. 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 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 day, 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

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

No. 8-3

SECTION A

(This passage is excerpted from an article that was published in 2011.)

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.

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 ast onishing 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.

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℃. No bacteria 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 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 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 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 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?

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.

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 satiated and those who appear to be shamelessly gorging. Undoubtedly such elements 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.

SECTION B

(This passage is from a book published in 2015.)

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.

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."

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."

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.

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

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.

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

No. 9-1

SECTION A

Many critics of Emily Bronte'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.*

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.

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 Bronte.
    (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

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.

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.

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

SECTION B

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.

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?

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 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 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 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.

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 Parliaments price for doing so was to keep the army under tight legislative control. 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.

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.

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

No. 9-2

SECTION A

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.

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

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's 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. Colonno, 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, Colonno 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, Colonno injected human cells into mice, which did produce an antibody to the co mmon 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

25. It can be inferred from the passage that the purpose of Colonno'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) Colonno'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.

SECTION B

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.

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

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

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

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 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 i nevitable 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.

In contrast, the "colonialist" approach of island-based writers such as Eduardo Seda-Bonilla, Manuel Maldonado-Denis, and Luis Nieves-Falcon tends to view assimilation as the forced loss of national culture in an unequal contest with imposed foreign values. There is, of course, a strong tradition of cultural accommodation among other Puerto Rican thinkers. The writings of Eugenio Fernandez Mendez 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 colonial nationalities.

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 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.

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 Fernandez Mendez 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.

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

No. 9-3

SECTION A

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 that 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

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.

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 questions 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

SECTION B

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 Wiehle'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 Wiehle'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.

"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 naive 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

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 compositions 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

No. 9-4

SECTION A

(The article from which the passage was taken appeared in 2019.)

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.

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.

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 societ y 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.

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

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 eighteen 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 America 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.

SECTION B

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 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?

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 2010. Watanabe noticed that a male rabbit in his colony had ten times the normal concentration of cholesterol in its blood. By appropriate breeding, Watanabe obtained a strain of rabbits that had very high cholesterol levels. These rabbit s spontaneously developed heart disease. To his surprise, Watanabe further found that the rabbits, like humans with familial hypercholesterolemia, lacked LDL receptors. Thus, scientists could study these Watanabe rabbits to gain a better understanding of familial hypercholesterolemia in humans.

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 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 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 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?

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.

(The article from which this passage was taken appeared in 2011.)

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.

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."

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 he 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

No. 9-5

SECTION A

Zooplankton, tiny animals adapted to an existence in the ocean, have evolved clever mechanisms for obtaining their food, miniscule phytoplankton (plant plankton). 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 in habiting 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 oceans of the world, including the Arctic Ocean, appendicularians tend to remain near the water's surface where the density of phytoplankton is greatest.

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 he water pressure deeper in the ocean

(E) eat food that grows more profusely near the surface

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.

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.

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.

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. 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

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

SECTION B

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.

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 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 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

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 $1.4M_\odot$, 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 nebulas. 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 nebulas 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 nebulas"—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 nebulas
   (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.

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 exhaust

ed 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 NH_3 in the circumstellar clouds of stars similar to IRC+10216 have led astronomers to believe that the formation of planetary nebulas 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

No. 9-6

SECTION A

(This passage is from an article published in 2013)

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 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 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 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

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

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

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

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 conde nsed 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.

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 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 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 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 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 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 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?

I. They are products of volcanic activity.

II. They derive from a planet larger than Earth.

III. 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?
    (A) There are fewer large planets in the solar system than there are asteroids.
    (B) Most large planets have been volcanically inactive for more than a billion years.
    (C) The gravitational pull of a large planet would probably prohibit fragments from escaping its orbit.
    (D) There are no chondrites occurring naturally on Earth and probably none on other large planets.
    (E) 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
    (A) still entirely undetermined
    (B) less than that of most other achondrites
    (C) about 3.5 billion years
    (D) the same as that of typical achondrites
    (E) greater than that of the Earth

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

SECTION B

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 transplantations 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.

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

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.

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 excitem ent. 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.

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

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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SECTION A

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.

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.

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, 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*.

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 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 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 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.

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

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.

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 line 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 line 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.

SECTION B

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, deat h, 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

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.

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. 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.

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. 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.

21. The author of the passage is primarily concerned with discussing
(A) the current debate on whether the morphological attributes of wind-pollinated plants are evolutionary adaptations

(B) the kinds of airflow patterns that permit wind-pollinated plants to capture pollen most efficiently

(C) the ways in which the reproductive processes of wind-pollinated plants are controlled by random events

(D) a recently proposed explanation of a way in which wind-pollinated plants reduce pollen waste

(E) 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

(A) debatable and misleading

(B) ingenious and convincing

(C) accurate but incomplete

(D) intriguing but controversial

(E) plausible but unverifiable

23. According to the passage, the "aerodynamic environments" mentioned in line 23, when they are produced, are primarily determined by the

(A) presence of insects near the plant

(B) physical properties of the plant's pollen

(C) shape of the plant's female reproductive organs

(D) amount of pollen generated by the plant

(E) 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?

I. The release can be affected by certain environmental factors.

II. The amount of pollen released increases on a rainy day.

III. Pollen is sometimes not released by plants when there is little wind.

(A) II only

(B) III only

(C) I and II only

(D) I and III only

(E) I, II, and III

25. The passage suggests that the recent studies cited in lines 19-21 have <u>not</u> 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.

2010年10月

SECTION A

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.

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 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 studies, however, failed to link unequivocally terrestrial climate and the solar-activity cycle, or even to confirm the cycle's past existence.

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 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 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 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.

19. According to the passage, late seventeenth and early eighteenth-century Chinese records are important for which of the following reasons?

(A) They suggest that the data on which the Maunder minimum was predicated were incorrect.

(B) They suggest that the Maunder minimum cannot be related to climate.

(C) They suggest that the Maunder minimum might be valid only for Europe.

(D) They establish the existence of a span of unusually cold weather worldwide at the time of the Maunder minimum.

(E) 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?

(A) It best supports the model of solar activity described in lines 37-45.

(B) It best supports the model of solar activity described in lines 45-52.

(C) It is insufficient to confirm either model of solar activity described in the third paragraph.

(D) It contradicts both models of solar activity as they are presented in the third paragraph.

(E) 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?

(A) Episodes of intense volcanic eruptions in the distant past occurred in cycles having very long periodicities.

(B) At the present time the global level of thunderstorm activity increases and decreases in cycles with periodicities of approximately 11 years.

(C) In the distant past cyclical climatic changes had periodicities of longer than 200 years.

(D) 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.

(E) 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

(A) are ambiguous because most sunspots cannot be seen with the naked eye

(B) probably were made under the same weather conditions as those made in Europe

(C) are more reliable than European observations made during this period

(D) record some sunspot activity during this period

(E) 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?

(A) The solar-activity cycle existed in its present form during the time period in which the tree rings grew.

(B) The biological mechanisms causing tree growth are unaffected by short-term weather patterns.

(C) Average tree-ring thickness varies from species to species.

(D) Tree-ring thicknesses reflect changes in terrestrial climate.

(E) Both terrestrial climate and the solar-activity cycle randomly affect tree-ring thickness.

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 <u>his own</u>." 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.

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.

SECTION B

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.

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.

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 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.

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 it 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

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.

(This passage is excerpted from an article that was published in 2019.)

Warm-blooded animals have elaborate physiological controls to maintain constant body temperature (in humans, 37℃). 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—substances that bind iron—in bacteria of the genus *Salmonella* declined at environmental temperatures above 37℃ and stopped at 40.3℃. 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 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℃ than at 37℃, even though healthy animals prefer the lower temperature. When animals at 42℃ were injected with an iron solution, however, mortality rates increased significantly. 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℃ than they are at a temperature of 42℃.

(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℃

2011年02月

SECTION A

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.

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

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

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.

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

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.

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.