



GMAT RC 117 Passages—, GMAT New 63 Passages

Passage 1 (1/63)

(This passage was written in 1978.)

Recent years have brought minority-owned businesses in the United States unprecedented opportunities—as well as new and significant risks. Civil rights activists have long argued that one of the principal reasons why Blacks, Hispanics, and other minority groups have difficulty establishing themselves in business is that they lack access to the sizable orders and subcontracts that are generated by large companies. Now Congress, in apparent agreement, has required by law that businesses awarded federal contracts of more than \$500,000 do their best to find minority subcontractors and record their efforts to do so on forms filed with the government. Indeed, some federal and local agencies have gone so far as to set specific percentage goals for apportioning parts of public works contracts to minority enterprises.

Corporate response appears to have been substantial. According to figures collected in 1977, the total of corporate contracts with minority businesses rose from \$77 million in 1972 to \$1.1 billion in 1977. The projected total of corporate contracts with minority businesses for the early 1980's is estimated to be over 53 billion per year with no letup anticipated in the next decade. Promising as it is for minority businesses, this increased patronage poses dangers for them, too. First, minority firms risk expanding too fast and overextending themselves financially, since most are small concerns and, unlike large businesses, they often need to make substantial investments in new plants, staff, equipment, and the like in order to perform work subcontracted to them. If, thereafter, their subcontracts are for some reason reduced, such firms can face potentially crippling fixed expenses. The world of corporate purchasing can be frustrating for small entrepreneurs who get requests for elaborate formal estimates and bids. Both consume valuable time and resources, and a small company's efforts must soon result in orders, or both the morale and the financial health of the business will suffer.

A second risk is that White-owned companies may seek to cash in on the increasing apportionments through formation of joint ventures with minority-owned concerns. Of course, in many instances there are legitimate reasons for joint ventures; clearly, White and minority enterprises can **team up** to acquire business that neither could acquire alone. But civil rights groups and minority business owners have complained to Congress about minorities being set up as "**fronts**" with White backing, rather than being accepted as full partners in legitimate joint ventures.

Third, a minority enterprise that secures the business of one large corporate customer often runs the danger of becoming—and remaining—dependent. Even in the best of circumstances, fierce competition from larger, more established companies makes it difficult for small concerns to broaden their customer bases: when such firms have nearly guaranteed orders from a single corporate benefactor, they may truly have to struggle against complacency arising from their current success.

1. The primary purpose of the passage is to
 - (A) present a commonplace idea and its inaccuracies
 - (B) describe a situation and its potential drawbacks
 - (C) propose a temporary solution to a problem
 - (D) analyze a frequent source of disagreement
 - (E) explore the implications of a finding
2. The passage supplies information that would answer which of the following questions?
 - (A) What federal agencies have set percentage goals for the use of minority-owned businesses in public works contracts?
 - (B) To which government agencies must businesses awarded federal contracts report their efforts to find minority subcontractors?
 - (C) How widespread is the use of minority-owned concerns as “fronts” by White backers seeking to obtain subcontracts?
 - (D) How many more minority-owned businesses were there in 1977 than in 1972?
 - (E) What is one set of conditions under which a small business might find itself financially overextended?
3. According to the passage, civil rights activists maintain that one disadvantage under which minority-owned businesses have traditionally had to labor is that they have
 - (A) been especially vulnerable to governmental mismanagement of the economy
 - (B) been denied bank loans at rates comparable to those afforded larger competitors
 - (C) not had sufficient opportunity to secure business created by large corporations
 - (D) not been able to advertise in those media that reach large numbers of potential customers
 - (E) not had adequate representation in the centers of government power
4. The passage suggests that the failure of a large business to have its bids for subcontracts result quickly in orders might cause it to
 - (A) experience frustration but not serious financial harm
 - (B) face potentially crippling fixed expenses
 - (C) have to record its efforts on forms filed with the government
 - (D) increase its spending with minority subcontractors
 - (E) revise its procedure for making bids for federal contracts and subcontracts
5. The author implies that a minority-owned concern that does the greater part of its business with one large corporate customer should
 - (A) avoid competition with larger, more established concerns by not expanding

- (B) concentrate on securing even more business from that corporation
 - (C) try to expand its customer base to avoid becoming dependent on the corporation
 - (D) pass on some of the work to be done for the corporation to other minority-owned concerns
 - (E) use its influence with the corporation to promote subcontracting with other minority concerns
6. It can be inferred from the passage that, compared with the requirements of law, the percentage goals set by “some federal and local agencies” (lines 14-15) are
- (A) more popular with large corporations
 - (B) more specific
 - (C) less controversial
 - (D) less expensive to enforce
 - (E) easier to comply with
7. Which of the following, if true, would most weaken the author’s assertion that, in the 1970’s, corporate response to federal requirements [\(lines 18-19\)](#) was substantial
- (A) Corporate contracts with minority-owned businesses totaled \$2 billion in 1979.
 - (B) Between 1970 and 1972, corporate contracts with minority-owned businesses declined by 25 percent.
 - (C) The figures collected in 1977 underrepresented the extent of corporate contracts with minority-owned businesses.
 - (D) The estimate of corporate spending with minority-owned businesses in 1980 is approximately \$10 million too high.
 - (E) The \$1.1 billion represented the same percentage of total corporate spending in 1977 as did \$77 million in 1972.
8. The author would most likely agree with which of the following statements about corporate response to working with minority subcontractors?
- (A) Annoyed by the proliferation of “front” organizations, corporations are likely to reduce their efforts to work with minority-owned subcontractors in the near future.
 - (B) Although corporations showed considerable interest in working with minority businesses in the 1970’s, their aversion to government paperwork made them reluctant to pursue many government contracts.
 - (C) The significant response of corporations in the 1970’s is likely to be sustained and conceivably be increased throughout the 1980’s.
 - (D) Although corporations are eager to cooperate with minority-owned businesses, a shortage of capital in the 1970’s made substantial response impossible.

- (E) The enormous corporate response has all but eliminated the dangers of over-expansion that used to plague small minority-owned businesses.

Passage 2 (2/63)

Woodrow Wilson was referring to the liberal idea of the economic market when he said that the free enterprise system is the most efficient economic system. Maximum freedom means maximum productiveness; our “openness” is to be the measure of our stability. Fascination with this ideal has made Americans defy the “Old World” categories of settled possessiveness *versus* unsettling deprivation, the cupidity of retention *versus* the cupidity of seizure, a “status quo” defended *or* attacked. The United States, it was believed, had no *status quo ante*. Our only “station” was the turning of a stationary wheel, spinning faster and faster. We did not base our system on property but opportunity—which meant we based it not on stability but on mobility. The more things changed, that is, the more rapidly the wheel turned, the steadier we would be. The conventional picture of class politics is composed of the Haves, who want a stability to keep what they have, and the Have-Nots, who want a touch of instability and change in which to scramble for the things they have not. But Americans imagined a condition in which speculators, self-makers, runners are always using the new opportunities given by our land. These economic leaders (front-runners) would thus be mainly agents of change. The nonstarters were considered the ones who wanted stability, a strong referee to give them some position in the race, a regulative hand to calm manic speculation; an authority that can call things to a halt, begin things again from compensatorily staggered “starting lines.”

“Reform” in America has been sterile because it can imagine no change except through the extension of this metaphor of a race, wider inclusion of competitors, “a piece of the action,” as it were, for the disenfranchised. There is no attempt to call off the race. Since our only stability is change, America seems not to honor the quiet work that achieves social interdependence and stability. There is, in our legends, no heroism of the office clerk, no stable industrial work force of the people who actually make the system work. There is no pride in being an employee (Wilson asked for a return to the time when everyone was an employer). There has been no boasting about our social workers—they are merely signs of the system’s failure, of opportunity denied or not taken, of things to be eliminated. We have no pride in our growing interdependence, in the fact that our system can serve others, that we are able to help those in need; empty boasts from the past make us ashamed of our present achievements, make us try to forget or deny them, move away from them. There is no honor but in the Wonderland race we must all run, all trying to win, none winning in the end (for there is no end).

1. The primary purpose of the passage is to
 - (A) criticize the inflexibility of American economic mythology
 - (B) contrast “Old World” and “New World” economic ideologies
 - (C) challenge the integrity of traditional political leaders
 - (D) champion those Americans whom the author deems to be neglected
 - (E) suggest a substitute for the traditional metaphor of a race
2. According to the passage, “Old World” values were based on

- (A) ability
 - (B) property
 - (C) family connections
 - (D) guild hierarchies
 - (E) education
3. In the context of the author's discussion of regulating change, which of the following could be most probably regarded as a "strong referee" ([line 30](#)) in the United States?
- (A) A school principal
 - (B) A political theorist
 - (C) A federal court judge
 - (D) A social worker
 - (E) A government inspector
4. The author **sets off** the word "Reform" ([line 35](#)) with quotation marks in order to
- (A) emphasize its departure from the concept of settled possessiveness
 - (B) show his support for a systematic program of change
 - (C) underscore the flexibility and even amorphousness of United States society
 - (D) indicate that the term was one of Wilson's favorites
 - (E) assert that reform in the United States has not been fundamental
5. It can be inferred from the passage that the author most probably thinks that giving the disenfranchised "a piece of the action" ([line 38](#)) is
- (A) a compassionate, if misdirected, legislative measure
 - (B) an example of Americans' resistance to profound social change
 - (C) an innovative program for genuine social reform
 - (D) a monument to the efforts of industrial reformers
 - (E) a surprisingly "Old World" remedy for social ills
6. Which of the following metaphors could the author most appropriately use to summarize his own assessment of the American economic system ([lines 35-60](#))?
- (A) A windmill
 - (B) A waterfall
 - (C) A treadmill
 - (D) A gyroscope
 - (E) A bellows
7. It can be inferred from the passage that Woodrow Wilson's ideas about the economic market
- (A) encouraged those who "make the system work" ([lines 45-46](#))
 - (B) perpetuated traditional legends about America

- (C) revealed the prejudices of a man born wealthy
(D) foreshadowed the stock market crash of 1929
(E) began a tradition of presidential proclamations on economics
8. The passage contains information that would answer which of the following questions?
- I. What techniques have industrialists used to manipulate a free market?
II. In what ways are “New World” and “Old World” economic policies similar?
III. Has economic policy in the United States tended to reward independent action?
- (A) I only
(B) II only
(C) III only
(D) I and II only
(E) II and III only
9. Which of the following best expresses the author’s main point?
- (A) Americans’ pride in their jobs continues to give them stamina today.
(B) The absence of a *status quo ante* has undermined United States economic structure.
(C) The free enterprise system has been only a useless concept in the United States.
(D) The myth of the American free enterprise system is seriously flawed.
(E) Fascination with the ideal of “openness” has made Americans a progressive people.

Passage 3 (3/63)

No very satisfactory account of the mechanism that caused the formation of the ocean basins has yet been given. The traditional view supposes that the upper mantle of the earth behaves as a liquid when it is subjected to small forces for long periods and that differences in temperature under oceans and continents are sufficient to produce convection in the mantle of the earth with rising convection currents under the mid-ocean ridges and sinking currents under the continents. Theoretically, this convection would carry the continental plates along as though they were on a conveyor belt and would provide the forces needed to produce the split that occurs along the ridge. This view may be correct: it has the advantage that the currents are driven by temperature differences that themselves depend on the position of the continents. Such a back-coupling, in which the position of the moving plate has an impact on the forces that move it, could produce complicated and varying motions.

On the other hand, the theory is implausible because convection does not normally occur along lines, and it certainly does not occur along lines broken by frequent offsets or changes in direction, as the ridge is. Also it is difficult to see how the theory applies to the plate between

the Mid-Atlantic Ridge and the ridge in the Indian Ocean. This plate is growing on both sides, and since there is no intermediate trench, the two ridges must be moving apart. It would be odd if the rising convection currents kept exact pace with them. An alternative theory is that the sinking part of the plate, which is denser than the hotter surrounding mantle, pulls the rest of the plate after it. Again it is difficult to see how this applies to the ridge in the South Atlantic, where neither the African nor the American plate has a sinking part.

Another possibility is that the sinking plate cools the neighboring mantle and produces convection currents that move the plates. This last theory is attractive because it gives some hope of explaining the enclosed seas, such as the Sea of Japan. These seas have a typical oceanic floor, except that the floor is overlaid by several kilometers of sediment. Their floors have probably been sinking for long periods. It seems possible that a sinking current of cooled mantle material on the upper side of the plate might be the cause of such deep basins. The enclosed seas are an important feature of the earth's surface, and seriously require explanation because, in addition to the enclosed seas that are developing at present behind island arcs, there are a number of older ones of possibly similar origin, such as the Gulf of Mexico, the Black Sea, and perhaps the North Sea.

1. According to the traditional view of the origin of the ocean basins, which of the following is sufficient to move the continental plates?
 - (A) Increases in sedimentation on ocean floors
 - (B) Spreading of ocean trenches
 - (C) Movement of mid-ocean ridges
 - (D) Sinking of ocean basins
 - (E) Differences in temperature under oceans and continents
2. It can be inferred from the passage that, of the following, the deepest sediments would be found in the
 - (A) Indian Ocean
 - (B) Black Sea
 - (C) Mid-Atlantic
 - (D) South Atlantic
 - (E) Pacific
3. The author refers to a “conveyor belt” in [line 13](#) in order to
 - (A) illustrate the effects of convection in the mantle
 - (B) show how temperature differences depend on the positions of the continents
 - (C) demonstrate the linear nature of the Mid-Atlantic Ridge
 - (D) describe the complicated motions made possible by back-coupling
 - (E) account for the rising currents under certain mid-ocean ridges
3. The author regards the traditional view of the origin of the oceans with
 - (A) slight apprehension
 - (B) absolute indifference

- (C) indignant anger
 - (D) complete disbelief
 - (E) guarded skepticism
4. According to the passage, which of the following are separated by a plate that is growing on both sides?
- (A) The Pacific Ocean and the Sea of Japan
 - (B) The South Atlantic Ridge and the North Sea Ridge
 - (C) The Gulf of Mexico and the South Atlantic Ridge
 - (D) The Mid-Atlantic Ridge and the Indian Ocean Ridge
 - (E) The Black Sea and the Sea of Japan
5. Which of the following, if it could be demonstrated, would most support the traditional view of ocean formation?
- (A) Convection usually occurs along lines.
 - (B) The upper mantle behaves as a dense solid.
 - (C) Sedimentation occurs at a constant rate.
 - (D) Sinking plates cool the mantle.
 - (E) Island arcs surround enclosed seas.
6. According to the passage, the floor of the Black Sea can best be compared to a
- (A) rapidly moving conveyor belt
 - (B) slowly settling foundation
 - (C) rapidly expanding balloon
 - (D) violently erupting volcano
 - (E) slowly eroding mountain
7. Which of the following titles would best describe the content of the passage?
- (A) A Description of the Oceans of the World
 - (B) Several Theories of Ocean Basin Formation
 - (C) The Traditional View of the Oceans
 - (D) Convection and Ocean Currents
 - (E) Temperature Differences among the Oceans of the World

Passage 4 (4/63)

The fossil remains of the first flying vertebrates, the pterosaurs, have intrigued paleontologists for more than two centuries. How such large creatures, which weighed in some cases as much as a piloted hang-glider and had wingspans from 8 to 12 meters, solved the problems of powered flight, and exactly what these creatures were—reptiles or birds—are among the questions scientists have puzzled over.

Perhaps the least controversial assertion about the pterosaurs is that they were reptiles.

Their skulls, pelvises, and hind feet are reptilian. The anatomy of their wings suggests that they did not evolve into the class of birds. In pterosaurs a greatly elongated fourth finger of each forelimb supported a wing-like membrane. The other fingers were short and reptilian, with sharp claws. In birds the second finger is the principal strut of the wing, which consists primarily of feathers. If the pterosaurs walked on all fours, the three short fingers may have been employed for grasping. When a pterosaur walked or remained stationary, the fourth finger, and with it the wing, could only turn upward in an extended inverted V-shape along each side of the animal's body.

The pterosaurs resembled both birds and bats in their overall structure and proportions. This is not surprising because the design of any flying vertebrate is subject to aerodynamic constraints. Both the pterosaurs and the birds have hollow bones, a feature that represents a savings in weight. In the birds, however, these bones are reinforced more massively by internal struts.

Although scales typically cover reptiles, the pterosaurs probably had hairy coats. T. H. Huxley reasoned that flying vertebrates must have been warm-blooded because flying implies a high rate of metabolism, which in turn implies a high internal temperature. Huxley speculated that a coat of hair would insulate against loss of body heat and might streamline the body to reduce drag in flight. The recent discovery of a pterosaur specimen covered in long, dense, and relatively thick hairlike fossil material was the first clear evidence that his reasoning was correct.

Efforts to explain how the pterosaurs became airborne have led to suggestions that they launched themselves by jumping from cliffs, by dropping from trees, or even by rising into light winds from the crests of waves. Each hypothesis has its difficulties. The first wrongly assumes that the pterosaurs' hind feet resembled a bat's and could serve as hooks by which the animal could hang in preparation for flight. The second hypothesis seems unlikely because large pterosaurs could not have landed in trees without damaging their wings. The third calls for high waves to channel updrafts. The wind that made such waves however, might have been too strong for the pterosaurs to control their flight once airborne.

1. It can be inferred from the passage that scientists now generally agree that the
 - (A) enormous wingspan of the pterosaurs enabled them to fly great distances
 - (B) structure of the skeleton of the pterosaurs suggests a close evolutionary relationship to bats
 - (C) fossil remains of the pterosaurs reveal how they solved the problem of powered flight
 - (D) pterosaurs were reptiles
 - (E) pterosaurs walked on all fours
2. The author views the idea that the pterosaurs became airborne by rising into light winds created by waves as
 - (A) revolutionary
 - (B) unlikely
 - (C) unassailable
 - (D) probable

- (E) outdated
3. According to the passage, the skeleton of a pterosaur can be distinguished from that of a bird by the
- (A) size of its wingspan
 - (B) presence of hollow spaces in its bones
 - (C) anatomic origin of its wing strut
 - (D) presence of hooklike projections on its hind feet
 - (E) location of the shoulder joint joining the wing to its body
4. The ideas attributed to T. H. Huxley in the passage suggest that he would most likely agree with which of the following statements?
- (A) An animal's brain size has little bearing on its ability to master complex behaviors.
 - (B) An animal's appearance is often influenced by environmental requirements and physical capabilities.
 - (C) Animals within a given family group are unlikely to change their appearance dramatically over a period of time.
 - (D) The origin of flight in vertebrates was an accidental development rather than the outcome of specialization or adaptation.
 - (E) The pterosaurs should be classified as birds, not reptiles.
5. It can be inferred from the passage that which of the following is characteristic of the pterosaurs?
- (A) They were unable to fold their wings when not in use.
 - (B) They hung upside down from branches as bats do before flight.
 - (C) They flew in order to capture prey.
 - (D) They were an early stage in the evolution of the birds.
 - (E) They lived primarily in a forest-like habitat.
6. Which of the following best describes the organization of the last paragraph of the passage?
- (A) New evidence is introduced to support a traditional point of view.
 - (B) Three explanations for a phenomenon are presented, and each is disputed by means of specific information.
 - (C) Three hypotheses are outlined, and evidence supporting each is given.
 - (D) Recent discoveries are described, and their implications for future study are projected.
 - (E) A summary of the material in the preceding paragraphs is presented, and conclusions are drawn.
7. It can be inferred from the passage that some scientists believe that pterosaurs
- (A) lived near large bodies of water

- (B) had sharp teeth for tearing food
- (C) were attacked and eaten by larger reptiles
- (D) had longer tails than many birds
- (E) consumed twice their weight daily to maintain their body temperature

Passage 5 (5/63)

How many really suffer as a result of labor market problems? This is one of the most critical yet contentious social policy questions. In many ways, our social statistics exaggerate the degree of hardship. Unemployment does not have the same dire consequences today as it did in the 1930's when most of the unemployed were primary breadwinners, when income and earnings were usually much closer to the margin of subsistence, and when there were no countervailing social programs for those failing in the labor market. Increasing affluence, the rise of families with more than one wage earner, the growing predominance of secondary earners among the unemployed, and improved social welfare protection have unquestionably mitigated the consequences of joblessness. Earnings and income data also overstate the dimensions of hardship. Among the millions with hourly earnings at or below the minimum wage level, the overwhelming majority are from multiple-earner, relatively affluent families. Most of those counted by the poverty statistics are elderly or handicapped or have family responsibilities which keep them out of the labor force, so the poverty statistics are by no means an accurate indicator of labor market pathologies.

Yet there are also many ways our social statistics underestimate the degree of labor-market-related hardship. The unemployment counts exclude the millions of fully employed workers whose wages are so low that their families remain in poverty. Low wages and repeated or prolonged unemployment frequently interact to undermine the capacity for self-support. Since the number experiencing joblessness at some time during the year is several times the number unemployed in any month, those who suffer as a result of forced idleness can equal or exceed average annual unemployment, even though only a minority of the jobless in any month really suffer. For every person counted in the monthly unemployment tallies, there is another working part-time because of the inability to find full-time work, or else outside the labor force but wanting a job. Finally, income transfers in our country have always focused on the elderly, disabled, and dependent, neglecting the needs of the working poor, so that the dramatic expansion of cash and in-kind transfers does not necessarily mean that those failing in the labor market are adequately protected.

As a result of such contradictory evidence, it is uncertain whether those suffering seriously as a result of labor market problems number in the hundreds of thousands or the tens of millions, and, hence, whether high levels of joblessness can be tolerated or must be countered by job creation and economic stimulus. There is only one area of agreement in this debate—that the existing poverty, employment, and earnings statistics are inadequate for one their primary applications, measuring the consequences of labor market problems.

1. Which of the following is the principal topic of the passage?
 - (A) What causes labor market pathologies that result in suffering
 - (B) Why income measures are imprecise in measuring degrees of poverty

- (C) Which of the currently used statistical procedures are the best for estimating the incidence of hardship that is due to unemployment
- (D) Where the areas of agreement are among poverty, employment, and earnings figures
- (E) How social statistics give an unclear picture of the degree of hardship caused by low wages and insufficient employment opportunities
2. The author uses “labor market problems” in [lines 1-2](#) to refer to which of the following?
- (A) The overall causes of poverty
- (B) Deficiencies in the training of the work force
- (C) Trade relationships among producers of goods
- (D) Shortages of jobs providing adequate income
- (E) Strikes and inadequate supplies of labor
3. The author contrasts the 1930’s with the present in order to show that
- (A) more people were unemployed in the 1930’s
- (B) unemployment now has less severe effects
- (C) social programs are more needed now
- (D) there now is a greater proportion of elderly and handicapped people among those in poverty
- (E) poverty has increased since the 1930’s
4. Which of the following proposals best responds to the issues raised by the author?
- (A) Innovative programs using multiple approaches should be set up to reduce the level of unemployment.
- (B) A compromise should be found between the positions of those who view joblessness as an evil greater than economic control and those who hold the opposite view.
- (C) New statistical indices should be developed to measure the degree to which unemployment and inadequately paid employment cause suffering.
- (D) Consideration should be given to the ways in which statistics can act as partial causes of the phenomena that they purport to measure.
- (E) The labor force should be restructured so that it corresponds to the range of job vacancies.
5. The author’s purpose in citing those who are repeatedly unemployed during a twelve-month period is most probably to show that
- (A) there are several factors that cause the payment of low wages to some members of the labor force
- (B) unemployment statistics can underestimate the hardship resulting from joblessness

- (C) recurrent inadequacies in the labor market can exist and can cause hardships for individual workers
 - (D) a majority of those who are jobless at any one time do not suffer severe hardship
 - (E) there are fewer individuals who are without jobs at some time during a year than would be expected on the basis of monthly unemployment figures
6. The author states that the mitigating effect of social programs involving income transfers on the income level of low-income people is often not felt by
- (A) the employed poor
 - (B) dependent children in single-earner families
 - (C) workers who become disabled
 - (D) retired workers
 - (E) full-time workers who become unemployed
7. According to the passage, one factor that causes unemployment and earnings figures to overpredict the amount of economic hardship is the
- (A) recurrence of periods of unemployment for a group of low-wage workers
 - (B) possibility that earnings may be received from more than one job per worker
 - (C) fact that unemployment counts do not include those who work for low wages and remain poor
 - (D) establishment of a system of record-keeping that makes it possible to compile poverty statistics
 - (E) prevalence, among low-wage workers and the unemployed, of members of families in which others are employed
8. The conclusion stated in lines 33-39 about the number of people who suffer as a result of forced idleness depends primarily on the point that
- (A) in times of high unemployment, there are some people who do not remain unemployed for long
 - (B) the capacity for self-support depends on receiving moderate-to-high wages
 - (C) those in forced idleness include, besides the unemployed, both underemployed part-time workers and those not actively seeking work
 - (D) at different times during the year, different people are unemployed
 - (E) many of those who are affected by unemployment are dependents of unemployed workers
9. Which of the following, if true, is the best criticism of the author's argument concerning why poverty statistics cannot properly be used to show the effects of problems in the labor market?
- (A) A short-term increase in the number of those in poverty can indicate a shortage of jobs because the basic number of those unable to accept employment remains approximately constant.

- (B) For those who are in poverty as a result of joblessness, there are social programs available that provide a minimum standard of living.
- (C) Poverty statistics do not consistently agree with earnings statistics, when each is taken as a measure of hardship resulting from unemployment.
- (D) The elderly and handicapped categories include many who previously were employed in the labor market.
- (E) Since the labor market is global in nature, poor workers in one country are competing with poor workers in another with respect to the level of wages and the existence of jobs.

Passage 6 (6/63)

In the eighteenth century, Japan's feudal overlords, from the shogun to the humblest samurai, found themselves under financial stress. In part, this stress can be attributed to the overlords' failure to adjust to a rapidly expanding economy, but the stress was also due to factors beyond the overlords' control. Concentration of the samurai in castle-towns had acted as a stimulus to trade. Commercial efficiency, in turn, had put temptations in the way of buyers. Since most samurai had been reduced to idleness by years of peace, encouraged to engage in scholarship and martial exercises or to perform administrative tasks that took little time, it is not surprising that their tastes and habits grew expensive. Overlords' income, despite the increase in rice production among their tenant farmers, failed to keep pace with their expenses. Although shortfalls in overlords' income resulted almost as much from laxity among their tax collectors (the nearly inevitable outcome of hereditary office-holding) as from their higher standards of living, a misfortune like a fire or flood, bringing an increase in expenses or a drop in revenue, could put a domain in debt to the city rice-brokers who handled its finances. Once in debt, neither the individual samurai nor the shogun himself found it easy to recover.

It was difficult for individual samurai overlords to increase their income because the amount of rice that farmers could be made to pay in taxes was not unlimited, and since the income of Japan's central government consisted in part of taxes collected by the shogun from his huge domain, the government too was constrained. Therefore, the Tokugawa shoguns began to look to other sources for revenue. Cash profits from government-owned mines were already on the decline because the most easily worked deposits of silver and gold had been exhausted, although debasement of the coinage had compensated for the loss. Opening up new farmland was a possibility, but most of what was suitable had already been exploited and further reclamation was technically unfeasible. Direct taxation of the samurai themselves would be politically dangerous. This left the shoguns only commerce as a potential source of government income.

Most of the country's wealth, or so it seemed, was finding its way into the hands of city merchants. It appeared reasonable that they should contribute part of that revenue to ease the shogun's burden of financing the state. A means of obtaining such revenue was soon found by levying forced loans, known as *goyo-kin*; although these were not taxes in the strict sense, since they were irregular in timing and arbitrary in amount, they were high in yield. Unfortunately, they pushed up prices. Thus, regrettably, the Tokugawa shoguns' search for solvency for the government made it increasingly difficult for individual Japanese who lived on

fixed stipends to make ends meet.

1. The passage is most probably an excerpt from
 - (A) an economic history of Japan
 - (B) the memoirs of a samurai warrior
 - (C) a modern novel about eighteenth-century Japan
 - (D) an essay contrasting Japanese feudalism with its Western counterpart
 - (E) an introduction to a collection of Japanese folktales
2. Which of the following financial situations is most analogous to the financial situation in which Japan's Tokugawa shoguns found themselves in the eighteenth century?
 - (A) A small business borrows heavily to invest in new equipment, but is able to pay off its debt early when it is awarded a lucrative government contract.
 - (B) Fire destroys a small business, but insurance covers the cost of rebuilding.
 - (C) A small business is turned down for a loan at a local bank because the owners have no credit history.
 - (D) A small business has to struggle to meet operating expenses when its profits decrease.
 - (E) A small business is able to cut back sharply on spending through greater commercial efficiency and thereby compensate for a loss of revenue.
3. Which of the following best describes the attitude of the author toward the samurai discussed in [lines 11-16](#)?
 - (A) Warmly approving
 - (B) Mildly sympathetic
 - (C) Bitterly disappointed
 - (D) Harshly disdainful
 - (E) Profoundly shocked
4. According to the passage, the major reason for the financial problems experienced by Japan's feudal overlords in the eighteenth century was that
 - (A) spending had outdistanced income
 - (B) trade had fallen off
 - (C) profits from mining had declined
 - (D) the coinage had been sharply debased
 - (E) the samurai had concentrated in castle-towns
5. The passage implies that individual samurai did not find it easy to recover from debt for which of the following reasons?
 - (A) Agricultural production had increased.
 - (B) Taxes were irregular in timing and arbitrary in amount.

- (C) The Japanese government had failed to adjust to the needs of a changing economy.
- (D) The domains of samurai overlords were becoming smaller and poorer as government revenues increased.
- (E) There was a limit to the amount in taxes that farmers could be made to pay.
6. The passage suggests that, in eighteenth-century Japan, the office of tax collector
- (A) was a source of personal profit to the officeholder
- (B) was regarded with derision by many Japanese
- (C) remained within families
- (D) existed only in castle-towns
- (E) took up most of the officeholder's time
7. Which of the following could best be substituted for the word "This" in [line 47](#) without changing the meaning of the passage?
- (A) The search of Japan's Tokugawa shoguns for solvency
- (B) The importance of commerce in feudal Japan
- (C) The unfairness of the tax structure in eighteenth century Japan
- (D) The difficulty of increasing government income by other means
- (E) The difficulty experienced by both individual samurai and the shogun himself in extricating themselves from debt
8. The passage implies that which of the following was the primary reason why the Tokugawa shoguns turned to city merchants for help in financing the state?
- (A) A series of costly wars had depleted the national treasury.
- (B) Most of the country's wealth appeared to be in city merchants' hands.
- (C) Japan had suffered a series of economic reversals due to natural disasters such as floods.
- (D) The merchants were already heavily indebted to the shoguns.
- (E) Further reclamation of land would not have been economically advantageous.
9. According to the passage, the actions of the Tokugawa shoguns in their search for solvency for the government were regrettable because those actions
- (A) raised the cost of living by pushing up prices
- (B) resulted in the exhaustion of the most easily worked deposits of silver and gold
- (C) were far lower in yield than had originally been anticipated
- (D) did not succeed in reducing government spending
- (E) acted as a deterrent to trade

Between the eighth and eleventh centuries A. D., the Byzantine Empire **staged** an almost unparalleled economic and cultural revival, a recovery that is **all the more** striking because it followed a long period of severe internal decline. By the early eighth century, the empire had lost roughly two-thirds of the territory it had possessed in the year 600, and its remaining area was being raided by Arabs and Bulgarians, who **at times** threatened to take Constantinople and extinguish the empire altogether. The wealth of the state and its subjects was greatly diminished, and artistic and literary production had virtually ceased. By the early eleventh century, however, the empire had regained almost half of its lost possessions, its new frontiers were secure, and its influence extended far beyond its borders. The economy had recovered, the treasury was full, and art and scholarship had advanced.

To consider the Byzantine military, cultural, and economic advances as differentiated aspects of a single phenomenon is reasonable. After all, these three forms of progress have gone together in a number of states and civilizations. Rome under Augustus and fifth-century Athens provide the most obvious examples in antiquity. Moreover, an examination of the apparent sequential connections among military, economic, and cultural forms of progress might help explain the dynamics of historical change.

The common explanation of these apparent connections in the case of Byzantium would run like this: when the empire had turned back enemy raids on its own territory and had begun to raid and conquer enemy territory, Byzantine resources naturally expanded and more money became available to patronize art and literature. Therefore, Byzantine military achievements led to economic advances, which in turn led to cultural revival.

No doubt this hypothetical pattern did apply at times during the course of the recovery. Yet it is not clear that military advances invariably came first, economic advances second, and intellectual advances third. In the 860's the Byzantine Empire began to recover from Arab incursions so that by 872 the military balance with the Abbasid Caliphate had been permanently altered in the empire's favor. The beginning of the empire's economic revival, however, can be placed between 810 and 830. Finally, the Byzantine revival of learning appears to have begun even earlier. A number of notable scholars and writers appeared by 788 and, by the last decade of the eighth century, a cultural revival was **in full bloom**, a revival that lasted until the fall of Constantinople in 1453. Thus the commonly expected order of military revival followed by economic and then by cultural recovery was reversed in Byzantium. In fact, the revival of Byzantine learning may itself have influenced the subsequent economic and military expansion.

1. Which of the following best states the central idea of the passage?
 - (A) The Byzantine Empire was a unique case in which the usual order of military and economic revival preceding cultural revival was reversed.
 - (B) The economic, cultural, and military revival in the Byzantine Empire between the eighth and eleventh centuries was similar in its order to the sequence of revivals in Augustan Rome and fifth century Athens.
 - (C) After 810 Byzantine economic recovery spurred a military and, later, cultural expansion that lasted until 1453.
 - (D) The eighth-century revival of Byzantine learning is an inexplicable phenomenon, and its economic and military precursors have yet to be

discovered.

- (E) The revival of the Byzantine Empire between the eighth and eleventh centuries shows cultural rebirth preceding economic and military revival, the reverse of the commonly accepted order of progress.
2. The primary purpose of the second paragraph is which of the following?
- (A) To establish the uniqueness of the Byzantine revival
- (B) To show that Augustan Rome and fifth-century Athens are examples of cultural, economic, and military expansion against which all subsequent cases must be measured
- (C) To suggest that cultural, economic, and military advances have tended to be closely interrelated in different societies
- (D) To argue that, while the revivals of Augustan Rome and fifth-century Athens were similar, they are unrelated to other historical examples
- (E) To indicate that, wherever possible, historians should seek to make comparisons with the earliest chronological examples of revival
3. It can be inferred from the passage that by the eleventh century the Byzantine military forces
- (A) had reached their peak and begun to decline
- (B) had eliminated the Bulgarian army
- (C) were comparable in size to the army of Rome under Augustus
- (D) were strong enough to withstand the Abbasid Caliphate's military forces
- (E) had achieved control of Byzantine governmental structures
4. It can be inferred from the passage that the Byzantine Empire sustained significant territorial losses
- (A) in 600
- (B) during the seventh century
- (C) a century after the cultural achievements of the Byzantine Empire had been lost
- (D) soon after the revival of Byzantine learning
- (E) in the century after 873
5. In the third paragraph, the author most probably provides an explanation of the apparent connections among economic, military, and cultural development in order to
- (A) suggest that the process of revival in Byzantium accords with this model
- (B) set up an order of events that is then shown to be not generally applicable to the case of Byzantium
- (C) cast aspersions on traditional historical scholarship about Byzantium
- (D) suggest that Byzantium represents a case for which no historical precedent

- exists
- (E) argue that military conquest is the paramount element in the growth of empires
6. Which of the following does the author mention as crucial evidence concerning the manner in which the Byzantine revival began?
- (A) The Byzantine military revival of the 860's led to economic and cultural advances.
- (B) The Byzantine cultural revival lasted until 1453.
- (C) The Byzantine economic recovery began in the 900's.
- (D) The revival of Byzantine learning began toward the end of the eighth century.
- (E) By the early eleventh century the Byzantine Empire had regained much of its lost territory.
7. According to the author, "The common explanation" ([line 28](#)) of connections between economic, military, and cultural development is
- (A) revolutionary and too new to have been applied to the history of the Byzantine Empire
- (B) reasonable, but an antiquated theory of the nature of progress
- (C) not applicable to the Byzantine revival as a whole, but does perhaps accurately describe limited periods during the revival
- (D) equally applicable to the Byzantine case as a whole and to the history of military, economic, and cultural advances in ancient Greece and Rome
- (E) essentially not helpful, because military, economic, and cultural advances are part of a single phenomenon

Passage 8 (8/63)

Virtually everything astronomers know about objects outside the solar system is based on the detection of photons—quanta of electromagnetic radiation. Yet there is another form of radiation that permeates the universe: neutrinos. With (as its name implies) no electric charge, and negligible mass, the neutrino interacts with other particles so rarely that a neutrino can cross the entire universe, even traversing substantial aggregations of matter, without being absorbed or even deflected. Neutrinos can thus escape from regions of space where light and other kinds of electromagnetic radiation are blocked by matter. Furthermore, neutrinos carry with them information about the site and circumstances of their production: therefore, the detection of cosmic neutrinos could provide new information about a wide variety of cosmic phenomena and about the history of the universe.

But how can scientists detect a particle that interacts so infrequently with other matter? Twenty-five years passed between Pauli's hypothesis that the neutrino existed and its actual detection: since then virtually all research with neutrinos has been with neutrinos created artificially in large particle accelerators and studied under neutrino microscopes. But a neutrino telescope, capable of detecting cosmic neutrinos, is difficult to construct. No apparatus can

detect neutrinos unless it is extremely massive, because great mass is synonymous with huge numbers of nucleons (neutrons and protons), and the more massive the detector, the greater the probability of one of its nucleon's reacting with a neutrino. In addition, the apparatus must be sufficiently shielded from the interfering effects of other particles.

Fortunately, a group of astrophysicists has proposed a means of detecting cosmic neutrinos by harnessing the mass of the ocean. Named DUMAND, for Deep Underwater Muon and Neutrino Detector, the project calls for placing an array of light sensors at a depth of five kilometers under the ocean surface. The detecting medium is the seawater itself: when a neutrino interacts with a particle in an atom of seawater, the result is a cascade of electrically charged particles and a flash of light that can be detected by the sensors. The five kilometers of seawater above the sensors will shield them from the interfering effects of other high-energy particles raining down through the atmosphere.

The strongest motivation for the DUMAND project is that it will exploit an important source of information about the universe. The extension of astronomy from visible light to radio waves to x-rays and gamma rays never failed to lead to the discovery of unusual objects such as radio galaxies, quasars, and pulsars. Each of these discoveries came as a surprise. Neutrino astronomy will doubtless bring its own share of surprises.

1. Which of the following titles best summarizes the passage as a whole?
 - (A) At the Threshold of Neutrino Astronomy
 - (B) Neutrinos and the History of the Universe
 - (C) The Creation and Study of Neutrinos
 - (D) The DUMAND System and How It Works
 - (E) The Properties of the Neutrino
2. With which of the following statements regarding neutrino astronomy would the author be most likely to agree?
 - (A) Neutrino astronomy will supersede all present forms of astronomy.
 - (B) Neutrino astronomy will be abandoned if the DUMAND project fails.
 - (C) Neutrino astronomy can be expected to lead to major breakthroughs in astronomy.
 - (D) Neutrino astronomy will disclose phenomena that will be more surprising than past discoveries.
 - (E) Neutrino astronomy will always be characterized by a large time lag between hypothesis and experimental confirmation.
3. In the last paragraph, the author describes the development of astronomy in order to
 - (A) suggest that the potential findings of neutrino astronomy can be seen as part of a series of astronomical successes
 - (B) illustrate the role of surprise in scientific discovery
 - (C) demonstrate the effectiveness of the DUMAND apparatus in detecting neutrinos

- (D) name some cosmic phenomena that neutrino astronomy will illuminate
- (E) contrast the motivation of earlier astronomers with that of the astrophysicists working on the DUMAND project
4. According to the passage, one advantage that neutrinos have for studies in astronomy is that they
- (A) have been detected for the last twenty-five years
- (B) possess a variable electric charge
- (C) are usually extremely massive
- (D) carry information about their history with them
- (E) are very similar to other electromagnetic particles
5. According to the passage, the primary use of the apparatus mentioned in lines 24-32 would be to
- (A) increase the mass of a neutrino
- (B) interpret the information neutrinos carry with them
- (C) study the internal structure of a neutrino
- (D) see neutrinos in distant regions of space
- (E) detect the presence of cosmic neutrinos
6. The passage states that interactions between neutrinos and other matter are
- (A) rare
- (B) artificial
- (C) undetectable
- (D) unpredictable
- (E) hazardous
7. The passage mentions which of the following as a reason that neutrinos are hard to detect?
- (A) Their pervasiveness in the universe
- (B) Their ability to escape from different regions of space
- (C) Their inability to penetrate dense matter
- (D) The similarity of their structure to that of nucleons
- (E) The infrequency of their interaction with other matter
8. According to the passage, the interaction of a neutrino with other matter can produce
- (A) particles that are neutral and massive
- (B) a form of radiation that permeates the universe
- (C) inaccurate information about the site and circumstances of the neutrino's production
- (D) charged particles and light

- (E) a situation in which light and other forms of electromagnetic radiation are blocked
9. According to the passage, one of the methods used to establish the properties of neutrinos was
- (A) detection of photons
 - (B) observation of the interaction of neutrinos with gamma rays
 - (C) observation of neutrinos that were artificially created
 - (D) measurement of neutrinos that interacted with particles of seawater
 - (E) experiments with electromagnetic radiation

Passage 9 (9/63)

Most economists in the United States seem captivated by the spell of the free market. Consequently, nothing seems good or normal that does not accord with the requirements of the free market. A price that is determined by the seller or, for that matter, established by anyone other than the aggregate of consumers seems pernicious. Accordingly, it requires a major act of will to think of price-fixing (the determination of prices by the seller) as both "normal" and having a valuable economic function. In fact, price-fixing is normal in all industrialized societies because the industrial system itself provides, as an effortless consequence of its own development, the price-fixing that it requires. Modern industrial planning requires and rewards great size. Hence, a comparatively small number of large firms will be competing for the same group of consumers. That each large firm will act with consideration of its own needs and thus avoid selling its products for more than its competitors charge is commonly recognized by advocates of free-market economic theories. But each large firm will also act with full consideration of the needs that it has in common with the other large firms competing for the same customers. Each large firm will thus avoid significant price-cutting, because price-cutting would be prejudicial to the common interest in a stable demand for products. Most economists do not see price-fixing when it occurs because they expect it to be brought about by a number of explicit agreements among large firms; it is not.

Moreover, those economists who argue that allowing the free market to operate without interference is the most efficient method of establishing prices have not considered the economies of non-socialist countries other than the United States. These economies employ intentional price-fixing, usually in an overt fashion. Formal price-fixing by cartel and informal price-fixing by agreements covering the members of an industry are commonplace. Were there something peculiarly efficient about the free market and inefficient about price-fixing, the countries that have avoided the first and used the second would have suffered drastically in their economic development. There is no indication that they have.

Socialist industry also works within a framework of controlled prices. In the early 1970's, the Soviet Union began to give firms and industries some of the flexibility in adjusting prices that a more informal evolution has accorded the capitalist system. Economists in the United States have hailed the change as a return to the free market. But Soviet firms are no more subject to prices established by a free market over which they exercise little influence than are capitalist firms; rather, Soviet firms have been given the power to fix prices.

1. The primary purpose of the passage is to
 - (A) refute the theory that the free market plays a useful role in the development of industrialized societies
 - (B) suggest methods by which economists and members of the government of the United States can recognize and combat price-fixing by large firms
 - (C) show that in industrialized societies price-fixing and the operation of the free market are not only compatible but also mutually beneficial
 - (D) explain the various ways in which industrialized societies can fix prices in order to stabilize the free market
 - (E) argue that price-fixing, in one form or another, is an inevitable part of and benefit to the economy of any industrialized society
2. The passage provides information that would answer which of the following questions about price-fixing?
 - I. What are some of the ways in which prices can be fixed?
 - II. For what products is price-fixing likely to be more profitable than the operation of the free market?
 - III. Is price-fixing more common in socialist industrialized societies or in non-socialist industrialized societies?
 - (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
3. The author's attitude toward "Most economists in the United States" ([line 1](#)) can best be described as
 - (A) spiteful and envious
 - (B) scornful and denunciatory
 - (C) critical and condescending
 - (D) ambivalent but deferential
 - (E) uncertain but interested
4. It can be inferred from the author's argument that a price fixed by the seller "seems pernicious" ([line 7](#)) because
 - (A) people do not have confidence in large firms
 - (B) people do not expect the government to regulate prices
 - (C) most economists believe that consumers as a group should determine prices
 - (D) most economists associate fixed prices with communist and socialist economies
 - (E) most economists believe that no one group should determine prices

5. The suggestion in the passage that price-fixing in industrialized societies is normal arises from the author's statement that price-fixing is
- (A) a profitable result of economic development
 - (B) an inevitable result of the industrial system
 - (C) the result of a number of carefully organized decisions
 - (D) a phenomenon common to industrialized and non-industrialized societies
 - (E) a phenomenon best achieved cooperatively by government and industry
6. According to the author, price-fixing in non-socialist countries is often
- (A) accidental but productive
 - (B) illegal but useful
 - (C) legal and innovative
 - (D) traditional and rigid
 - (E) intentional and widespread
7. According to the author, what is the result of the Soviet Union's change in economic policy in the 1970's?
- (A) Soviet firms show greater profit.
 - (B) Soviet firms have less control over the free market.
 - (C) Soviet firms are able to adjust to technological advances.
 - (D) Soviet firms have some authority to fix prices.
 - (E) Soviet firms are more responsive to the free market.
8. With which of the following statements regarding the behavior of large firms in industrialized societies would the author be most likely to agree?
- (A) The directors of large firms will continue to anticipate the demand for products.
 - (B) The directors of large firms are less interested in achieving a predictable level of profit than in achieving a large profit.
 - (C) The directors of large firms will strive to reduce the costs of their products.
 - (D) Many directors of large firms believe that the government should establish the prices that will be charged for products.
 - (E) Many directors of large firms believe that the price charged for products is likely to increase annually.
9. In the passage, the author is primarily concerned with
- (A) predicting the consequences of a practice
 - (B) criticizing a point of view
 - (C) calling attention to recent discoveries
 - (D) proposing a topic for research
 - (E) summarizing conflicting opinions

Passage 10 (10/63)

Caffeine, the stimulant in coffee, has been called “the most widely used psychoactive substance on Earth.” Snyder, Daly and Bruns have recently proposed that caffeine affect behavior by countering the activity in the human brain of a naturally occurring chemical called adenosine. Adenosine normally depresses neuron firing in many areas of the brain. It apparently does this by inhibiting the release of neurotransmitters, chemicals that carry nerve impulses from one neuron to the next. Like many other agents that affect neuron firing, adenosine must first bind to specific receptors on neuronal membranes. There are at least two classes of these receptors, which have been designated A₁ and A₂. Snyder *et al* propose that caffeine, which is structurally similar to adenosine, is able to bind to both types of receptors, which prevents adenosine from attaching there and allows the neurons to fire more readily than they otherwise would.

For many years, caffeine’s effects have been attributed to its inhibition of the production of phosphodiesterase, an enzyme that breaks down the chemical called cyclic AMP. A number of neurotransmitters exert their effects by first increasing cyclic AMP concentrations in target neurons. Therefore, prolonged periods at the elevated concentrations, as might be brought about by a phosphodiesterase inhibitor, could lead to a greater amount of neuron firing and, consequently, to behavioral stimulation. But Snyder *et al* point out that the caffeine concentrations needed to inhibit the production of phosphodiesterase in the brain are much higher than those that produce stimulation. Moreover, other compounds that block phosphodiesterase’s activity are not stimulants.

To buttress their case that caffeine acts instead by preventing adenosine binding, Snyder *et al* compared the stimulatory effects of a series of caffeine derivatives with their ability to dislodge adenosine from its receptors in the brains of mice. “In general,” they reported, “the ability of the compounds to compete at the receptors correlates with their ability to stimulate locomotion in the mouse; i.e., the higher their capacity to bind at the receptors, the higher their ability to stimulate locomotion.” Theophylline, a close structural relative of caffeine and the major stimulant in tea, was one of the most effective compounds in both regards.

There were some apparent exceptions to the general correlation observed between adenosine-receptor binding and stimulation. One of these was a compound called 3-isobutyl-1-methylxanthine (IBMX), which bound very well but actually depressed mouse locomotion. Snyder *et al* suggests that this is not a major *stumbling block* to their hypothesis. The problem is that the compound has mixed effects in the brain, a not unusual occurrence with psychoactive drugs. Even caffeine, which is generally known only for its stimulatory effects, displays this property, depressing mouse locomotion at very low concentrations and stimulating it at higher ones.

1. The primary purpose of the passage is to
 - (A) discuss a plan for investigation of a phenomenon that is not yet fully understood
 - (B) present two explanations of a phenomenon and reconcile the differences between them

- (C) summarize two theories and suggest a third theory that overcomes the problems encountered in the first two
 - (D) describe an alternative hypothesis and provide evidence and arguments that support it
 - (E) challenge the validity of a theory by exposing the inconsistencies and contradictions in it
2. Which of the following, if true, would most weaken the theory proposed by Snyder et al?
- (A) At very low concentrations in the human brain, both caffeine and theophylline tend to have depressive rather than stimulatory effects on human behavior.
 - (B) The ability of caffeine derivatives at very low concentrations to dislodge adenosine from its receptors in mouse brains correlates well with their ability to stimulate mouse locomotion at these low concentrations.
 - (C) The concentration of cyclic AMP in target neurons in the human brain that leads to increased neuron firing can be produced by several different phosphodiesterase inhibitors in addition to caffeine.
 - (D) The concentration of caffeine required to dislodge adenosine from its receptors in the human brain is much greater than the concentration that produces behavioral stimulation in humans.
 - (E) The concentration of IBMX required to dislodge adenosine from its receptors in mouse brains is much smaller than the concentration that stimulates locomotion in the mouse.
3. According to Snyder et al, caffeine differs from adenosine in that caffeine
- (A) stimulates behavior in the mouse and in humans, whereas adenosine stimulates behavior in humans only
 - (B) has mixed effects in the brain, whereas adenosine has only a stimulatory effect
 - (C) increases cyclic AMP concentrations in target neurons, whereas adenosine decreases such concentrations
 - (D) permits release of neurotransmitters when it is bound to adenosine receptors, whereas adenosine inhibits such release
 - (E) inhibits both neuron firing and the production of phosphodiesterase when there is a sufficient concentration in the brain, whereas adenosine inhibits only neuron firing
4. In response to experimental results concerning IBMX, Snyder et al contended that it is not uncommon for psychoactive drugs to have
- (A) mixed effects in the brain
 - (B) inhibitory effects on enzymes in the brain
 - (C) close structural relationships with caffeine

- (D) depressive effects on mouse locomotion
- (E) the ability to dislodge caffeine from receptors in the brain
5. The passage suggests that Snyder et al believe that if the older theory concerning caffeine's effects were correct, which of the following would have to be the case?
- I. All neurotransmitters would increase the short-term concentration of cyclic AMP in target neurons.
 - II. Substances other than caffeine that inhibit the production of phosphodiesterase would be stimulants.
 - III. All concentration levels of caffeine that are high enough to produce stimulation would also inhibit the production of phosphodiesterase.
- (A) I only
- (B) I and II only
- (C) I and III only
- (D) II and III only
- (E) I, II, and III
6. According to Snyder et al, all of the following compounds can bind to specific receptors in the brain EXCEPT
- (A) IBMX
 - (B) caffeine
 - (C) adenosine
 - (D) theophylline
 - (E) phosphodiesterase
7. Snyder et al suggest that caffeine's ability to bind to A₁ and A₂ receptors can be at least partially attributed to which of the following?
- (A) The chemical relationship between caffeine and phosphodiesterase
 - (B) The structural relationship between caffeine and adenosine
 - (C) The structural similarity between caffeine and neurotransmitters
 - (D) The ability of caffeine to stimulate behavior
 - (E) The natural occurrence of caffeine and adenosine in the brain
8. The author quotes Snyder et al in lines 38-43 most probably in order to
- (A) reveal some of the assumptions underlying their theory
 - (B) summarize a major finding of their experiments
 - (C) point out that their experiments were limited to the mouse
 - (D) indicate that their experiments resulted only in general correlations
 - (E) refute the objections made by supporters of the older theory
9. The last paragraph of the passage performs which of the following functions?
- (A) Describes a disconfirming experimental result and reports the explanation

- given by Snyder et al in an attempt to reconcile this result with their theory.
- (B) Specifies the basis for the correlation observed by Snyder et al and presents an explanation in an attempt to make the correlation consistent with the operation of psychoactive drugs other than caffeine.
 - (C) Elaborates the description of the correlation observed by Snyder et al and suggests an additional explanation in an attempt to make the correlation consistent with the older theory.
 - (D) Reports inconsistent experimental data and describes the method Snyder et al will use to reanalyze this data.
 - (E) Provides an example of the hypothesis proposed by Snyder et al and relates this example to caffeine's properties.

Passage 11 (11/63)

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

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

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

I refer to the thousands of pottery vessels and ancient lamps that are essentially duplicates of one another. In one small excavation in Cyprus, archaeologists recently uncovered 2,000 virtually indistinguishable small jugs in a single courtyard. Even precious royal seal impressions known as */melekh* handles have been found in abundance—more than 4,000 examples so far.

The basements of museums are simply not large enough to store the artifacts that are likely to be discovered in the future. There is not enough money even to catalogue the finds; as a result, they cannot be found again and become as inaccessible as if they had never been discovered. Indeed, with the help of a computer, sold artifacts could be more accessible than are the pieces stored in bulging museum basements. Prior to sale, each could be photographed and the list of the purchasers could be maintained on the computer. A purchaser could even be required to agree to return the piece if it should become needed for scientific purposes.

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

1. The primary purpose of the passage is to propose
 - (A) an alternative to museum display of artifacts
 - (B) a way to curb illegal digging while benefiting the archaeological profession
 - (C) a way to distinguish artifacts with scientific value from those that have no such value
 - (D) the governmental regulation of archaeological sites
 - (E) a new system for cataloguing duplicate artifacts
2. The author implies that all of the following statements about duplicate artifacts are true EXCEPT:
 - (A) A market for such artifacts already exists.
 - (B) Such artifacts seldom have scientific value.
 - (C) There is likely to be a continuing supply of such artifacts.
 - (D) Museums are well supplied with examples of such artifacts.
 - (E) Such artifacts frequently exceed in quality those already catalogued in museum collections.
3. Which of the following is mentioned in the passage as a disadvantage of storing artifacts in museum basements?
 - (A) Museum officials rarely allow scholars access to such artifacts.
 - (B) Space that could be better used for display is taken up for storage.
 - (C) Artifacts discovered in one excavation often become separated from each other.
 - (D) Such artifacts are often damaged by variations in temperature and humidity.
 - (E) Such artifacts' often remain uncatalogued and thus cannot be located once they are put in storage.
4. The author mentions the excavation in Cyprus ([lines 31-34](#)) to emphasize which of the following points?
 - (A) Ancient lamps and pottery vessels are less valuable, although more rare, than royal seal impressions.
 - (B) Artifacts that are very similar to each other present cataloguing difficulties to archaeologists.
 - (C) Artifacts that are not uniquely valuable, and therefore could be sold, are available in large quantities.
 - (D) Cyprus is the most important location for unearthing large quantities of salable artifacts.

- (E) Illegal sales of duplicate artifacts are wide-spread, particularly on the island of Cyprus.
5. The author's argument concerning the effect of the official sale of duplicate artifacts on illegal excavation is based on which of the following assumptions?
- (A) Prospective purchasers would prefer to buy authenticated artifacts.
(B) The price of illegally excavated artifacts would rise.
(C) Computers could be used to trace sold artifacts.
(D) Illegal excavators would be forced to sell only duplicate artifacts.
(E) Money gained from selling authenticated artifacts could be used to investigate and prosecute illegal excavators.
6. The author anticipates which of the following initial objections to the adoption of his proposal?
- (A) Museum officials will become unwilling to store artifacts.
(B) An oversupply of salable artifacts will result and the demand for them will fall.
(C) Artifacts that would have been displayed in public places will be sold to private collectors.
(D) Illegal excavators will have an even larger supply of artifacts for resale.
(E) Counterfeiting of artifacts will become more commonplace.
7. The author implies that which of the following would occur if duplicate artifacts were sold on the open market?
- I. Illegal excavation would eventually cease completely.
II. Cyprus would become the primary source of marketable duplicate artifacts.
III. Archaeologists would be able to publish the results of their excavations more frequently than they currently do.
- (A) I only
(B) III only
(C) I and II only
(D) II and III only
(E) I, II, and III

Passage 12 (12/63)

(This passage is excerpted from material published in 1980.)

Federal efforts to aid minority businesses began in the 1960's when the Small Business Administration (SBA) began making federally guaranteed loans and government-sponsored management and technical assistance available to minority business enterprises. While this program enabled many minority entrepreneurs to form new businesses, the results were disappointing, since managerial inexperience, unfavorable locations, and capital shortages led

to high failure rates. Even years after the program was implemented, minority business receipts were not quite two percent of the national economy's total receipts.

Recently federal policymakers have adopted an approach intended to accelerate development of the minority business sector by moving away from directly aiding small minority enterprises and toward supporting larger, growth-oriented minority firms through intermediary companies. In this approach, large corporations participate in the development of successful and stable minority businesses by making use of government-sponsored venture capital. The capital is used by a participating company to establish a Minority Enterprise Small Business Investment Company or MESBIC. The MESBIC then provides capital and guidance to minority businesses that have potential to become future suppliers or customers of the sponsoring company.

MESBIC's are the result of the belief that providing established firms with easier access to relevant management techniques and more job-specific experience, as well as substantial amounts of capital, gives those firms a greater opportunity to develop sound business foundations than does simply making general management experience and small amounts of capital available. Further, since potential markets for the minority businesses already exist through the sponsoring companies, the minority businesses face considerably less risk in terms of location and market fluctuation. Following early financial and operating problems, sponsoring corporations began to capitalize MESBIC's far above the legal minimum of \$500,000 in order to generate sufficient income and to sustain the quality of management needed. MESBIC's are now emerging as increasingly important financing sources for minority enterprises.

Ironically, MESBIC staffs, which usually consist of Hispanic and Black professionals, tend to approach investments in minority firms more pragmatically than do many MESBIC directors, who are usually senior managers from sponsoring corporations. The latter often still think mainly in terms of the "social responsibility approach" and thus seem to prefer deals that are riskier and less attractive than normal investment criteria would warrant. Such differences in viewpoint have produced uneasiness among many minority staff members, who feel that minority entrepreneurs and businesses should be judged by established business considerations. These staff members believe their point of view is closer to the original philosophy of MESBIC's and they are concerned that, unless a more prudent course is followed, MESBIC directors may **revert to** policies likely to re-create the disappointing results of the original SBA approach.

1. Which of the following best states the central idea of the passage?
 - (A) The use of MESBIC's for aiding minority entrepreneurs seems to have greater potential for success than does the original SBA approach.
 - (B) There is a crucial difference in point of view between the staff and directors of some MESBIC's.
 - (C) After initial problems with management and marketing, minority businesses have begun to expand at a steady rate.
 - (D) Minority entrepreneurs wishing to form new businesses now have several equally successful federal programs on which to rely.
 - (E) For the first time since 1960, large corporations are making significant

contributions to the development of minority businesses.

2. According to the passage, the MESBIC approach differs from the SBA approach in that MESBIC's
 - (A) seek federal contracts to provide markets for minority businesses
 - (B) encourage minority businesses to provide markets for other minority businesses
 - (C) attempt to maintain a specified rate of growth in the minority business sector
 - (D) rely on the participation of large corporations to finance minority businesses
 - (E) select minority businesses on the basis of their location
3. Which of the following does the author cite to support the conclusion that the results of the SBA program were disappointing?
 - (A) The small number of new minority enterprises formed as a result of the program
 - (B) The small number of minority enterprises that took advantage of the management and technical assistance offered under the program
 - (C) The small percentage of the nation's business receipts earned by minority enterprises following the programs, implementation
 - (D) The small percentage of recipient minority enterprises that were able to repay federally guaranteed loans made under the program
 - (E) The small number of minority enterprises that chose to participate in the program
4. Which of the following statements about the SBA program can be inferred from the passage?
 - (A) The maximum term for loans made to recipient businesses was 15 years.
 - (B) Business loans were considered to be more useful to recipient businesses than was management and technical assistance.
 - (C) The anticipated failure rate for recipient businesses was significantly lower than the rate that actually resulted.
 - (D) Recipient businesses were encouraged to relocate to areas more favorable for business development.
 - (E) The capitalization needs of recipient businesses were assessed and then provided for adequately.
5. Based on information in the passage, which of the following would be indicative of the pragmatism of MESBIC staff members?
 - I. A reluctance to invest in minority businesses that show marginal expectations of return on the investments
 - II. A desire to invest in minority businesses that produce goods and services likely to be of use to the sponsoring company
 - III. A belief that the minority business sector is best served by investing

primarily in newly established businesses

- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II and III
6. The author refers to the “financial and operating problems” ([line 38](#)) encountered by MESBIC’s primarily in order to
- (A) broaden the scope of the discussion to include the legal considerations of funding MESBIC’S through sponsoring companies
 - (B) call attention to the fact that MESBIC’s must receive adequate funding in order to function effectively
 - (C) show that sponsoring companies were willing to invest only \$500,000 of government-sponsored venture capital in the original MESBIC’s
 - (D) compare SBA and MESBIC limits on minimum funding
 - (E) refute suggestions that MESBIC’s have been only marginally successful
7. The author’s primary objective in the passage is to
- (A) disprove the view that federal efforts to aid minority businesses have been ineffective
 - (B) explain how federal efforts to aid minority businesses have changed since the 1960’s
 - (C) establish a direct link between the federal efforts to aid minority businesses made before the 1960’s and those made in the 1980’s
 - (D) analyze the basis for the belief that job-specific experience is more useful to minority businesses than is general management experience
 - (E) argue that the “social responsibility approach” to aiding minority businesses is superior to any other approach
8. It can be inferred from the passage that the attitude of some MESBIC staff members toward the investments preferred by some MESBIC directors can best be described as
- (A) defensive
 - (B) resigned
 - (C) indifferent
 - (D) shocked
 - (E) disapproving
9. The passage provides information that would answer which of the following questions?
- (A) What was the average annual amount, in dollars, of minority business receipts

- before the SBA strategy was implemented?
- (B) What locations are considered to be unfavorable for minority businesses?
- (C) What is the current success rate for minority businesses that are capitalized by MESBIC's?
- (D) How has the use of federal funding for minority businesses changed since the 1960's?
- (E) How do minority businesses apply to participate in a MESBIC program?

Passage 13 (13/63)

The majority of successful senior managers do not closely follow the classical rational model of first clarifying goals, assessing the problem, formulating options, estimating likelihoods of success, making a decision, and only then taking action to implement the decision. Rather, in their **day-by-day** tactical maneuvers, these senior executives rely on what is vaguely termed "intuition" to manage a network of interrelated problems that require them to deal with ambiguity, inconsistency, novelty, and surprise; and to integrate action into the process of thinking.

Generations of writers on management have recognized that some practicing managers rely heavily on intuition. In general, however, such writers display a poor grasp of what intuition is. Some see it as the opposite of rationality; others view it as an excuse for capriciousness.

Isenberg's recent research on the cognitive processes of senior managers reveals that managers' intuition is neither of these. Rather, senior managers use intuition in at least five distinct ways. First, they intuitively sense when a problem exists. Second, managers rely on intuition to perform well-learned behavior patterns rapidly. This intuition is not arbitrary or irrational, but is based on years of painstaking practice and hands-on experience that build skills. A third function of intuition is to synthesize isolated bits of data and practice into an integrated picture, often in an "Aha!" experience. Fourth, some managers use intuition as a check on the results of more rational analysis. Most senior executives are familiar with the formal decision analysis models and tools, and those who use such systematic methods for reaching decisions are occasionally **leery of** solutions suggested by these methods which **run counter to** their sense of the correct course of action. Finally, managers can use intuition to bypass in-depth analysis and move rapidly to engender a plausible solution. Used in this way, intuition is an almost instantaneous cognitive process in which a manager recognizes familiar patterns. One of the implications of the intuitive style of executive management is that "thinking" is inseparable from acting. Since managers often "know" what is right before they can analyze and explain it, they frequently act first and explain later. Analysis is inextricably tied to action in thinking/acting cycles, in which managers develop thoughts about their companies and organizations not by analyzing a problematic situation and then acting, but by acting and analyzing in close concert.

Given the great uncertainty of many of the management issues that they face, senior managers often instigate a course of action simply to learn more about an issue. They then use the results of the action to develop a more complete understanding of the issue. One implication of thinking/acting cycles is that action is often part of defining the problem, not just

of implementing the solution.

1. According to the passage, senior managers use intuition in all of the following ways EXCEPT to
 - (A) speed up of the creation of a solution to a problem
 - (B) identify a problem
 - (C) bring together disparate facts
 - (D) stipulate clear goals
 - (E) evaluate possible solutions to a problem
2. The passage suggests which of the following about the “writers on management” mentioned in [line 12](#)?
 - (A) They have criticized managers for not following the classical rational model of decision analysis.
 - (B) They have not based their analyses on a sufficiently large sample of actual managers.
 - (C) They have relied in drawing their conclusions on what managers say rather than on what managers do.
 - (D) They have misunderstood how managers use intuition in making business decisions.
 - (E) They have not acknowledged the role of intuition in managerial practice.
3. Which of the following best exemplifies “an ‘Aha!’ experience” ([line 28](#)) as it is presented in the passage?
 - (A) A manager risks taking an action whose outcome is unpredictable to discover whether the action changes the problem at hand.
 - (B) A manager performs well-learned and familiar behavior patterns in creative and uncharacteristic ways to solve a problem.
 - (C) A manager suddenly connects seemingly unrelated facts and experiences to create a pattern relevant to the problem at hand.
 - (D) A manager rapidly identifies the methodology used to compile data yielded by systematic analysis.
 - (E) A manager swiftly decides which of several sets of tactics to implement in order to deal with the contingencies suggested by a problem.
4. According to the passage, the classical model of decision analysis includes all of the following EXCEPT
 - (A) evaluation of a problem
 - (B) creation of possible solutions to a problem
 - (C) establishment of clear goals to be reached by the decision
 - (D) action undertaken in order to discover more information about a problem
 - (E) comparison of the probable effects of different solutions to a problem

5. It can be inferred from the passage that which of the following would most probably be one major difference in behavior between Manager X, who uses intuition to reach decisions, and Manager Y, who uses only formal decision analysis?
- (A) Manager X analyzes first and then acts; Manager Y does not.
 - (B) Manager X checks possible solutions to a problem by systematic analysis; Manager Y does not.
 - (C) Manager X takes action in order to arrive at the solution to a problem; Manager Y does not.
 - (D) Manager Y draws on years of hands-on experience in creating a solution to a problem; Manager X does not.
 - (E) Manager Y depends on day-to-day tactical maneuvering; manager X does not.
6. It can be inferred from the passage that “thinking/acting cycles” ([line 45](#)) in managerial practice would be likely to result in which of the following?
- I. A manager analyzes a network of problems and then acts on the basis of that analysis.
 - II. A manager gathers data by acting and observing the effects of action.
 - III. A manager takes action without being able to articulate reasons for that particular action.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
7. The passage provides support for which of the following statements?
- (A) Managers who rely on intuition are more successful than those who rely on formal decision analysis.
 - (B) Managers cannot justify their intuitive decisions.
 - (C) Managers’ intuition works contrary to their rational and analytical skills.
 - (D) Logical analysis of a problem increases the number of possible solutions.
 - (E) Intuition enables managers to employ their practical experience more efficiently.
8. Which of the following best describes the organization of the [first paragraph](#) of the passage?
- (A) An assertion is made and a specific supporting example is given.
 - (B) A conventional model is dismissed and an alternative introduced.
 - (C) The results of recent research are introduced and summarized.
 - (D) Two opposing points of view are presented and evaluated.

(E) A widely accepted definition is presented and qualified.

Passage 14 (14/63)

Nearly a century ago, biologists found that if they separated an invertebrate animal embryo into two parts at an early stage of its life, it would survive and develop as two normal embryos. This led them to believe that the cells in the early embryo are undetermined in the sense that each cell has the potential to develop in a variety of different ways. Later biologists found that the situation was not so simple. It matters in which plane the embryo is cut. If it is cut in a plane different from the one used by the early investigators, it will not form two whole embryos.

A debate arose over what exactly was happening. Which embryo cells are determined, just when do they become irreversibly committed to their fates, and what are the “morphogenetic determinants” that tell a cell what to become? But the debate could not be resolved because no one was able to ask the crucial questions in a form in which they could be pursued productively. Recent discoveries in molecular biology, however, have opened up prospects for a resolution of the debate. Now investigators think they know at least some of the molecules that act as morphogenetic determinants in early development. They have been able to show that, in a sense, cell determination begins even before an egg is fertilized.

Studying sea urchins, biologist Paul Gross found that an unfertilized egg contains substances that function as morphogenetic determinants. They are located in the cytoplasm of the egg cell; i.e., in that part of the cell’s protoplasm that lies outside of the nucleus. In the unfertilized egg, the substances are inactive and are not distributed homogeneously. When the egg is fertilized, the substances become active and, presumably, govern the behavior of the genes they interact with. Since the substances are unevenly distributed in the egg, when the fertilized egg divides, the resulting cells are different from the start and so can be qualitatively different in their own gene activity.

The substances that Gross studied are maternal messenger RNA’s—products of certain of the maternal genes. He and other biologists studying a wide variety of organisms have found that these particular RNA’s direct, in large part, the synthesis of histones, a class of proteins that bind to DNA. Once synthesized, the histones move into the cell nucleus, where sections of DNA wrap around them to form a structure that resembles beads, or knots, on a string. The beads are DNA segments wrapped around the histones; the string is the intervening DNA. And it is the structure of these beaded DNA strings that guide the fate of the cells in which they are located.

1. The passage is most probably directed at which kind of audience?
 - (A) State legislators deciding about funding levels for a state-funded biological laboratory
 - (B) Scientists specializing in molecular genetics
 - (C) Readers of an alumni newsletter published by the college that Paul Gross attended
 - (D) Marine biologists studying the processes that give rise to new species
 - (E) Undergraduate biology majors in a molecular biology course

2. It can be inferred from the passage that the morphogenetic determinants present in the early embryo are
 - (A) located in the nucleus of the embryo cells
 - (B) evenly distributed unless the embryo is not developing normally
 - (C) inactive until the embryo cells become irreversibly committed to their final function
 - (D) identical to those that were already present in the unfertilized egg
 - (E) present in larger quantities than is necessary for the development of a single individual
3. The main topic of the passage is
 - (A) the early development of embryos of lower marine organisms
 - (B) the main contribution of modern embryology to molecular biology
 - (C) the role of molecular biology in disproving older theories of embryonic development
 - (D) cell determination as an issue in the study of embryonic development
 - (E) scientific dogma as a factor in the recent debate over the value of molecular biology
4. According to the passage, when biologists believed that the cells in the early embryo were undetermined, they made which of the following mistakes?
 - (A) They did not attempt to replicate the original experiment of separating an embryo into two parts.
 - (B) They did not realize that there was a connection between the issue of cell determination and the outcome of the separation experiment.
 - (C) They assumed that the results of experiments on embryos did not depend on the particular animal species used for such experiments.
 - (D) They assumed that it was crucial to perform the separation experiment at an early stage in the embryo's life.
 - (E) They assumed that different ways of separating an embryo into two parts would be equivalent as far as the fate of the two parts was concerned.
5. It can be inferred from the passage that the initial production of histones after an egg is fertilized takes place
 - (A) in the cytoplasm
 - (B) in the maternal genes
 - (C) throughout the protoplasm
 - (D) in the beaded portions of the DNA strings
 - (E) in certain sections of the cell nucleus
6. It can be inferred from the passage that which of the following is dependent on the fertilization of an egg?

- (A) Copying of maternal genes to produce maternal messenger RNA's
 - (B) Synthesis of proteins called histones
 - (C) Division of a cell into its nucleus and the cytoplasm
 - (D) Determination of the egg cell's potential for division
 - (E) Generation of all of a cell's morphogenetic determinants
7. According to the passage, the morphogenetic determinants present in the unfertilized egg cell are which of the following?
- (A) Proteins bound to the nucleus
 - (B) Histones
 - (C) Maternal messenger RNA's
 - (D) Cytoplasm
 - (E) Nonbeaded intervening DNA
8. The passage suggests that which of the following plays a role in determining whether an embryo separated into two parts will develop as two normal embryos?
- I. The stage in the embryo's life at which the separation occurs
 - II. The instrument with which the separations is accomplished
 - III. The plane in which the cut is made that separates the embryo
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) I and III only
 - (E) I, II, and III
9. Which of the following circumstances is most comparable to the impasse biologists encountered in trying to resolve the debate about cell determination (lines 12-18)?
- (A) The problems faced by a literary scholar who wishes to use original source materials that are written in an unfamiliar foreign language
 - (B) The situation of a mathematician who in preparing a proof of a theorem for publication detects a reasoning error in the proof
 - (C) The difficulties of a space engineer who has to design equipment to function in an environment in which it cannot first be tested
 - (D) The predicament of a linguist trying to develop a theory of language acquisition when knowledge of the structure of language itself is rudimentary at best
 - (E) The dilemma confronting a foundation when the funds available to it are sufficient to support one of two equally deserving scientific projects but not both

Passage 15 (15/63)

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

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

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

1. The author indicates explicitly that which of the following records has been a source of information in her investigation?
 - (A) United States Immigration Service reports from 1914 to 1930
 - (B) Payrolls of southern manufacturing firms between 1910 and 1930
 - (C) The volume of cotton exports between 1898 and 1910
 - (D) The federal census of 1910
 - (E) Advertisements of labor recruiters appearing in southern newspapers after

1910

2. In the passage, the author anticipates which of the following as a possible objection to her argument?
 - (A) It is uncertain how many people actually migrated during the Great Migration.
 - (B) The eventual economic status of the Great Migration migrants has not been adequately traced.
 - (C) It is not likely that people with steady jobs would have reason to move to another area of the country.
 - (D) It is not true that the term “manufacturing and mechanical pursuits” actually encompasses the entire industrial sector.
 - (E) Of the Black workers living in southern cities, only those in a small number of trades were threatened by obsolescence.
3. According to the passage, which of the following is true of wages in southern cities in 1910?
 - (A) They were being pushed lower as a result of increased competition.
 - (B) They had begun to rise so that southern industry could attract rural workers.
 - (C) They had increased for skilled workers but decreased for unskilled workers.
 - (D) They had increased in large southern cities but decreased in small southern cities.
 - (E) They had increased in newly developed industries but decreased in the older trades.
4. The author cites each of the following as possible influences in a Black worker’s decision to migrate north in the Great Migration EXCEPT
 - (A) wage levels in northern cities
 - (B) labor recruiters
 - (C) competition from rural workers
 - (D) voting rights in northern states
 - (E) the Black press
5. It can be inferred from the passage that the “easy conclusion” mentioned in line 53 is based on which of the following assumptions?
 - (A) People who migrate from rural areas to large cities usually do so for economic reasons.
 - (B) Most people who leave rural areas to take jobs in cities return to rural areas as soon as it is financially possible for them to do so.
 - (C) People with rural backgrounds are less likely to succeed economically in cities than are those with urban backgrounds.
 - (D) Most people who were once skilled workers are not willing to work as unskilled workers.

- (E) People who migrate from their birthplaces to other regions of country seldom undertake a second migration.
6. The primary purpose of the passage is to
- (A) support an alternative to an accepted methodology
 - (B) present evidence that resolves a contradiction
 - (C) introduce a recently discovered source of information
 - (D) challenge a widely accepted explanation
 - (E) argue that a discarded theory deserves new attention
7. According to information in the passage, which of the following is a correct sequence of groups of workers, from highest paid to lowest paid, in the period between 1910 and 1930?
- (A) Artisans in the North; artisans in the South; unskilled workers in the North; unskilled workers in the South
 - (B) Artisans in the North and South; unskilled workers in the North; unskilled workers in the South
 - (C) Artisans in the North; unskilled workers in the North; artisans in the South
 - (D) Artisans in the North and South; unskilled urban workers in the North; unskilled rural workers in the South
 - (E) Artisans in the North and South; unskilled rural workers in the North and South; unskilled urban workers in the North and South
8. The material in the passage would be most relevant to a long discussion of which of the following topics?
- (A) The reasons for the subsequent economic difficulties of those who participated in the Great Migration
 - (B) The effect of migration on the regional economies of the United States following the First World War
 - (C) The transition from a rural to an urban existence for those who migrated in the Great Migration
 - (D) The transformation of the agricultural South following the boll weevil infestation
 - (E) The disappearance of the artisan class in the United States as a consequence of mechanization in the early twentieth century

Passage 16 (16/63)

In 1896 a Georgia couple **suing for** damages in the accidental death of their two year old was told that since the child had made no real economic contribution to the family, there was no liability for damages. In contrast, less than a century later, in 1979, the parents of a three-year-old sued in New York for accidental-death damages and won an award of \$750,000.

The transformation in social values implicit in juxtaposing these two incidents is the subject

of Viviana Zelizer's excellent book, *Pricing the Priceless Child*. During the nineteenth century, she argues, the concept of the "useful" child who contributed to the family economy gave way gradually to the present-day notion of the "useless" child who, though producing no income for, and indeed extremely costly to, its parents, is yet considered emotionally "priceless." Well established among segments of the middle and upper classes by the mid-1800's, this new view of childhood spread throughout society in the late-nineteenth and early-twentieth centuries as reformers introduced child-labor regulations and compulsory education laws predicated in part on the assumption that a child's emotional value made child labor taboo.

For Zelizer the origins of this transformation were many and complex. The gradual erosion of children's productive value in a maturing industrial economy, the decline in birth and death rates, especially in child mortality, and the development of the companionate family (a family in which members were united by explicit bonds of love rather than duty) were all factors critical in changing the assessment of children's worth. Yet "expulsion of children from the 'cash nexus,' although clearly shaped by profound changes in the economic, occupational, and family structures," Zelizer maintains, "was also part of a cultural process 'of sacralization' of children's lives." Protecting children from the crass business world became enormously important for late-nineteenth-century middle-class Americans, she suggests; this sacralization was a way of resisting what they perceived as the relentless corruption of human values by the marketplace.

In stressing the cultural determinants of a child's worth, Zelizer takes issue with practitioners of the new "sociological economics," who have analyzed such traditionally sociological topics as crime, marriage, education, and health solely in terms of their economic determinants. Allowing only a small role for cultural forces in the form of individual "preferences," these sociologists tend to view all human behaviors as directed primarily by the principle of maximizing economic gain. Zelizer is highly critical of this approach, and emphasizes instead the opposite phenomenon: the power of social values to transform price. As children became more valuable in emotional terms, she argues, their "exchange" or "surrender" value on the market, that is, the conversion of their intangible worth into cash terms, became much greater.

1. It can be inferred from the passage that accidental-death damage awards in America during the nineteenth century tended to be based principally on the
 - (A) earnings of the person at time of death
 - (B) wealth of the party causing the death
 - (C) degree of culpability of the party causing the death
 - (D) amount of money that had been spent on the person killed
 - (E) amount of suffering endured by the family of the person killed
2. It can be inferred from the passage that in the early 1800's children were generally regarded by their families as individuals who
 - (A) needed enormous amounts of security and affection
 - (B) required constant supervision while working
 - (C) were important to the economic well-being of a family
 - (D) were unsuited to spending long hours in school

- (E) were financial burdens assumed for the good of society
3. Which of the following alternative explanations of the change in the cash value of children would be most likely to be put forward by sociological economists as they are described in the passage?
- (A) The cash value of children rose during the nineteenth century because parents began to increase their emotional investment in the upbringing of their children.
 - (B) The cash value of children rose during the nineteenth century because their expected earnings over the course of a lifetime increased greatly.
 - (C) The cash value of children rose during the nineteenth century because the spread of humanitarian ideals resulted in a wholesale reappraisal of the worth of an individual.
 - (D) The cash value of children rose during the nineteenth century because compulsory education laws reduced the supply, and thus raised the costs, of available child labor.
 - (E) The cash value of children rose during the nineteenth century because of changes in the way negligence law assessed damages in accidental death cases.
4. The primary purpose of the passage is to
- (A) review the literature in a new academic sub-field
 - (B) present the central thesis of a recent book
 - (C) contrast two approaches to analyzing historical change
 - (D) refute a traditional explanation of a social phenomenon
 - (E) encourage further work on a neglected historical topic
5. It can be inferred from the passage that which of the following statements was true of American families over the course of the nineteenth century?
- (A) The average size of families grew considerably.
 - (B) The percentage of families involved in industrial work declined dramatically.
 - (C) Family members became more emotionally bonded to one another.
 - (D) Family members spent an increasing amount of time working with each other.
 - (E) Family members became more economically dependent on each other.
6. Zelizer refers to all of the following as important influences in changing the assessment of children's worth EXCEPT changes in
- (A) the mortality rate
 - (B) the nature of industry
 - (C) the nature of the family
 - (D) attitudes toward reform movements
 - (E) attitudes toward the marketplace

7. Which of the following would be most consistent with the practices of sociological economics as these practices are described in the passage?
- (A) Arguing that most health-care professionals enter the field because they believe it to be the most socially useful of any occupation
 - (B) Arguing that most college students choose majors that they believe will lead to the most highly paid jobs available to them
 - (C) Arguing that most decisions about marriage and divorce are based on rational assessments of the likelihood that each partner will remain committed to the relationship
 - (D) Analyzing changes in the number of people enrolled in colleges and universities as a function of changes in the economic health of these institutions
 - (E) Analyzing changes in the ages at which people get married as a function of a change in the average number of years that young people have lived away from their parents

Passage 17 (17/63)

Prior to 1975, union efforts to organize public-sector clerical workers, most of whom are women, were somewhat limited. The factors favoring unionization drives seem to have been either the presence of large numbers of workers, as in New York City, to make it worth the effort, or the concentration of small numbers in one or two locations, such as a hospital, to make it relatively easy. Receptivity to unionization on the workers' part was also a consideration, but when there were large numbers involved or the clerical workers were the only unorganized group in a jurisdiction, the multi-occupational unions would often try to organize them regardless of the workers' initial receptivity. The strategic reasoning was based, first, on the concern that politicians and administrators might **play off** unionized against non-unionized workers, and, second, on the conviction that a fully unionized public work force meant power, both at the bargaining table and in the legislature. In localities where clerical workers were few in number, were scattered in several workplaces, and expressed no interest in being organized, unions more often than not ignored them in the pre-1975 period.

But since the mid-1970's, a different strategy has emerged. In 1977, 34 percent of government clerical workers were represented by a labor organization, compared with 46 percent of government professionals, 44 percent of government blue-collar workers, and 41 percent of government service workers. Since then, however, the biggest increases in public-sector unionization have been among clerical workers. Between 1977 and 1980, the number of unionized government workers in blue-collar and service occupations increased only about 1.5 percent, while in the white-collar occupations the increase was 20 percent and among clerical workers in particular, the increase was 22 percent.

What accounts for this upsurge in unionization among clerical workers? First, more women have entered the work force in the past few years, and more of them plan to remain working until retirement age. Consequently, they are probably more concerned than their predecessors were about job security and economic benefits. Also, the women's movement has succeeded in

legitimizing the economic and political activism of women on their own behalf, thereby producing a more positive attitude toward unions. The absence of any comparable increase in unionization among private-sector clerical workers, however, identifies the primary catalyst—the structural change in the multi-occupational public-sector unions themselves. Over the past twenty years, the occupational distribution in these unions has been steadily shifting from predominantly blue-collar to predominantly white-collar. Because there are far more women in white-collar jobs, an increase in the proportion of female members has accompanied the occupational shift and has altered union policy-making in favor of organizing women and addressing women's issues.

1. According to the passage, the public-sector workers who were most likely to belong to unions in 1977 were
 - (A) professionals
 - (B) managers
 - (C) clerical workers
 - (D) service workers
 - (E) blue-collar workers
2. The author cites union efforts to achieve a fully unionized work force ([line 13-19](#)) in order to account for why
 - (A) politicians might try to oppose public-sector union organizing
 - (B) public-sector unions have recently focused on organizing women
 - (C) early organizing efforts often focused on areas where there were large numbers of workers
 - (D) union efforts with regard to public-sector clerical workers increased dramatically after 1975
 - (E) unions sometimes tried to organize workers regardless of the workers' initial interest in unionization
3. The author's claim that, since the mid-1970's, a new strategy has emerged in the unionization of public-sector clerical workers ([line 23](#)) would be strengthened if the author
 - (A) described more fully the attitudes of clerical workers toward labor unions
 - (B) compared the organizing strategies employed by private-sector unions with those of public-sector unions
 - (C) explained why politicians and administrators sometimes oppose unionization of clerical workers
 - (D) indicated that the number of unionized public-sector clerical workers was increasing even before the mid-1970's
 - (E) showed that the factors that favored unionization drives among these workers prior to 1975 have decreased in importance
4. According to the passage, in the period prior to 1975, each of the following

considerations helped determine whether a union would attempt to organize a certain group of clerical workers EXCEPT

- (A) the number of clerical workers in that group
 - (B) the number of women among the clerical workers in that group
 - (C) whether the clerical workers in that area were concentrated in one workplace or scattered over several workplaces
 - (D) the degree to which the clerical workers in that group were interested in unionization
 - (E) whether all the other workers in the same jurisdiction as that group of clerical workers were unionized
5. The author states that which of the following is a consequence of the women's movement of recent years?
- (A) An increase in the number of women entering the work force
 - (B) A structural change in multi-occupational public-sector unions
 - (C) A more positive attitude on the part of women toward unions
 - (D) An increase in the proportion of clerical workers that are women
 - (E) An increase in the number of women in administrative positions
6. The main concern of the passage is to
- (A) advocate particular strategies for future efforts to organize certain workers into labor unions
 - (B) explain differences in the unionized proportions of various groups of public-sector workers
 - (C) evaluate the effectiveness of certain kinds of labor unions that represent public-sector workers
 - (D) analyzed and explain an increase in unionization among a certain category of workers
 - (E) describe and distinguish strategies appropriate to organizing different categories of workers
7. The author implies that if the increase in the number of women in the work force and the impact of the women's movement were the main causes of the rise in unionization of public-sector clerical workers, then
- (A) more women would hold administrative positions in unions
 - (B) more women who hold political offices would have positive attitudes toward labor unions
 - (C) there would be an equivalent rise in unionization of private-sector clerical workers
 - (D) unions would have shown more interest than they have in organizing women
 - (E) the increase in the number of unionized public-sector clerical workers would have been greater than it has been

8. The author suggests that it would be disadvantageous to a union if
- (A) many workers in the locality were not unionized
 - (B) the union contributed to political campaigns
 - (C) the union included only public-sector workers
 - (D) the union included workers from several jurisdictions
 - (E) the union included members from only a few occupations
9. The author implies that, in comparison with working women today, women working in the years prior to the mid-1970's showed a greater tendency to
- (A) prefer smaller workplaces
 - (B) express a positive attitude toward labor unions
 - (C) maximize job security and economic benefits
 - (D) side with administrators in labor disputes
 - (E) quit working prior of retirement age

Passage 18 (18/63)

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

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

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

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

1. In the passage, the author is primarily interested in
 - (A) suggesting an alternative to an outdated research method
 - (B) introducing a new research method that calls an accepted theory into question
 - (C) emphasizing the instability of data gathered from the application of a new scientific method
 - (D) presenting a theory and describing a new method to test that theory
 - (E) initiating a debate about a widely accepted theory
2. The author of the passage would be most likely to agree with which of the following statements about the Milankovitch theory?
 - (A) It is the only possible explanation for the ice ages.
 - (B) It is too limited to provide a plausible explanation for the ice ages, despite recent research findings.
 - (C) It cannot be tested and confirmed until further research on volcanic activity is done.
 - (D) It is one plausible explanation, though not the only one, for the ice ages.
 - (E) It is not a plausible explanation for the ice ages, although it has opened up promising possibilities for future research.
3. It can be inferred from the passage that the isotope record taken from ocean sediments would be less useful to researchers if which of the following were true?
 - (A) It indicated that lighter isotopes of oxygen predominated at certain times.
 - (B) It had far more gaps in its sequence than the record taken from rocks on land.
 - (C) It indicated that climate shifts did not occur every 100,000 years.
 - (D) It indicated that the ratios of oxygen 16 and oxygen 18 in ocean water were not consistent with those found in fresh water.
 - (E) It stretched back for only a million years.
4. According to the passage, which of the following is true of the ratios of oxygen isotopes in ocean sediments?
 - (A) They indicate that sediments found during an ice age contain more calcium carbonate than sediments formed at other times.
 - (B) They are less reliable than the evidence from rocks on land in determining the volume of land ice.
 - (C) They can be used to deduce the relative volume of land ice that was present when the sediment was laid down.

- (D) They are more unpredictable during an ice age than in other climatic conditions.
- (E) They can be used to determine atmospheric conditions at various times in the past.
5. It can be inferred from the passage that precipitation formed from evaporated ocean water has
- (A) the same isotopic ratio as ocean water
- (B) less oxygen 18 than does ocean water
- (C) less oxygen 18 than has the ice contained in continental ice sheets
- (D) a different isotopic composition than has precipitation formed from water on land
- (E) more oxygen 16 than has precipitation formed from fresh water
6. According to the passage, which of the following is (are) true of the ice ages?
- I. The last ice age occurred about 25,000 years ago.
- II. Ice ages have lasted about 10,000 years for at least the last several hundred thousand years.
- III. Ice ages have occurred about every 100,000 years for at least the last several hundred thousand years.
- (A) I only
- (B) II only
- (C) III only
- (D) I and only
- (E) I, II and III
7. It can be inferred from the passage that calcium carbonate shells
- (A) are not as susceptible to deterioration as rocks
- (B) are less common in sediments formed during an ice age
- (C) are found only in areas that were once covered by land ice
- (D) contain radioactive material that can be used to determine a sediment's isotopic composition
- (E) reflect the isotopic composition of the water at the time the shells were formed
8. The purpose of the last paragraph of the passage is to
- (A) offer a note of caution
- (B) introduce new evidence
- (C) present two recent discoveries
- (D) summarize material in the preceding paragraphs
- (E) offer two explanations for a phenomenon

9. According to the passage, one advantage of studying the isotope record of ocean sediments is that it
- (A) corresponds with the record of ice volume taken from rocks on land
 - (B) shows little variation in isotope ratios when samples are taken from different continental locations
 - (C) corresponds with predictions already made by climatologists and experts in other fields
 - (D) confirms the record of ice volume initially established by analyzing variations in volcanic emissions
 - (E) provides data that can be used to substantiate records concerning variations in the amount of sunlight received by the Earth

Passage 19 (19/63)

In contrast to traditional analyses of minority business, the sociological analysis contends that minority business ownership is a group-level phenomenon, in that it is largely dependent upon social-group resources for its development. Specifically, this analysis indicates that support networks play a critical role in starting and maintaining minority business enterprises by providing owners with a range of assistance, from the informal encouragement of family members and friends to dependable sources of labor and clientele from the owner's **ethnic group**. Such self-help networks, which encourage and support ethnic minority entrepreneurs, consist of "primary" institutions, those closest to the individual in shaping his or her behavior and beliefs. They are characterized by the face-to-face association and cooperation of persons united by ties of mutual concern. They form an intermediate social level between the individual and larger "secondary" institutions based on impersonal relationships. Primary institutions comprising the support network include kinship, peer, and neighborhood or community subgroups.

A major function of self-help networks is financial support. Most scholars agree that minority business owners have depended primarily on family funds and ethnic community resources for investment capital. Personal savings have been accumulated, often through frugal living habits that require sacrifices by the entire family and are thus a product of long-term family financial behavior. Additional loans and gifts from relatives, forthcoming because of group obligation rather than narrow investment calculation, have supplemented personal savings. Individual entrepreneurs do not necessarily rely on their kin because they cannot obtain financial backing from commercial resources. They may actually avoid banks because they assume that commercial institutions either cannot comprehend the special needs of minority enterprise or charge unreasonably high interest rates.

Within the larger ethnic community, rotating credit associations have been used to raise capital. These associations are informal clubs of friends and other trusted members of the ethnic group who make regular contributions to a fund that is given to each contributor in rotation. One author estimates that 40 percent of New York Chinatown firms established during 1900-1950 utilized such associations as their initial source of capital. However, recent immigrants and third or fourth generations of older groups now employ rotating credit

associations only occasionally to raise investment funds. Some groups, like Black Americans, found other means of financial support for their entrepreneurial efforts. The first Black-operated banks were created in the late nineteenth century as **depositories** for **dues** collected from fraternal or lodge groups, which themselves had sprung from Black churches. Black banks made limited investments in other Black enterprises. Irish immigrants in American cities organized many building and loan associations to provide capital for home construction and purchase. They, in turn, provided work for many Irish home-building contractor firms. Other ethnic and minority groups followed similar practices in founding ethnic-directed financial institutions.

1. Based on the information in the passage, it would be LEAST likely for which of the following persons to be part of a self-help network?
 - (A) The entrepreneur's childhood friend
 - (B) The entrepreneur's aunt
 - (C) The entrepreneur's religious leader
 - (D) The entrepreneur's neighbor
 - (E) The entrepreneur's banker
2. Which of the following illustrates the working of a self-help support network, as such networks are described in the passage?
 - (A) A public high school offers courses in book-keeping and accounting as part of its open-enrollment adult education program.
 - (B) The local government in a small city sets up a program that helps teen-agers find summer jobs.
 - (C) A major commercial bank offers low-interest loans to experienced individuals who hope to establish their own businesses.
 - (D) A neighborhood-based fraternal organization develops a program of **on-the-job** training for its members and their friends.
 - (E) A community college offers country residents training programs that can lead to certification in a variety of technical trades.
3. Which of the following can be inferred from the passage about rotating credit associations?
 - (A) They were developed exclusively by Chinese immigrants.
 - (B) They accounted for a significant portion of the investment capital used by Chinese immigrants in New York in the early twentieth century.
 - (C) Third-generation members of an immigrant group who started businesses in the 1920's would have been unlikely to rely on them.
 - (D) They were frequently joint endeavors by members of two or three different ethnic groups.
 - (E) Recent immigrants still frequently turn to rotating credit associations instead of banks for investment capital.

4. The passage best supports which of the following statements?
- (A) A minority entrepreneur who had no assistance from family members would not be able to start a business.
 - (B) Self-help networks have been effective in helping entrepreneurs primarily in the last 50 years.
 - (C) Minority groups have developed a range of alternatives to standard financing of business ventures.
 - (D) The financial institutions founded by various ethnic groups owe their success to their unique formal organization.
 - (E) Successful minority-owned businesses succeed primarily because of the personal strengths of their founders.
5. Which of the following best describes the organization of the [second paragraph](#)?
- (A) An argument is delineated, followed by a counter-argument.
 - (B) An assertion is made and several examples are provided to illustrate it.
 - (C) A situation is described and its historical background is then outlined.
 - (D) An example of a phenomenon is given and is then used as a basis for general conclusions.
 - (E) A group of parallel incidents is described and the distinctions among the incidents are then clarified.
6. According to the passage, once a minority-owned business is established, self-help networks contribute which of the following to that business?
- (A) Information regarding possible expansion of the business into nearby communities
 - (B) Encouragement of a business climate that is nearly free of direct competition
 - (C) Opportunities for the business owner to reinvest profits in other minority-owned businesses
 - (D) Contact with people who are likely to be customers of the new business
 - (E) Contact with minority entrepreneurs who are members of other ethnic groups
7. It can be inferred from the passage that traditional analyses of minority business would be LEAST likely to do which of the following?
- (A) Examine businesses primarily in their social contexts
 - (B) Focus on current, rather than historical, examples of business enterprises
 - (C) Stress common experiences of individual entrepreneurs in starting businesses
 - (D) Focus on the maintenance of businesses, rather than means of starting them
 - (E) Focus on the role of individual entrepreneurs in starting a business
8. Which of the following can be inferred from the passage about the Irish building and loan associations mentioned in the last paragraph?
- (A) They were started by third- or fourth-generation immigrants.

- (B) They originated as offshoots of church-related groups.
- (C) They frequently helped Irish entrepreneurs to finance business not connected with construction.
- (D) They contributed to the employment of many Irish construction workers.
- (E) They provided assistance for construction businesses owned by members of other ethnic groups.

Passage 20 (20/63)

Species interdependence in nature confers many benefits on the species involved, but it can also become a point of weakness when one species involved in the relationship is affected by a catastrophe. Thus, flowering plant species dependent on insect pollination, as opposed to self-pollination or wind pollination, could be endangered when the population of insect-pollinators is depleted by the use of pesticides.

In the forests of New Brunswick, for example, various pesticides have been sprayed in the past 25 years in efforts to control the spruce budworm, an economically significant pest. Scientists have now investigated the effects of the spraying of Matacil, one of the anti-budworm agents that is least toxic to insect-pollinators. They studied Matacil's effects on insect mortality in a wide variety of wild insect species and on plant fecundity, expressed as the percentage of the total flowers on an individual plant that actually developed fruit and bore seeds. They found that the most pronounced mortality after the spraying of Matacil occurred among the smaller bees and one family of flies, insects that were all important pollinators of numerous species of plants growing beneath the tree canopy of forests. The fecundity of plants in one common indigenous species, the red-osier dogwood, was significantly reduced in the sprayed areas as compared to that of plants in control plots where Matacil was not sprayed. This species is highly dependent on the insect-pollinators most vulnerable to Matacil. The creeping dogwood, a species similar to the red-osier dogwood, but which is pollinated by large bees, such as bumblebees, showed no significant decline in fecundity. Since large bees are not affected by the spraying of Matacil, these results add weight to the argument that spraying where the pollinators are sensitive to the pesticide used decreases plant fecundity.

The question of whether the decrease in plant fecundity caused by the spraying of pesticides actually causes a decline in the overall population of flowering plant species still remains unanswered. Plant species dependent solely on seeds for survival or dispersal are obviously more vulnerable to any decrease in plant fecundity that occurs, whatever its cause. If, on the other hand, vegetative growth and dispersal (by means of shoots or runners) are available as alternative reproductive strategies for a species, then decreases in plant fecundity may be of little consequence. The fecundity effects described here are likely to have the most profound impact on plant species with all four of the following characteristics: a short life span, a narrow geographic range, an incapacity for vegetative propagation, and a dependence on a small number of insect-pollinator species. Perhaps we should give special attention to the conservation of such plant species since they lack key factors in their defenses against the environmental disruption caused by pesticide use.

1. Which of the following best summarizes the main point of the passage?

- (A) Species interdependence is a point of weakness for some plants, but is generally beneficial to insects involved in pollination.
- (B) Efforts to control the spruce budworm have had deleterious effects on the red-osier dogwood.
- (C) The used of pesticides may be endangering certain plant species dependent on insects for pollination.
- (D) The spraying of pesticides can reduce the fecundity of a plant species, but probably does not affect its overall population stability.
- (E) Plant species lacking key factors in their defenses against human environmental disruption will probably become extinct.
2. According to the author, a flowering plant species whose fecundity has declined due to pesticide spraying may not experience an overall population decline if the plant species can do which of the following?
- (A) Reproduce itself by means of shoots and runners.
- (B) Survive to the end of the growing season.
- (C) Survive in harsh climates.
- (D) Respond to the fecundity decline by producing more flowers.
- (E) Attract large insects as pollinators.
3. The passage suggests that the lack of an observed decline in the fecundity of the creeping dogwood strengthens the researchers conclusions regarding pesticide use because the
- (A) creeping dogwood is a species that does not resemble other forest plants
- (B) creeping dogwood is a species pollinated by a broader range of insect species than are most dogwood species
- (C) creeping dogwood grows primarily in regions that were not sprayed with pesticide, and so served as a control for the experiment
- (D) creeping dogwood is similar to the red-osier dogwood, but its insect pollinators are known to be insensitive to the pesticide used in the study
- (E) geographical range of the creeping dogwood is similar to that of the red-osier dogwood, but the latter species relies less on seeds for reproduction
4. The passage suggests that which of the following is true of the forest regions in New Brunswick sprayed with most anti-budworm pesticides other than Matacil?
- (A) The fecundity of some flowering plants in those regions may have decreased to an even greater degree than in the regions where Matacil is used.
- (B) Insect mortality in those regions occurs mostly among the larger species of insects, such as bumblebees.
- (C) The number of seeds produced by common plant species in those regions is probably comparable to the number produced where Matacil is sprayed.
- (D) Many more plant species have become extinct in those regions than in the

- regions where Matacil is used.
- (E) The spruce budworm is under better control in those regions than in the regions where Matacil is sprayed.
5. It can be inferred that which of the following is true of plant fecundity as it is defined in the passage?
- (A) A plant's fecundity decreases as the percentage of unpollinated flowers on the plant increases.
- (B) A plant's fecundity decreases as the number of flowers produced by the plant decreases.
- (C) A plant's fecundity increases as the number of flowers produced by the plant increases.
- (D) A plant's fecundity is usually low if the plant relies on a small number of insect species for pollination.
- (E) A plant's fecundity is high if the plant can reproduce quickly by means of vegetative growth as well as by the production of seeds.
6. It can be inferred from the passage that which of the following plant species would be LEAST likely to experience a decrease in fecundity as a result of the spraying of a pesticide not directly toxic to plants?
- (A) A flowering tree pollinated by only a few insect species
- (B) A kind of insect-pollinated vine producing few flowers
- (C) A wind-pollinated flowering tree that is short-lived
- (D) A flowering shrub pollinated by a large number of insect species
- (E) A type of wildflower typically pollinated by larger insects
7. Which of the following assumptions most probably underlies the author's tentative recommendation in [lines 51-54](#)?
- (A) Human activities that result in environmental disruption should be abandoned.
- (B) The use of pesticides is likely to continue into the future.
- (C) It is economically beneficial to preserve endangered plant species.
- (D) Preventing the endangerment of a species is less costly than trying to save an already endangered one.
- (E) Conservation efforts aimed at preserving a few well-chosen species are more cost-effective than are broader-based efforts to improve the environment.

Passage 21 (21/63)

Bernard Bailyn has recently reinterpreted the early history of the United States by applying new social research findings on the experiences of European migrants. In his reinterpretation, migration becomes the organizing principle for rewriting the history of preindustrial North America. His approach rests on four separate propositions.

The first of these asserts that residents of early modern England moved regularly about their countryside; migrating to the New World was simply a “natural spillover.” Although at first the colonies held little positive attraction for the English—they would rather have stayed home—by the eighteenth century people increasingly migrated to America because they regarded it as the land of opportunity. Secondly, Bailyn holds that, contrary to the notion that used to flourish in America history textbooks, there was never a typical New World community. For example, the economic and demographic character of early New England towns varied considerably.

Bailyn’s third proposition suggests two general patterns prevailing among the many thousands of migrants: one group came as indentured servants, another came to acquire land. Surprisingly, Bailyn suggests that those who recruited indentured servants were the driving forces of transatlantic migration. These colonial entrepreneurs helped determine the social character of people who came to preindustrial North America. At first, thousands of unskilled laborers were recruited; by the 1730’s, however, American employers demanded skilled artisans.

Finally, Bailyn argues that the colonies were a half-civilized hinterland of the European culture system. He is undoubtedly correct to insist that the colonies were part of an Anglo-American empire. But to divide the empire into English core and colonial periphery, as Bailyn does, devalues the achievements of colonial culture. It is true, as Bailyn claims, that high culture in the colonies never matched that in England. But **what of** seventeenth-century New England, where the settlers created effective laws, built a distinguished university, and published books? Bailyn might respond that New England was exceptional. However, the ideas and institutions developed by New England Puritans had powerful effects on North American culture.

Although Bailyn goes on to apply his approach to some thousands of indentured servants who migrated just prior to the revolution, he fails to link their experience with the political development of the United States. Evidence presented in his work suggests how we might make such a connection. These indentured servants were treated as slaves for the period during which they had sold their time to American employers. It is not surprising that as soon as they served their time they **passed up** good wages in the cities and headed west to ensure their personal independence by acquiring land. Thus, it is in the west that a peculiarly American political culture began, among colonists who were suspicious of authority and intensely anti-aristocratic.

1. Which of the following statements about migrants to colonial North America is supported by information in the passage?
 - (A) A larger percentage of migrants to colonial North America came as indentured servants than as free agents interested in acquiring land.
 - (B) Migrants who came to the colonies as indentured servants were more successful at making a livelihood than were farmers and artisans.
 - (C) Migrants to colonial North America were more successful at acquiring their own land during the eighteenth century than during the seven-tenth century.
 - (D) By the 1730’s, migrants already skilled in a trade were in more demand by

- American employers than were unskilled laborers.
- (E) A significant percentage of migrants who came to the colonies to acquire land were forced to work as field hands for prosperous American farmers.
2. The author of the passage states that Bailyn failed to
- (A) give sufficient emphasis to the cultural and political interdependence of the colonies and England
- (B) describe carefully how migrants of different ethnic backgrounds preserved their culture in the united States
- (C) take advantage of social research on the experiences of colonists who migrated to colonial North America specifically to acquire land
- (D) relate the experience of the migrants to the political values that eventually shaped the character of the United States
- (E) investigate the lives of Europeans before they came to colonial North America to determine more adequately their motivations for migrating
3. Which of the following best summarizes the author's evaluation of Bailyn's fourth proposition?
- (A) It is totally implausible.
- (B) It is partially correct.
- (C) It is highly admirable.
- (D) It is controversial though persuasive.
- (E) It is intriguing though unsubstantiated.
4. According to the passage, Bailyn and the author agree on which of the following statements about the culture of colonial New England?
- (A) High culture in New England never equaled the high culture of England.
- (B) The cultural achievements of colonial New England have generally been unrecognized by historians.
- (C) The colonists imitated the high culture of England, and did not develop a culture that was uniquely their own.
- (D) The southern colonies were greatly influenced by the high culture of New England.
- (E) New England communities were able to create laws and build a university, but unable to create anything innovative in the arts.
5. According to the passage, which of the following is true of English migrants to the colonies during the eighteenth century?
- (A) Most of them were farmers rather than trades people or artisans.
- (B) Most of them came because they were unable to find work in England.
- (C) They differed from other English people in that they were willing to travel.
- (D) They expected that the colonies would offer them increased opportunity.

- (E) They were generally not as educated as the people who remained in England.
6. The author of the passage is primarily concerned with
- (A) comparing several current interpretations of early American history
 - (B) suggesting that new social research on migration should lead to revisions in current interpretations of early American history
 - (C) providing the theoretical framework that is used by most historians in understanding early American history
 - (D) refuting an argument about early American history that has been proposed by social historians
 - (E) discussing a reinterpretation of early American history that is based on new social research on migration
7. It can be inferred from the passage that American history textbooks used to assert that
- (A) many migrants to colonial North America were not successful financially
 - (B) more migrants came to America out of religious or political conviction than came in the hope of acquiring land
 - (C) New England communities were much alike in terms of their economics and demographics
 - (D) many migrants to colonial North America failed to maintain ties with their European relations
 - (E) the level of literacy in New England communities was very high
8. The author of the passage would be most likely to agree with which of the following statements about Bailyn's work?
- (A) Bailyn underestimates the effects of Puritan thought on North American culture.
 - (B) Bailyn overemphasizes the economic dependence of the colonies on Great Britain.
 - (C) Bailyn's description of the colonies as part of an Anglo-American empire is misleading and incorrect.
 - (D) Bailyn failed to test his propositions on a specific group of migrants to colonial North America.
 - (E) Bailyn overemphasizes the experiences of migrants to the New England colonies, and neglects the southern and the western parts of the New World.

Passage 22 (22/63)

Many United States companies have, unfortunately, made the search for legal protection from import competition into a major line of work. Since 1980 the United States International Trade Commission (ITC) has received about 280 complaints alleging damage from imports that benefit from subsidies by foreign governments. Another 340 charge that foreign companies

“dumped” their products in the United States at “less than fair value.” Even when no unfair practices are alleged, the simple claim that an industry has been injured by imports is sufficient grounds to seek relief.

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

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

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

1. The passage is chiefly concerned with
 - (A) arguing against the increased internationalization of United States corporations
 - (B) warning that the application of laws affecting trade frequently has unintended consequences
 - (C) demonstrating that foreign-based firms receive more subsidies from their governments than United States firms receive from the United States government
 - (D) advocating the use of trade restrictions for “dumped” products but not for other imports
 - (E) recommending a uniform method for handling claims of unfair trade practices
2. It can be inferred from the passage that the minimal basis for a complaint to the International Trade Commission is which of the following?
 - (A) A foreign competitor has received a subsidy from a foreign government.
 - (B) A foreign competitor has substantially increased the volume of products shipped to the United States.
 - (C) A foreign competitor is selling products in the United States at less than fair market value.
 - (D) The company requesting import relief has been injured by the sale of imports

in the United States.

- (E) The company requesting import relief has been barred from exporting products to the country of its foreign competitor.
3. The last paragraph performs which of the following functions in the passage?
- (A) It summarizes the discussion thus far and suggests additional areas of research.
- (B) It presents a recommendation based on the evidence presented earlier.
- (C) It discusses an exceptional case in which the results expected by the author of the passage were not obtained.
- (D) It introduces an additional area of concern not mentioned earlier.
- (E) It cites a specific case that illustrates a problem presented more generally in the previous paragraph.
4. The passage warns of which of the following dangers?
- (A) Companies in the United States may receive no protection from imports unless they actively seek protection from import competition.
- (B) Companies that seek legal protection from import competition may incur legal costs that far exceed any possible gain.
- (C) Companies that are United States-owned but operate internationally may not be eligible for protection from import competition under the laws of the countries in which their plants operate.
- (D) Companies that are not United States-owned may seek legal protection from import competition under United States import relief laws.
- (E) Companies in the United States that import raw materials may have to pay duties on those materials.
5. The passage suggests that which of the following is most likely to be true of United States trade laws?
- (A) They will eliminate the practice of “dumping” products in the United States.
- (B) They will enable manufacturers in the United States to compete more profitably outside the United States.
- (C) They will affect United States trade with Canada more negatively than trade with other nations.
- (D) Those that help one unit within a parent company will not necessarily help other units in the company.
- (E) Those that are applied to international companies will accomplish their intended result.
6. It can be inferred from the passage that the author believes which of the following about the complaint mentioned in the last paragraph?
- (A) The ITC acted unfairly toward the complainant in its investigation.
- (B) The complaint violated the intent of import relief laws.

- (C) The response of the ITC to the complaint provided suitable relief from unfair trade practices to the complainant.
- (D) The ITC did not have access to appropriate information concerning the case.
- (E) Each of the companies involved in the complaint acted in its own best interest.
7. According to the passage, companies have the general impression that International Trade Commission import relief practices have
- (A) caused unpredictable fluctuations in volumes of imports and exports
- (B) achieved their desired effect only under unusual circumstances
- (C) actually helped companies that have requested import relief
- (D) been opposed by the business community
- (E) had less impact on international companies than the business community expected
8. According to the passage, the International Trade Commission is involved in which of the following?
- (A) Investigating allegations of unfair import competition
- (B) Granting subsidies to companies in the United States that have been injured by import competition
- (C) Recommending legislation to ensure fair
- (D) Identifying international corporations that wish to build plants in the United States
- (E) Assisting corporations in the United States that wish to compete globally

Passage 23 (23/63)

At the end of the nineteenth century, a rising interest in Native American customs and an increasing desire to understand Native American culture prompted ethnologists to begin recording the life stories of Native American. Ethnologists had a distinct reason for wanting to hear the stories: they were after linguistic or anthropological data that would supplement their own field observations, and they believed that the personal stories, even of a single individual, could increase their understanding of the cultures that they had been observing from without. In addition many ethnologists at the turn of the century believed that Native American manners and customs were rapidly disappearing, and that it was important to preserve for posterity as much information as could be adequately recorded before the cultures disappeared forever.

There were, however, arguments against this method as a way of acquiring accurate and complete information. Franz Boas, for example, described autobiographies as being "of limited value, and useful chiefly for the study of the perversion of truth by memory," while Paul Radin contended that investigators rarely spent enough time with the tribes they were observing, and inevitably derived results too tinged by the investigator's own emotional tone to be reliable.

Even more importantly, as these life stories moved from the traditional oral mode to recorded written form, much was inevitably lost. Editors often decided what elements were

significant to the field research on a given tribe. Native Americans recognized that the essence of their lives could not be communicated in English and that events that they thought significant were often deemed unimportant by their interviewers. Indeed, the very act of telling their stories could force Native American narrators to distort their cultures, as taboos had to be broken to speak the names of dead relatives crucial to their family stories.

Despite all of this, autobiography remains a useful tool for ethnological research: such personal reminiscences and impressions, incomplete as they may be, are likely to throw more light on the working of the mind and emotions than any amount of speculation from an ethnologist or ethnological theorist from another culture.

1. Which of the following best describes the organization of the passage?
 - (A) The historical backgrounds of two currently used research methods are chronicled.
 - (B) The validity of the data collected by using two different research methods is compared.
 - (C) The usefulness of a research method is questioned and then a new method is proposed.
 - (D) The use of a research method is described and the limitations of the results obtained are discussed.
 - (E) A research method is evaluated and the changes necessary for its adaptation to other subject areas are discussed.
2. Which of the following is most similar to the actions of nineteenth-century ethnologists in their editing of the life stories of Native Americans?
 - (A) A witness in a jury trial invokes the Fifth Amendment in order to avoid relating personally incriminating evidence.
 - (B) A stockbroker refuses to divulge the source of her information on the possible future increase in a stock's value.
 - (C) A sports announcer describes the action in a team sport with which he is unfamiliar.
 - (D) A chef purposely excludes the special ingredient from the recipe of his prizewinning dessert.
 - (E) A politician fails to mention in a campaign speech the similarities in the positions held by her opponent for political office and by herself.
3. According to the passage, collecting life stories can be a useful methodology because
 - (A) life stories provide deeper insights into a culture than the hypothesizing of academics who are not members of that culture
 - (B) life stories can be collected easily and they are not subject to invalid interpretations
 - (C) ethnologists have a limited number of research methods from which to choose
 - (D) life stories make it easy to distinguish between the important and unimportant

- features of a culture
- (E) the collection of life stories does not require a culturally knowledgeable investigator
4. Information in the passage suggests that which of the following may be a possible way to eliminate bias in the editing of life stories?
- (A) Basing all inferences made about the culture on an ethnological theory
- (B) Eliminating all of the emotion-laden information reported by the informant
- (C) Translating the informant's words into the researcher's language
- (D) Reducing the number of questions and carefully specifying the content of the questions that the investigator can ask the informant
- (E) Reporting all of the information that the informant provides regardless of the investigator's personal opinion about its intrinsic value
5. The primary purpose of the passage as a whole is to
- (A) question an explanation
- (B) correct a misconception
- (C) critique a methodology
- (D) discredit an idea
- (E) clarify an ambiguity
6. It can be inferred from the passage that a characteristic of the ethnological research on Native Americans conducted during the nineteenth century was the use of which of the following?
- (A) Investigators familiar with the culture under study
- (B) A language other than the informant's for recording life stories
- (C) Life stories as the ethnologist's primary source of information
- (D) Complete transcriptions of informants' descriptions of tribal beliefs
- (E) Stringent guidelines for the preservation of cultural data
7. The passage mentions which of the following as a factor that can affect the accuracy of ethnologists' transcriptions of life stories?
- (A) The informants' social standing within the culture
- (B) The inclusiveness of the theory that provided the basis for the research
- (C) The length of time the researchers spent in the culture under study
- (D) The number of life stories collected by the researchers
- (E) The verifiability of the information provided by the research informants
8. It can be inferred from the passage that the author would be most likely to agree with which of the following statements about the usefulness of life stories as a source of ethnographic information?
- (A) They can be a source of information about how people in a culture view the

world.

- (B) They are most useful as a source of linguistic information.
- (C) They require editing and interpretation before they can be useful.
- (D) They are most useful as a source of information about ancestry.
- (E) They provide incidental information rather than significant insights into a way of life.

Passage 24 (24/63)

All of the cells in a particular plant **start out** with the same complement of genes. How then can these cells differentiate and form structures as different as roots, stems, leaves, and fruits? The answer is that only a small subset of the genes in a particular kind of cell are expressed, or turned on, at a given time. This is accomplished by a complex system of chemical messengers that in plants include hormones and other regulatory molecules. Five major hormones have been identified: auxin, **abscisic acid**, cytokinin, ethylene, and gibberellin. Studies of plants have now identified a new class of regulatory molecules called oligosaccharins.

Unlike the oligosaccharins, the five well-known plant hormones are pleiotropic rather than specific; that is, each has more than one effect on the growth and development of plants. The five has so many simultaneous effects that they are not very useful in artificially controlling the growth of crops. Auxin, for instance, stimulates the rate of cell elongation, causes shoots to grow up and roots to grow down, and inhibits the growth of lateral shoots. Auxin also causes the plant to develop a vascular system, to form lateral roots, and to produce ethylene.

The pleiotropy of the five well-studied plant hormones is somewhat analogous to that of certain hormones in animal. For example, hormones from the hypothalamus in the brain stimulate the anterior lobe of the **pituitary gland** to synthesize and release many different hormones, one of which stimulates the release of hormones from the **adrenal cortex**. These hormones have specific effects on target organs all over the body. One hormone stimulates the thyroid gland, for example, another the **ovarian follicle** cells, and so forth. In other words, there is a hierarchy of hormones. Such a hierarchy may also exist in plants. Oligosaccharins are fragments of the cell wall released by enzymes: different enzymes release different oligosaccharins. There are indications that pleiotropic plant hormones may actually function by activating the enzymes that release these other, more specific chemical messengers from the cell wall.

1. According to the passage, the five well-known plant hormones are not useful in controlling the growth of crops because
 - (A) it is not known exactly what functions the hormones perform
 - (B) each hormone has various effects on plants
 - (C) none of the hormones can function without the others
 - (D) each hormone has different effects on different kinds of plants
 - (E) each hormone works on only a small subset of a cell's genes at any particular time

2. The passage suggests that the place of hypothalamic hormones in the hormonal hierarchies of animals is similar to the place of which of the following in plants?
 - (A) Plant cell walls
 - (B) The complement of genes in each plant cell
 - (C) A subset of a plant cell's gene complement
 - (D) The five major hormones
 - (E) The oligosaccharins
3. The passage suggests that which of the following is a function likely to be performed by an oligosaccharin?
 - (A) To stimulate a particular plant cell to become part of a plant's root system
 - (B) To stimulate the walls of a particular cell to produce other oligosaccharins
 - (C) To activate enzymes that release specific chemical messengers from plant cell walls
 - (D) To duplicate the gene complement in a particular plant cell
 - (E) To produce multiple effects on a particular subsystem of plant cells
4. The author mentions specific effects that auxin has on plant development in order to illustrate the
 - (A) point that some of the effects of plant hormones can be harmful
 - (B) way in which hormones are produced by plants
 - (C) hierarchical nature of the functioning of plant hormones
 - (D) differences among the best-known plant hormones
 - (E) concept of pleiotropy as it is exhibited by plant hormones
5. According to the passage, which of the following best describes a function performed by oligosaccharins?
 - (A) Regulating the daily functioning of a plant's cells
 - (B) Interacting with one another to produce different chemicals
 - (C) Releasing specific chemical messengers from a plant's cell walls
 - (D) Producing the hormones that cause plant cells to differentiate to perform different functions
 - (E) Influencing the development of a plant's cells by controlling the expression of the cells' genes
6. The passage suggests that, unlike the pleiotropic hormones, oligosaccharins could be used effectively to
 - (A) trace the passage of chemicals through the walls of cells
 - (B) pinpoint functions of other plant hormones
 - (C) artificially control specific aspects of the development of crops
 - (D) alter the complement of genes in the cells of plants

- (E) alter the effects of the five major hormones on plant development
7. The author discusses animal hormones primarily in order to
- (A) introduce the idea of a hierarchy of hormones
 - (B) explain the effects that auxin has on plant cells
 - (C) contrast the functioning of plant hormones and animals hormones
 - (D) illustrate the way in which particular hormones affect animals
 - (E) explain the distinction between hormones and regulatory molecules

Passage 25 (25/63)

In 1977 the prestigious Ewha Women's University in Seoul, Korea, announced the opening of the first women's studies program in Asia. Few academic programs have ever received such public attention. In broadcast debates, critics dismissed the program as a betrayal of national identity, an imitation of Western ideas, and a distraction from the real task of national unification and economic development. Even supporters underestimated the program; they thought it would be merely another of the many Western ideas that had already proved useful in Asian culture, akin to airlines, electricity, and the assembly line. The founders of the program, however, realized that neither view was correct. They had some reservations about the applicability of Western feminist theories to the role of women in Asia and felt that such theories should be closely examined. Their approach has thus far yielded important critiques of Western theory, informed by the special experience of Asian women.

For instance, like the Western feminist critique of the Freudian model of the human psyche, the Korean critique finds Freudian theory culture-bound, but in ways different from those cited by Western theorists. The Korean theorists claim that Freudian theory assumes the universality of the Western nuclear, male-headed family and focuses on the personality formation of the individual, independent of society. An analysis based on such assumptions could be valid for a highly competitive, individualistic society. In the Freudian family drama, family members are assumed to be engaged in a Darwinian struggle against each other—father against son and sibling against sibling. Such a concept projects the competitive model of Western society onto human personalities. But in the Asian concept of personality there is no ideal attached to individualism or to the independent self. The Western model of personality development does not explain major characteristics of the Korean personality, which is social and group-centered. The "self" is a social being defined by and acting in a group, and the well-being of both men and women is determined by the equilibrium of the group, not by individual self-assertion. The ideal is one of interdependency.

In such a context, what is recognized as "dependency" in Western psychiatric terms is not, in Korean terms, an admission of weakness or failure. All this bears directly on the Asian perception of men's and women's psychology because men are also "dependent." In Korean culture, men cry and otherwise easily show their emotions, something that might be considered a betrayal of masculinity in Western culture. In the kinship-based society of Korea, four generations may live in the same house, which means that people can be sons and daughters all their lives, whereas in Western culture, the roles of husband and son, wife and daughter, are often incompatible.

1. Which of the following best summarizes the content of the passage?
 - (A) A critique of a particular women's studies program
 - (B) A report of work in social theory done by a particular women's studies program
 - (C) An assessment of the strengths and weaknesses of a particular women's studies program
 - (D) An analysis of the philosophy underlying women's studies programs
 - (E) An abbreviated history of Korean women's studies programs
2. It can be inferred from the passage that Korean scholars in the field of women's studies undertook an analysis of Freudian theory as a response to which of the following?
 - (A) Attacks by critics of the Ewha women's studies program
 - (B) The superficiality of earlier critiques of Freudian theory
 - (C) The popularity of Freud in Korean psychiatric circles
 - (D) Their desire to encourage Korean scholars to adopt the Freudian model
 - (E) Their assessment of the relevance and limitations of Western feminist theory with respect to Korean culture
3. Which of the following conclusions about the introduction of Western ideas to Korean society can be supported by information contained in the passage?
 - (A) Except for technological innovations, few Western ideas have been successfully transplanted into Korean society.
 - (B) The introduction of Western ideas to Korean society is viewed by some Koreans as a challenge to Korean identity.
 - (C) The development of the Korean economy depends heavily on the development of new academic programs modeled after Western programs.
 - (D) The extent to which Western ideas must be adapted for acceptance by Korean society is minimal.
 - (E) The introduction of Western ideas to Korean society accelerated after 1977.
4. It can be inferred from the passage that the broadcast media in Korea considered the establishment of the Ewha women's studies program
 - (A) praiseworthy
 - (B) insignificant
 - (C) newsworthy
 - (D) imitative
 - (E) incomprehensible
5. It can be inferred from the passage that the position taken by some of the supporters of the Ewha women's studies program was problematic to the founders of the program because those supporters

- (A) assumed that the program would be based on the uncritical adoption of Western theory
- (B) failed to show concern for the issues of national unification and economic development
- (C) were unfamiliar with Western feminist theory
- (D) were not themselves scholars in the field of women's studies
- (E) accepted the universality of Freudian theory
6. Which of the following statements is most consistent with the view of personality development held by the Ewha women's studies group?
- (A) Personality development occurs in identifiable stages, beginning with dependency in childhood and ending with independence in adulthood.
- (B) Any theory of personality development, in order to be valid, must be universal.
- (C) Personality development is influenced by the characteristics of the society in which a person lives.
- (D) Personality development is hindered if a person is not permitted to be independent.
- (E) No theory of personality development can account for the differences between Korean and Western culture.
7. Which of the following statements about the Western feminist critique of Freudian theory can be supported by information contained in the passage?
- (A) It recognizes the influence of Western culture on Freudian theory.
- (B) It was written after 1977.
- (C) It acknowledges the universality of the nuclear, male-headed family.
- (D) It challenges Freud's analysis of the role of daughters in Western society.
- (E) It fails to address the issue of competitiveness in Western society.
8. According to the passage, critics of the Ewha women's studies program cited the program as a threat to which of the following?
- I. National identity
- II. National unification
- III. Economic development
- IV. Family integrity
- (A) I only
- (B) I and II only
- (C) I, II, and III only
- (D) II, III, and IV only
- (E) I, II, III, and IV

Passage 26 (26/63)

In choosing a method for determining climatic conditions that existed in the past, paleoclimatologists invoke four principal criteria. First, the material—rocks, lakes, vegetation, etc.—on which the method relies must be widespread enough to provide plenty of information, since analysis of material that is rarely encountered will not permit correlation with other regions or with other periods of geological history. Second, in the process of formation, the material must have received an environmental signal that reflects a change in climate and that can be deciphered by modern physical or chemical means. Third, at least some of the material must have retained the signal unaffected by subsequent changes in the environment. Fourth, it must be possible to determine the time at which the inferred climatic conditions held. This last criterion is more easily met in dating marine sediments, because dating of only a small number of layers in a marine sequence allows the age of other layers to be estimated fairly reliably by extrapolation and interpolation. By contrast, because sedimentation is much less continuous in continental regions, estimating the age of a continental bed from the known ages of beds above and below is more risky.

One very old method used in the investigation of past climatic conditions involves the measurement of water levels in ancient lakes. In temperate regions, there are enough lakes for correlations between them to give us a reliable picture. In arid and semiarid regions, on the other hand, the small number of lakes and the great distances between them reduce the possibilities for correlation. Moreover, since lake levels are controlled by rates of evaporation as well as by precipitation, the interpretation of such levels is ambiguous. For instance, the fact that lake levels in the semiarid southwestern United States appear to have been higher during the last ice age than they are now was at one time attributed to increased precipitation. On the basis of snow-line elevations, however, it has been concluded that the climate then was not necessarily wetter than it is now, but rather that both summers and winters were cooler, resulting in reduced evaporation.

Another problematic method is to reconstruct former climates on the basis of pollen profiles. The type of vegetation in a specific region is determined by identifying and counting the various pollen grains found there. Although the relationship between vegetation and climate is not as direct as the relationship between climate and lake levels, the method often works well in the temperate zones. In arid and semiarid regions in which there is not much vegetation, however, small changes in one or a few plant types can change the picture dramatically, making accurate correlations between neighboring areas difficult to obtain.

1. Which of the following statements about the difference between marine and continental sedimentation is supported by information in the passage?
 - (A) Data provided by dating marine sedimentation is more consistent with researchers' findings in other disciplines than is data provided by dating continental sedimentation.
 - (B) It is easier to estimate the age of a layer in a sequence of continental sedimentation than it is to estimate the age of a layer in a sequence of marine sedimentation.

- (C) Marine sedimentation is much less widespread than continental sedimentation.
 - (D) Researchers are more often forced to rely on extrapolation when dating a layer of marine sedimentation than when dating a layer of continental sedimentation.
 - (E) Marine sedimentation is much more continuous than is continental sedimentation.
2. Which of the following statements best describes the organization of the passage as a whole?
- (A) The author describes a method for determining past climatic conditions and then offers specific examples of situations in which it has been used.
 - (B) The author discusses the method of dating marine and continental sequences and then explains how dating is more difficult with lake levels than with pollen profiles.
 - (C) The author describes the common requirements of methods for determining past climatic conditions and then discusses examples of such methods.
 - (D) The author describes various ways of choosing a material for determining past climatic conditions and then discusses how two such methods have yielded contradictory data.
 - (E) The author describes how methods for determining past climatic conditions were first developed and then describes two of the earliest known methods.
3. It can be inferred from the passage that paleoclimatologists have concluded which of the following on the basis of their study of snow-line elevations in the southwestern United States?
- (A) There is usually more precipitation during an ice age because of increased amounts of evaporation.
 - (B) There was less precipitation during the last ice age than there is today.
 - (C) Lake levels in the semiarid southwestern United States were lower during the last ice age than they are today.
 - (D) During the last ice age, cooler weather led to lower lake levels than paleoclimatologists had previously assumed.
 - (E) The high lake levels during the last ice age may have been a result of less evaporation rather than more precipitation.
4. Which of the following would be the most likely topic for a paragraph that logically continues the passage?
- (A) The kinds of plants normally found in arid regions
 - (B) The effect of variation in lake levels on pollen distribution
 - (C) The material best suited to preserving signals of climatic changes
 - (D) Other criteria invoked by paleoclimatologists when choosing a method to determine past climatic conditions

- (E) A third method for investigating past climatic conditions
5. The author discusses lake levels in the southwestern United States in order to
- (A) illustrate the mechanics of the relationship between lake level, evaporation, and precipitation
 - (B) provide an example of the uncertainty involved in interpreting lake levels
 - (C) prove that there are not enough ancient lakes with which to make accurate correlations
 - (D) explain the effects of increased rates of evaporation on levels of precipitation
 - (E) suggest that snow-line elevations are invariably more accurate than lake levels in determining rates of precipitation at various points in the past
6. It can be inferred from the passage that an environmental signal found in geological material would not be useful to paleoclimatologists if it
- (A) had to be interpreted by modern chemical means
 - (B) reflected a change in climate rather than a long-term climatic condition
 - (C) was incorporated into a material as the material was forming
 - (D) also reflected subsequent environmental changes
 - (E) was contained in a continental rather than a marine sequence
7. According to the passage, the material used to determine past climatic conditions must be widespread for which of the following reasons?
- I. Paleoclimatologists need to make comparisons between periods of geological history.
 - II. Paleoclimatologists need to compare materials that have supported a wide variety of vegetation.
 - III. Paleoclimatologists need to make comparisons with data collected in other regions.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) I and III only
 - (E) II and III only
8. Which of the following can be inferred from the passage about the study of past climates in arid and semiarid regions?
- (A) It is sometimes more difficult to determine past climatic conditions in arid and semiarid regions than in temperate regions.
 - (B) Although in the past more research has been done on temperate regions, paleoclimatologists have recently turned their attention to arid and semiarid regions.
 - (C) Although more information about past climates can be gathered in arid and

semiarid than in temperate regions, dating this information is more difficult.

- (D) It is difficult to study the climatic history of arid and semiarid regions because their climates have tended to vary more than those of temperate regions.
- (E) The study of past climates in arid and semiarid regions has been neglected because temperate regions support a greater variety of plant and animal life.

Passage 27 (27/63)

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

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

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

Every company I know that has freed itself from the paradox has done so, in part, by developing and implementing a manufacturing strategy. Such a strategy focuses on the manufacturing structure and on equipment and process technology. In one company a manufacturing strategy that allowed different areas of the factory to specialize in different markets replaced the conventional cost-cutting approach; within three years the company regained its competitive advantage. Together with such strategies, successful companies are

also encouraging managers to focus on a wider set of objectives besides cutting costs. There is hope for manufacturing, but it clearly rests on a different way of managing.

1. The author of the passage is primarily concerned with
 - (A) summarizing a thesis
 - (B) recommending a different approach
 - (C) comparing points of view
 - (D) making a series of predictions
 - (E) describing a number of paradoxes
2. It can be inferred from the passage that the manufacturers mentioned in line 2 expected that the measures they implemented would
 - (A) encourage innovation
 - (B) keep labor output constant
 - (C) increase their competitive advantage
 - (D) permit business upturns to be more easily predicted
 - (E) cause managers to focus on a wider set of objectives
3. The primary function of the first paragraph of the passage is to
 - (A) outline in brief the author's argument
 - (B) anticipate challenges to the prescriptions that follow
 - (C) clarify some disputed definitions of economic terms
 - (D) summarize a number of long-accepted explanations
 - (E) present a historical context for the author's observations
4. The author refers to Abernathy's study (line 36) most probably in order to
 - (A) qualify an observation about one rule governing manufacturing
 - (B) address possible objections to a recommendation about improving manufacturing competitiveness
 - (C) support an earlier assertion about one method of increasing productivity
 - (D) suggest the centrality in the United States economy of a particular manufacturing industry
 - (E) given an example of research that has questioned the wisdom of revising a manufacturing strategy
5. The author's attitude toward the culture in most factories is best described as
 - (A) cautious
 - (B) critical
 - (C) disinterested
 - (D) respectful
 - (E) adulatory

6. In the passage, the author includes all of the following EXCEPT
- (A) personal observation
 - (B) a business principle
 - (C) a definition of productivity
 - (D) an example of a successful company
 - (E) an illustration of a process technology
7. The author suggests that implementing conventional cost-cutting as a way of increasing manufacturing competitiveness is a strategy that is
- (A) flawed and ruinous
 - (B) shortsighted and difficult to sustain
 - (C) popular and easily accomplished
 - (D) useful but inadequate
 - (E) misunderstood but promising

Passage 28 (28/63)

The settlement of the United States has **occupied** traditional historians since 1893 when Frederick Jackson Turner developed his *Frontier Thesis*, a thesis that explained American development in terms of westward expansion. From the perspective of women's history, Turner's exclusively masculine assumptions constitute a major drawback: his defenders and critics alike have reconstructed men's, not women's, lives on the frontier. However, precisely because of this masculine orientation, revising the *Frontier Thesis* by focusing on women's experience introduces new themes into women's history—woman as lawmaker and entrepreneur—and, consequently, new interpretations of women's relationship to capital, labor, and statute.

Turner claimed that the frontier produced the individualism that is the hallmark of American culture, and that this individualism in turn promoted democratic institutions and economic equality. He argued for the frontier as an agent of social change. Most novelists and historians writing in the early to midtwentieth century who considered women in the West, when they considered women at all, fell under Turner's spell. In their works these authors tended to glorify women's contributions to frontier life. Western women, in Turnerian tradition, were a fiercely independent, capable, and durable **lot, free from** the constraints binding their eastern sisters. This interpretation implied that the West provided a congenial environment where women could aspire to their own goals, free from constrictive stereotypes and **sexist** attitudes. In Turnerian terminology, the frontier had furnished "a gate of escape from the bondage of the past."

By the middle of the twentieth century, the *Frontier Thesis* **fell into** disfavor among historians. Later, Reactionist writers took the view that frontier women were lonely, displaced persons in a hostile milieu that intensified the worst aspects of gender relations. The renaissance of the feminist movement during the 1970's led to the Stasist school, which sidestepped the good bad dichotomy and argued that frontier women lived lives similar to the live of women in the East. In one now-standard text, Faragher demonstrated the persistence of

the “cult of true womanhood” and the illusionary quality of change on the westward journey. Recently the Stasist position has been revised but not entirely discounted by new research.

1. The primary purpose of the passage is to
 - (A) provide a framework within which the history of women in nineteenth-century America can be organized
 - (B) discuss divergent interpretations of women’s experience on the western frontier
 - (C) introduce a new hypothesis about women’s experience in nineteenth-century America
 - (D) advocate an empirical approach to women’s experience on the western frontier
 - (E) resolve ambiguities in several theories about women’s experience on the western frontier
2. Which of the following can be inferred about the novelists and historians mentioned in [lines 19-20](#)?
 - (A) They misunderstood the powerful influence of constrictive stereotypes on women in the East.
 - (B) They assumed that the frontier had offered more opportunities to women than had the East.
 - (C) They included accurate information about women’s experiences on the frontier.
 - (D) They underestimated the endurance and fortitude of frontier women.
 - (E) They agreed with some of Turner’s assumptions about frontier women, but disagreed with other assumptions that he made.
3. Which of the following, if true, would provide additional evidence for the Stasists’ argument as it is described in the passage?
 - (A) Frontier women relied on smaller support groups of relatives and friends in the West than they had in the East.
 - (B) The urban frontier in the West offered more occupational opportunity than the agricultural frontier offered.
 - (C) Women participated more fully in the economic decisions of the family group in the West than they had in the East.
 - (D) Western women received financial compensation for labor that was comparable to what women received in the East.
 - (E) Western women did not have an effect on divorce laws, but lawmakers in the West were more responsive to women’s concerns than lawmakers in the East were.
4. According to the passage, Turner makes which of the following connections in his Frontier Thesis?

- I. A connection between American individualism and economic equality
 - II. A connection between geographical expansion and social change
 - III. A connection between social change and financial prosperity
- (A) I only
- (B) II only
- (C) III only
- (D) I and II only
- (E) I, II and III
5. It can be inferred that which of the following statements is consistent with the Reactionist position as it is described in the passage?
- (A) Continuity, not change, marked women's lives as they moved from East to West.
- (B) Women's experience on the North American frontier has not received enough attention from modern historians.
- (C) Despite its rigors, the frontier offered women opportunities that had not been available in the East.
- (D) Gender relations were more difficult for women in the West than they were in the East.
- (E) Women on the North American frontier adopted new roles while at the same time reaffirming traditional roles.
6. Which of the following best describes the organization of the passage?
- (A) A current interpretation of a phenomenon is described and then ways in which it was developed are discussed.
- (B) Three theories are presented and then a new hypothesis that discounts those theories is described.
- (C) An important theory and its effects are discussed and then ways in which it has been revised are described.
- (D) A controversial theory is discussed and then viewpoints both for and against it are described.
- (E) A phenomenon is described and then theories concerning its correctness are discussed.
7. Which of the following is true of the Stasist School as it is described in the passage?
- (A) It provides new interpretations of women's relationship to work and the law.
- (B) It resolves some of the ambiguities inherent in Turnerian and Reactionist thought.
- (C) It has recently been discounted by new research gathered on women's experience.
- (D) It avoids extreme positions taken by other writers on women's history.

- (E) It was the first school of thought to suggest substantial revisions to the *Frontier Thesis*.

Passage 29 (29/63)

Studies of the Weddell seal in the laboratory have described the physiological mechanisms that allow the seal to cope with the extreme oxygen deprivation that occurs during its longest dives, which can extend 500 meters below the ocean's surface and last for over 70 minutes. Recent field studies, however, suggest that during more typical dives in the wild, this seal's physiological behavior is different.

In the laboratory, when the seal dives below the surface of the water and stops breathing, its heart beats more slowly, requiring less oxygen, and its arteries become constricted, ensuring that the seal's blood remains concentrated near those organs most crucial to its ability to navigate underwater. The seal essentially shuts off the flow of blood to other organs, which either stop functioning until the seal surfaces or switch to an anaerobic (oxygen-independent) metabolism. The latter results in the production of large amounts of lactic acid which can adversely affect the pH of the seal's blood, but since the anaerobic metabolism occurs only in those tissues which have been isolated from the seal's blood supply, the lactic acid is released into the seal's blood only after the seal surfaces, when the lungs, liver, and other organs quickly clear the acid from the seal's bloodstream.

Recent field studies, however, reveal that on dives in the wild, the seal usually heads directly for its prey and returns to the surface in less than twenty minutes. The absence of high levels of lactic acid in the seal's blood after such dives suggests that during them, the seal's organs do not resort to the anaerobic metabolism observed in the laboratory, but are supplied with oxygen from the blood. The seal's longer excursions underwater, during which it appears to be either exploring distant routes or evading a predator, do evoke the diving response seen in the laboratory. But why do the seal's laboratory dives always evoke this response, regardless of their length or depth? Some biologists speculate that because in laboratory dives the seal is forcibly submerged, it does not know how long it will remain underwater and so prepares for the worst.

1. The passage provides information to support which of the following generalizations?
 - (A) Observations of animals' physiological behavior in the wild are not reliable unless verified by laboratory studies.
 - (B) It is generally less difficult to observe the physiological behavior of an animal in the wild than in the laboratory.
 - (C) The level of lactic acid in an animal's blood is likely to be higher when it is searching for prey than when it is evading predators.
 - (D) The level of lactic acid in an animal's blood is likely to be lowest during those periods in which it experiences oxygen deprivation.
 - (E) The physiological behavior of animals in a laboratory setting is not always consistent with their physiological behavior in the wild.

2. It can be inferred from the passage that by describing the Weddell seal as preparing “for the worst” (line 41), biologists mean that it
- (A) prepares to remain underwater for no longer than twenty minutes
 - (B) exhibits physiological behavior similar to that which characterizes dives in which it heads directly for its prey
 - (C) exhibits physiological behavior similar to that which characterizes its longest dives in the wild
 - (D) begins to exhibit predatory behavior
 - (E) clears the lactic acid from its blood before attempting to dive
3. The passage suggests that during laboratory dives, the pH of the Weddell seal’s blood is not adversely affected by the production of lactic acid because
- (A) only those organs that are essential to the seal’s ability to navigate underwater revert to an anaerobic mechanism
 - (B) the seal typically reverts to an anaerobic metabolism only at the very end of the dive
 - (C) organs that revert to an anaerobic metabolism are temporarily isolated from the seal’s bloodstream
 - (D) oxygen continues to be supplied to organs that clear lactic acid from the seal’s bloodstream
 - (E) the seal remains submerged for only short periods of time
4. Which of the following best summarizes the main point of the passage?
- (A) Recent field studies have indicated that descriptions of the physiological behavior of the Weddell seal during laboratory dives are not applicable to its most typical dives in the wild.
 - (B) The Weddell seal has developed a number of unique mechanisms that enable it to remain submerged at depths of up to 500 meters for up to 70 minutes.
 - (C) The results of recent field studies have made it necessary for biologists to revise previous perceptions of how the Weddell seal behaves physiologically during its longest dives in the wild.
 - (D) Biologists speculate that laboratory studies of the physiological behavior of seals during dives lasting more than twenty minutes would be more accurate if the seals were not forcibly submerged.
 - (E) How the Weddell seal responds to oxygen deprivation during its longest dives appears to depend on whether the seal is searching for prey or avoiding predators during such dives.
5. According to the author, which of the following is true of the laboratory studies mentioned in [line 1](#)?
- (A) They fail to explain how the seal is able to tolerate the increased production of lactic acid by organs that revert to an anaerobic metabolism during its longest dives in the wild.

- (B) They present an oversimplified account of mechanisms that the Weddell seal relies on during its longest dives in the wild.
- (C) They provide evidence that undermines the view that the Weddell seal relies on an anaerobic metabolism during its most typical dives in the wild.
- (D) They are based on the assumption that Weddell seals rarely spend more than twenty minutes underwater on a typical dive in the wild.
- (E) They provide an accurate account of the physiological behavior of Weddell seals during those dives in the wild in which they are either evading predators or exploring distant routes.
6. The author cites which of the following as characteristic of the Weddell seal's physiological behavior during dives observed in the laboratory?
- I. A decrease in the rate at which the seal's heart beats
- II. A constriction of the seal's arteries
- III. A decrease in the levels of lactic acid in the seal's blood
- IV. A temporary halt in the functioning of certain organs
- (A) I and III only
- (B) II and IV only
- (C) II and III only
- (D) I, II, and IV only
- (E) I, III, and IV only
7. The passage suggests that because Weddell seals are forcibly submerged during laboratory dives, they do which of the following?
- (A) Exhibit the physiological responses that are characteristic of dives in the wild that last less than twenty minutes.
- (B) Exhibit the physiological responses that are characteristic of the longer dives they undertake in the wild.
- (C) Cope with oxygen deprivation less effectively than they do on typical dives in the wild.
- (D) Produce smaller amounts of lactic acid than they do on typical dives in the wild.
- (E) Navigate less effectively than they do on typical dives in the wild.

Passage 30 (30/63)

Since the early 1970's, historians have begun to devote serious attention to the working class in the United States. Yet while we now have studies of working-class communities and culture, we know remarkably little of worklessness. When historians have paid any attention at all to unemployment, they have focused on the Great Depression of the 1930's. The narrowness of this perspective ignores the pervasive recessions and joblessness of the previous decades, as Alexander Keyssar shows in his recent book. Examining the period 1870-1920, Keyssar

concentrates on Massachusetts, where the historical materials are particularly rich, and the findings applicable to other industrial areas.

The unemployment rates that Keyssar calculates appear to be relatively modest, at least by Great Depression standards: during the worst years, in the 1870's and 1890's, unemployment was around 15 percent. Yet Keyssar rightly understands that a better way to measure the impact of unemployment is to calculate unemployment frequencies—measuring the percentage of workers who experience any unemployment **in the course of** a year. Given this perspective, joblessness looms much larger.

Keyssar also scrutinizes unemployment patterns according to skill level, ethnicity, race, age, class, and gender. He finds that rates of joblessness differed primarily according to class: those in middle-class and white-collar occupations were far less likely to be unemployed. Yet the impact of unemployment on a specific class was not always the same. Even when dependent on the same trade, adjoining communities could have dramatically different unemployment rates. Keyssar uses these differential rates to help explain a phenomenon that has puzzled historians—the startlingly high rate of geographical mobility in the nineteenth-century United States. But mobility was not the dominant working-class strategy for coping with unemployment, nor was assistance from private charities or state agencies. Self-help and the help of kin got most workers through jobless spells.

While Keyssar might have spent more time developing the implications of his findings on joblessness for contemporary public policy, his study, in its thorough research and creative use of quantitative and qualitative evidence, is a model of historical analysis.

1. The passage is primarily concerned with
 - (A) recommending a new course of investigation
 - (B) summarizing and assessing a study
 - (C) making distinctions among categories
 - (D) criticizing the current state of a field
 - (E) comparing and contrasting two methods for calculating data
2. The passage suggests that before the early 1970's, which of the following was true of the study by historians of the working class in the United States?
 - (A) The study was infrequent or superficial, or both.
 - (B) The study was repeatedly criticized for its allegedly narrow focus.
 - (C) The study relied more on qualitative than quantitative evidence.
 - (D) The study focused more on the working-class community than on working-class culture.
 - (E) The study ignored working-class joblessness during the Great Depression.
3. According to the passage, which of the following is true of Keyssar's findings concerning unemployment in Massachusetts?
 - (A) They tend to contradict earlier findings about such unemployment.
 - (B) They are possible because Massachusetts has the most easily accessible historical records.

- (C) They are the first to mention the existence of high rates of geographical mobility in the nineteenth century.
- (D) They are relevant to a historical understanding of the nature of unemployment in other states.
- (E) They have caused historians to reconsider the role of the working class during the Great Depression.
4. According to the passage, which of the following is true of the unemployment rates mentioned in line 15?
- (A) They hovered, on average, around 15 percent during the period 1870-1920.
- (B) They give less than a full sense of the impact of unemployment on working-class people.
- (C) They overestimate the importance of middle class and white-collar unemployment.
- (D) They have been considered by many historians to underestimate the extent of working-class unemployment.
- (E) They are more open to question when calculated for years other than those of peak recession.
5. Which of the following statements about the unemployment rate during the Great Depression can be inferred from the passage?
- (A) It was sometimes higher than 15 percent.
- (B) It has been analyzed seriously only since the early 1970's.
- (C) It can be calculated more easily than can unemployment frequency.
- (D) It was never as high as the rate during the 1870's.
- (E) It has been shown by Keyssar to be lower than previously thought.
6. According to the passage, Keyssar considers which of the following to be among the important predictors of the likelihood that a particular person would be unemployed in late nineteenth-century Massachusetts?
- I. The person's class
- II. Where the person lived or worked
- III. The person's age
- (A) I only
- (B) II only
- (C) I and II only
- (D) I and III only
- (E) I, II, and III
7. The author views Keyssar's study with
- (A) impatient disapproval
- (B) wary concern

- (C) polite skepticism
(D) scrupulous neutrality
(E) qualified admiration
8. Which of the following, if true, would most strongly support Keyssar's findings as they are described by the author?
- (A) Boston, Massachusetts, and Quincy, Massachusetts, adjoining communities, had a higher rate of unemployment for working-class people in 1870 than in 1890.
- (B) White-collar professionals such as attorneys had as much trouble as day laborers in maintaining a steady level of employment throughout the period 1870-1920.
- (C) Working-class women living in Cambridge, Massachusetts, were more likely than working-class men living in Cambridge to be unemployed for some period of time during the year 1873.
- (D) In the 1890's, shoe-factory workers moved away in large numbers from Chelmsford, Massachusetts, where shoe factories were being replaced by other industries, to adjoining West Chelmsford, where the shoe industry flourished.
- (E) In the late nineteenth century, workers of all classes in Massachusetts were more likely than workers of all classes in other states to move their place of residence from one location to another within the state.

Passage 31 (31/63)

The number of women directors appointed to corporate boards in the United States has increased dramatically, but the ratio of female to male directors remains low. Although pressure to recruit women directors, unlike that to employ women in the general work force, does not derive from legislation, it is nevertheless real.

Although small companies were the first to have women directors, large corporations currently have a higher percentage of women on their boards. When the chairs of these large corporations began recruiting women to serve on boards, they initially sought women who were chief executive officers (CEO's) of large corporations. However, such women CEO's are still rare. In addition, the ideal of six CEO's (female or male) serving on the board of each of the largest corporations is realizable only if every CEO serves on six boards. This raises the specter of director over-commitment and the resultant dilution of contribution. Consequently, the chairs next sought women in business who had the equivalent of CEO experience. However, since it is only recently that large numbers of women have begun to rise in management, the chairs began to recruit women of high achievement outside the business world. Many such women are well known for their contributions in government, education, and the nonprofit sector. The fact that the women from these sectors who were appointed were often acquaintances of the boards' chairs seems quite reasonable: chairs have always considered it important for directors to **interact** comfortably in the boardroom.

Although many successful women from outside the business world are unknown to corporate leaders, these women are particularly qualified to serve on boards because of the changing nature of corporations. Today a company's ability to be responsive to the concerns of the community and the environment can influence that company's growth and survival. Women are uniquely positioned to be responsive to some of these concerns. Although conditions have changed, it should be remembered that most directors of both sexes are over fifty years old. Women of that generation were often encouraged to direct their attention toward efforts to improve the community. This fact is reflected in the **career development** of most of the outstandingly successful women of the generation now in their fifties, who currently serve on corporate boards: 25 percent are in education and 22 percent are in government, law, and the nonprofit sector.

One organization of women directors is helping business become more responsive to the changing needs of society by raising the level of corporate awareness about social issues, such as problems with the economy, government regulation, the aging population, and the environment. This organization also serves as a resource center of information on accomplished women who are potential candidates for corporate boards.

1. The author of the passage would be most likely to agree with which of the following statements about achievement of the "ideal" mentioned in [line 14](#)?
 - (A) It has only recently become a possibility.
 - (B) It would be easier to meet if more CEO's were women.
 - (C) It is very close to being a reality for most corporate boards.
 - (D) It might affect the quality of directors' service to corporations.
 - (E) It would be more realizable if CEO's had a more extensive range of business experience.
2. According to the passage, the pressure to appoint women to corporate boards differs from the pressure to employ women in the work force in which of the following ways?
 - (A) Corporate boards are under less pressure because they have such a small number of openings.
 - (B) Corporate boards have received less pressure from stockholders, consumers, and workers within companies to include women on their boards.
 - (C) Corporate boards have received less pressure from the media and the public to include women on their boards.
 - (D) Corporations have only recently been pressured to include women on their boards.
 - (E) Corporations are not subject to statutory penalty for failing to include women on their boards.
3. All of the following are examples of issues that the organization described in the [last paragraph](#) would be likely to advise corporations on EXCEPT
 - (A) long-term inflation

- (B) health and safety regulations
 - (C) retirement and pension programs
 - (D) the energy shortage
 - (E) how to develop new markets
4. It can be inferred from the passage that, when seeking to appoint new members to a corporation's board, the chair traditionally looked for candidates who
- (A) had legal and governmental experience
 - (B) had experience dealing with community affairs
 - (C) could work easily with other members of the board
 - (D) were already involved in establishing policy for that corporation
 - (E) had influential connections outside the business world
5. According to the passage, which of the following is true about women outside the business world who are currently serving on corporate boards?
- (A) Most do not serve on more than one board.
 - (B) A large percentage will eventually work on the staff of corporations.
 - (C) Most were already known to the chairs of the board to which they were appointed.
 - (D) A larger percentage are from government and law than are from the nonprofit sector.
 - (E) Most are less than fifty years old.
6. The passage suggests that corporations of the past differ from modern corporations in which of the following ways?
- (A) Corporations had greater input on government policies affecting the business community.
 - (B) Corporations were less responsive to the financial needs of their employees.
 - (C) The ability of a corporation to keep up with changing markets was not a crucial factor in its success.
 - (D) A corporation's effectiveness in coping with community needs was less likely to affect its growth and prosperity.
 - (E) Corporations were subject to more stringent government regulations.
7. Which of the following best describes the organization of the passage?
- (A) A problem is described, and then reasons why various proposed solutions succeeded or failed are discussed.
 - (B) A problem is described, and then an advantage of resolving it is offered.
 - (C) A problem is described, and then reasons for its continuing existence are summarized.
 - (D) The historical origins of a problem are described, and then various measures that have successfully resolved it are discussed.

- (E) The causes of a problem are described, and then its effects are discussed.
8. It can be inferred from the passage that factors making women uniquely valuable members of modern corporate boards would include which of the following?
- I. The nature of modern corporations
 - II. The increased number of women CEO's
 - III. The careers pursued by women currently available to serve on corporate boards
- (A) I only
(B) II only
(C) III only
(D) I and III only
(E) I, II, and III

Passage 32 (32/63)

Increasingly, historians are blaming diseases imported from the Old World for the staggering disparity between the indigenous population of America in 1492—new estimates of which soar as high as 100 million, or approximately one-sixth of the human race at that time—and the few million **full-blooded** Native Americans alive at the end of the nineteenth century. There is no doubt that chronic disease was an important factor in the precipitous decline, and it is highly probable that the greatest killer was **epidemic disease**, especially as manifested in virgin-soil epidemics.

Virgin-soil epidemics are those in which the populations at risk have had no previous contact with the diseases that strike them and are therefore immunologically almost defenseless. That virgin-soil epidemics were important in American history is strongly indicated by evidence that a number of dangerous maladies—smallpox, measles, malaria, yellow fever, and undoubtedly several more—were unknown in the pre-Columbian New World. The effects of their sudden introduction are demonstrated in the early chronicles of America, which contain reports of horrendous epidemics and steep population declines, confirmed in many cases by recent quantitative analyses of Spanish tribute records and other sources. The evidence provided by the documents of British and French colonies is not as definitive because the conquerors of those areas did not establish permanent settlements and begin to keep continuous records until the seventeenth century, by which time the worst epidemics had probably already taken place. Furthermore, the British tended to drive the native populations away, rather than enslaving them as the Spaniards did, so that the epidemics of British America occurred beyond the range of colonists' direct observation.

Even so, the surviving records of North America do contain references to deadly epidemics among the indigenous population. In 1616-1619 an epidemic, possibly of bubonic or pneumonic plague, swept coastal New England, killing as many as nine out of ten. During the 1630's smallpox, the disease most fatal to the Native American people, eliminated half the population of the Huron and Iroquois confederations. In the 1820's fever devastated the people of the Columbia River area, killing eight out of ten of them.

Unfortunately, the documentation of these and other epidemics is slight and frequently unreliable, and it is necessary to supplement what little we do know with evidence from recent epidemics among Native Americans. For example, in 1952 an outbreak of measles among the Native American inhabitants of Ungava Bay, Quebec, affected 99 percent of the population and killed 7 percent, even though some had the benefit of modern medicine. Cases such as this demonstrate that even diseases that are not normally fatal can have devastating consequences when they strike an immunologically defenseless community.

1. The primary purpose of the passage is to
 - (A) refute a common misconception
 - (B) provide support for a hypothesis
 - (C) analyze an argument
 - (D) suggest a solution to a dilemma
 - (E) reconcile opposing viewpoints
2. According to the passage, virgin-soil epidemics can be distinguished from other catastrophic outbreaks of disease in that virgin-soil epidemics
 - (A) recur more frequently than other chronic diseases
 - (B) affect a minimum of one-half of a given population
 - (C) involve populations with no prior exposure to a disease
 - (D) usually involve a number of interacting diseases
 - (E) are less responsive to medical treatment than are other diseases
3. According to the passage, the British colonists were unlike the Spanish colonists in that the British colonists
 - (A) collected tribute from the native population
 - (B) kept records from a very early date
 - (C) drove Native Americans off the land
 - (D) were unable to provide medical care against epidemic disease
 - (E) enslaved the native populations in America
4. Which of the following can be inferred from the passage concerning Spanish tribute records?
 - (A) They mention only epidemics of smallpox.
 - (B) They were instituted in 1492.
 - (C) They were being kept prior to the seventeenth century.
 - (D) They provide quantitative and qualitative evidence about Native American populations.
 - (E) They prove that certain diseases were unknown in the pre-Columbian New World.
5. The author implies which of the following about measles?
 - (A) It is not usually a fatal disease.

- (B) It ceased to be a problem by the seventeenth century.
- (C) It is the disease most commonly involved in virgin-soil epidemics.
- (D) It was not a significant problem in Spanish colonies.
- (E) It affects only those who are immunologically defenseless against it.
6. Which of the following can be inferred from the passage about the Native American inhabitants of Ungava Bay?
- (A) They were almost all killed by the 1952 epidemic.
- (B) They were immunologically defenseless against measles.
- (C) They were the last native people to be struck by a virgin-soil epidemic.
- (D) They did not come into frequent contact with white Americans until the twentieth century.
- (E) They had been inoculated against measles.
7. The author mentions the 1952 measles outbreak most probably in order to
- (A) demonstrate the impact of modern medicine on epidemic disease
- (B) corroborate the documentary evidence of epidemic disease in colonial America
- (C) refute allegations of unreliability made against the historical record of colonial America
- (D) advocate new research into the continuing problem of epidemic disease
- (E) challenge assumptions about how the statistical evidence of epidemics should be interpreted
8. Which of the following, if newly discovered, would most seriously weaken the author's argument concerning the importance of virgin-soil epidemics in the depopulation of Native Americans?
- (A) Evidence setting the pre-Columbian population of the New World at only 80 million
- (B) Spanish tribute records showing periodic population fluctuations
- (C) Documents detailing sophisticated Native American medical procedures
- (D) Fossils indicating Native American contact with smallpox prior to 1492
- (E) Remains of French settlements dating back to the sixteenth century

Passage 33 (33/63)

Until recently most astronomers believed that the space between the galaxies in our universe was a near-perfect vacuum. This orthodox view of the universe is now being challenged by astronomers who believe that a heavy "rain" of gas is falling into many galaxies from the supposedly empty space around them. The gas apparently condenses into a collection of small stars, each a little larger than the planet Jupiter. These stars vastly outnumber the other stars in a given galaxy. The amount of "intergalactic rainfall" into some of these galaxies has been enough to double their mass in the time since they formed. Scientists have begun to

suspect that this intergalactic gas is probably a mixture of gases left over from the “big bang” when the galaxies were formed and gas was forced out of galaxies by supernova explosions.

It is well known that when gas is cooled at a constant pressure its volume decreases. Thus, the physicist Fabian reasoned that as intergalactic gas cools, the cooler gas shrinks inward toward the center of the galaxy. Meanwhile its place is taken by hotter intergalactic gas from farther out on the edge of the galaxy, which cools as it is compressed and flows into the galaxy. The net result is a continuous flow of gas, starting as hot gases in intergalactic space and ending as a drizzle of cool gas called a “cooling flow,” falling into the central galaxy.

A fairly heretical idea in the 1970’s, the cooling-flow theory gained support when Fabian observed a cluster of galaxies in the constellation Perseus and found the central galaxy, NGC 1275, to be a strange-looking object with irregular, thin strands of gas radiating from it. According to previous speculation, these strands were gases that had been blown out by an explosion in the galaxy. Fabian, however, disagreed. Because the strands of gas radiating from NGC 1275 are visible in optical photographs, Fabian suggested that such strands consisted not of gas blown out of the galaxy but of cooling flows of gas streaming inward. He noted that the wavelengths of the radiation emitted by a gas would change as the gas cooled, so that as the gas flowed into the galaxy and became cooler, it would emit not x-rays, but visible light, like that which was captured in the photographs. Fabian’s hypothesis was supported by Canizares’ determination in 1982 that most of the gas in the Perseus cluster was at a temperature of 80 million degrees Kelvin, whereas the gas immediately surrounding NGC 1275 (the subject of the photographs) was at one-tenth this temperature.

1. The primary purpose of the passage is to
 - (A) illustrate a hypothesis about the origin of galaxies
 - (B) provide evidence to dispute an accepted theory about the evolution of galaxies
 - (C) summarize the state of and prospects for research in intergalactic astronomy
 - (D) report new data on the origins of intergalactic gas
 - (E) reconcile opposing views on the formation of intergalactic gas
2. The author uses the phrase “orthodox view of the universe” ([line 3](#)) to refer to the belief that
 - (A) the space between the galaxies is devoid of matter
 - (B) the space between galaxies is occupied by stars that cannot be detected by optical photographs
 - (C) galaxies have decreased in mass by half since their formation
 - (D) galaxies contain stars, each the size of Jupiter, which form clusters
 - (E) galaxies are being penetrated by gas forced out of other galaxies by supernova explosions
3. It can be inferred from the passage that, if Fabian is correct, gas in the peripheral regions of a galaxy cluster
 - (A) streams outward into intergalactic space

- (B) is hotter than gas in the central regions of the galaxy
 - (C) is composed primarily of gas left over from the big bang
 - (D) results in the creation of unusually large stars
 - (E) expands to increase the size of the galaxy
4. The author of the passage probably mentions Canizares' determination in order to
- (A) clarify an ambiguity in Fabian's research findings
 - (B) illustrate a generalization about the temperature of gas in a galaxy cluster
 - (C) introduce a new argument in support of the orthodox view of galaxies
 - (D) provide support for Fabian's assertions about the Perseus galaxies
 - (E) provide an alternate point of view concerning the movement of gas within a galaxy cluster
5. According to the passage, Fabian believes that gas flowing into a central galaxy has which of the following characteristics?
- (A) It is one-tenth hotter than it was in the outer regions of the galaxy cluster.
 - (B) It emits radiation with wavelengths that change as the gas moves toward the center of the galaxy.
 - (C) The total amount of radiation emitted diminishes as the gas cools.
 - (D) It loses 90 percent of its energy as it moves to the center of the galaxy.
 - (E) It condenses at a rate much slower than the rate of decrease in temperature as the gas flows inward.
6. According to the passage, Fabian's theory makes use of which of the following principles?
- (A) Gas emanating from an explosion will be hotter the more distant it is from the origin.
 - (B) The wavelength of radiation emitted by a gas as it cools remains constant.
 - (C) If pressure remains constant, the volume of a gas will decrease as it is cooled.
 - (D) The volume of a gas will increase as the pressure increases.
 - (E) As gas cools, its density decreases.
7. It can be inferred from the passage that which of the following is true of Fabian's theory?
- (A) It did not receive approval until Canizares' work was published.
 - (B) It was not widely accepted in the 1970's.
 - (C) It did not receive support initially because technology was not available to confirm its tenets.
 - (D) It supports earlier speculation that intergalactic gas was largely the result of explosions outside the galaxy.
 - (E) It was widely challenged until x-ray evidence of gas temperatures in NGC 1275 had been presented.

Passage 34 (34/63)

Kazuko Nakane's history of the early Japanese immigrants to central California's Pajaro Valley focuses on the development of farming communities there from 1890 to 1940. The Issei (first-generation immigrants) were brought into the Pajaro Valley to raise sugar beets. Like Issei laborers in American cities, Japanese men in rural areas sought employment via the "boss" system. The system comprised three elements: immigrant wage laborers; Issei **boardinghouses** where laborers stayed; and labor contractors, who gathered workers for a particular job and then negotiated a contract between workers and employer. This same system was originally utilized by the Chinese laborers who had preceded the Japanese. A related institution was the "labor club," which provided job information and negotiated employment contracts and other legal matters, such as the rental of land, for Issei who chose to belong and paid an annual fee to the cooperative for membership.

When the local sugar beet industry collapsed in 1902, the Issei began to lease land from the valley's strawberry farmers. The Japanese provided the labor and the crop was divided between laborers and landowners. The Issei thus moved quickly from wage-labor employment to **sharecropping** agreements. A limited amount of economic progress was made as some Issei were able to rent or buy farmland directly, while others joined together to form farming corporations. As the Issei began to operate farms, they began to marry and start families, forming an established Japanese American community. Unfortunately, the Issei's efforts to attain agricultural independence were hampered by government restrictions, such as the Alien Land Law of 1913. But immigrants could circumvent such exclusionary laws by leasing or purchasing land in their American-born children's names.

Nakane's **case study** of one rural Japanese American community provides valuable information about the lives and experiences of the Issei. It is, however, too **particularistic**. This limitation derives from Nakane's methodology—that of oral history—which cannot substitute for a broader theoretical or comparative perspective. Future research might well consider two issues raised by her study: were the Issei of the Pajaro Valley similar to or different from Issei in urban settings, and what variations existed between rural Japanese American communities?

1. The primary purpose of the passage is to
 - (A) defend a controversial hypothesis presented in a history of early Japanese immigrants to California
 - (B) dismiss a history of an early Japanese settlement in California as narrow and ill constructed
 - (C) summarize and critique a history of an early Japanese settlement in California
 - (D) compare a history of one Japanese American community with studies of Japanese settlements throughout California
 - (E) examine the differences between Japanese and Chinese immigrants to central California in the 1890's
2. Which of the following best describes a "labor club," as defined in the passage?
 - (A) An organization to which Issei were compelled to belong if they sought

- employment in the Pajaro Valley
- (B) An association whose members included labor contractors and landowning “bosses”
- (C) A type of farming corporation set up by Issei who had resided in the Pajaro Valley for some time
- (D) A cooperative association whose members were dues-paying Japanese laborers
- (E) A social organization to which Japanese laborers and their families belonged
3. Based on information in the passage, which of the following statements concerning the Alien Land Law of 1913 is most accurate?
- (A) It excluded American-born citizens of Japanese ancestry from landownership.
- (B) It sought to restrict the number of foreign immigrants to California.
- (C) It successfully prevented Issei from ever purchasing farmland.
- (D) It was applicable to first-generation immigrants but not to their American-born children.
- (E) It was passed under pressure from the Pajaro Valley’s strawberry farmers.
4. Several Issei families join together to purchase a strawberry field and the necessary farming equipment. Such a situation best exemplifies which of the following, as it is described in the passage?
- (A) A typical sharecropping agreement
- (B) A farming corporation
- (C) A “labor club”
- (D) The “boss” system
- (E) Circumvention of the Alien Land Law
5. The passage suggests that which of the following was an indirect consequence of the collapse of the sugar beet industry in the Pajaro Valley?
- (A) The Issei formed a permanent, family-based community.
- (B) Boardinghouses were built to accommodate the Issei.
- (C) The Issei began to lease land in their children’s names.
- (D) The Issei adopted a labor contract system similar to that used by Chinese immigrants.
- (E) The Issei suffered a massive dislocation caused by unemployment.
6. The author of the passage would most likely agree that which of the following, if it had been included in Nakane’s study, would best remedy the particularistic nature of that study?
- (A) A statistical table comparing per capita income of Issei wage laborers and sharecroppers in the Pajaro Valley
- (B) A statistical table showing per capita income of Issei in the Pajaro Valley from

1890 to 1940

- (C) A statistical table showing rates of farm ownership by Japanese Americans in four central California counties from 1890 to 1940
 - (D) A discussion of original company documents dealing with the Pajaro Valley sugar beet industry at the turn of the century
 - (E) Transcripts of interviews conducted with members of the Pajaro Valley Japanese American community who were born in the 1920's and 1930's
7. It can be inferred from the passage that, when the Issei began to lease land from the Valley's strawberry farmers, the Issei most probably did which of the following?
- (A) They used profits made from selling the strawberry crop to hire other Issei.
 - (B) They negotiated such agricultural contracts using the "boss" system.
 - (C) They paid for the use of the land with a share of the strawberry crop.
 - (D) They earned higher wages than when they raised sugar beets.
 - (E) They violated the Alien Land Law.

Passage 35 (35/63)

It can be argued that much consumer dissatisfaction with marketing strategies arises from an inability to aim advertising at only the likely buyers of a given product.

There are three groups of consumers who are affected by the marketing process. First, there is the market segment—people who need the commodity in question. Second, there is the program target—people in the market segment with the "best fit" characteristics for a specific product. Lots of people may need trousers, but only a few qualify as likely buyers of very expensive designer trousers. Finally, there is the program audience—all people who are actually exposed to the marketing program without regard to whether they need or want the product.

These three groups are rarely identical. An exception occurs occasionally in cases where customers for a particular industrial product may be few and easily identifiable. Such customers, all sharing a particular need, are likely to form a meaningful target, for example, all companies with a particular application of the product in question, such as high-speed fillers of bottles at breweries. In such circumstances, direct selling (marketing that reaches only the program target) is likely to be economically justified, and highly specialized trade media exist to expose members of the program target—and only members of the program target—to the marketing program.

Most consumer-goods markets are significantly different. Typically, there are many rather than few potential customers. Each represents a relatively small percentage of potential sales. Rarely do members of a particular market segment group themselves neatly into a meaningful program target. There are substantial differences among consumers with similar demographic characteristics. Even with all the past decade's advances in information technology, direct selling of consumer goods is rare, and mass marketing—a marketing approach that aims at a wide audience—remains the only economically feasible mode. Unfortunately, there are few

media that allow the marketer to direct a marketing program exclusively to the program target. Inevitably, people get exposed to a great deal of marketing for products in which they have no interest and so they become annoyed.

1. The passage suggests which of the following about highly specialized trade media?
 - (A) They should be used only when direct selling is not economically feasible.
 - (B) They can be used to exclude from the program audience people who are not part of the program target.
 - (C) They are used only for very expensive products.
 - (D) They are rarely used in the implementation of marketing programs for industrial products.
 - (E) They are used only when direct selling has not reached the appropriate market segment.
2. According to the passage, most consumer-goods markets share which of the following characteristics?
 - I. Customers who differ significantly from each other
 - II. Large numbers of potential customers
 - III. Customers who each represent a small percentage of potential sales
 - (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
3. The passage suggests which of the following about direct selling?
 - (A) It is used in the marketing of most industrial products.
 - (B) It is often used in cases where there is a large program target.
 - (C) It is not economically feasible for most marketing programs.
 - (D) It is used only for products for which there are many potential customers.
 - (E) It is less successful at directing a marketing program to the target audience than are other marketing approaches.
4. The author mentions “trousers” ([lines 9 and 11](#)) most likely in order to
 - (A) make a comparison between the program target and the program audience
 - (B) emphasize the similarities between the market segment and the program target
 - (C) provide an example of the way three groups of consumers are affected by a marketing program
 - (D) clarify the distinction between the market segment and the program target
 - (E) introduce the concept of the program audience

5. Which of the following best exemplifies the situation described in the [last two sentences](#) of the passage?
- (A) A product suitable for women age 21-30 is marketed at meetings attended only by potential customers.
 - (B) A company develops a new product and must develop an advertising campaign to create a market for it.
 - (C) An idea for a specialized product remains unexplored because media exposure of the product to its few potential customers would be too expensive.
 - (D) A new product is developed and marketers collect demographic data on potential consumers before developing a specific advertising campaign.
 - (E) A product suitable for men age 60 and over is advertised in a magazine read by adults of all ages.
6. The passage suggests that which of the following is true about the marketing of industrial products like those discussed in the [third paragraph](#)?
- (A) The market segment and program target are identical.
 - (B) Mass marketing is the only feasible way of advertising such products.
 - (C) The marketing program cannot be directed specifically to the program target.
 - (D) More customers would be needed to justify the expense of direct selling.
 - (E) The program audience would necessarily be made up of potential customers, regardless of the marketing approach that was used.
7. The passage supports which of the following statements about demographic characteristics and marketing?
- (A) Demographic research is of no use in determining how successful a product will be with a particular group of consumers.
 - (B) A program audience is usually composed of people with similar demographic characteristics.
 - (C) Psychological factors are more important than demographic factors in defining a market segments.
 - (D) Consumers with similar demographic characteristics do not necessarily form a meaningful program target.
 - (E) Collecting demographic data is the first step that marketers take in designing a marketing program.
8. It can be inferred from the passage that which of the following is true for most consumer-goods markets?
- (A) The program audience is smaller than the market segment.
 - (B) The program audience and the market segment are usually identical.
 - (C) The market segment and the program target are usually identical.
 - (D) The program target is larger than the market segment.

- (E) The program target and the program audience are not usually identical.

Passage 36 (36/63)

Protein synthesis begins when the gene encoding a protein is activated. The gene's sequence of nucleotides is transcribed into a molecule of messenger RNA (mRNA), which reproduces the information contained in that sequence. Transported outside the nucleus to the cytoplasm, the mRNA is translated into the protein it encodes by an organelle known as a ribosome, which strings together amino acids in the order specified by the sequence of elements in the mRNA molecule. Since the amount of mRNA in a cell determines the amount of the corresponding protein, factors affecting the abundance of mRNA's play a major part in the normal functioning of a cell by appropriately regulating protein synthesis. For example, an excess of certain proteins can cause cells to proliferate abnormally and become cancerous; a lack of the protein insulin results in diabetes.

Biologists once assumed that the variable rates at which cells synthesize different mRNA's determine the quantities of mRNA's and their corresponding proteins in a cell. However, recent investigations have shown that the concentrations of most mRNA's correlate best, not with their synthesis rate, but rather with the equally variable rates at which cells degrade the different mRNA's in their cytoplasm. If a cell degrades both a rapidly and a slowly synthesized mRNA slowly, both mRNA's will accumulate to high levels.

An important example of this phenomenon is the development of red blood cells from their unspecialized parent cells in **bone marrow**. For red blood cells to accumulate sufficient concentrations of **hemoglobin** (which transports oxygen) to carry out their main function, the cells' parent cells must simultaneously produce more of the constituent proteins of hemoglobin and less of most other proteins. To do this, the parent cells halt synthesis of non-hemoglobin mRNA's in the nucleus and rapidly degrade copies of the non-hemoglobin mRNA's remaining in the cytoplasm. Halting synthesis of mRNA alone would not affect the quantities of proteins synthesized by the mRNA's still existing in the cytoplasm. Biologists now believe that most cells can regulate protein production most efficiently by varying both mRNA synthesis and degradation, as developing red cells do, rather than by just varying one or the other.

1. The passage is primarily concerned with discussing the
 - (A) influence of mRNA concentrations on the development of red blood cells
 - (B) role of the synthesis and degradation of mRNA in cell functioning
 - (C) mechanism by which genes are transcribed into mRNA
 - (D) differences in mRNA concentrations in cell nuclei and in the cytoplasm
 - (E) way in which mRNA synthesis contributes to the onset of diabetes
2. The passage suggests that a biologist who held the view described in the first sentence of the second paragraph would most probably also have believed which of the following?
 - (A) The rate of degradation of specific mRNA's has little effect on protein concentrations.
 - (B) The rate of degradation of specific mRNA's should be studied intensively.

- (C) The rates of synthesis and degradation for any given mRNA are normally equal.
- (D) Different mRNA's undergo degradation at widely varying rates.
- (E) Most mRNA's degrade very rapidly.
3. Which of the following best describes the relationship between the second and third paragraphs of the passage?
- (A) The second paragraph presents arguments in support of a new theory and the third paragraph presents arguments against that same theory.
- (B) The second paragraph describes a traditional view and the third paragraph describes the view that has replaced it on the basis of recent investigations.
- (C) The third paragraph describes a specific case of a phenomenon that is described generally in the second paragraph.
- (D) The third paragraph describes an investigation that was undertaken to resolve problems raised by phenomena described in the second paragraph.
- (E) Both paragraphs describe in detail specific examples of the phenomenon that is introduced in the first paragraph.
4. The accumulation of concentrations of hemoglobin in red blood cells is mentioned in the passage as an example of which of the following?
- (A) The effectiveness of simultaneous variation of the rates of synthesis and degradation of mRNA
- (B) The role of the ribosome in enabling a parent cell to develop properly into a more specialized form
- (C) The importance of activating the genes for particular proteins at the correct moment
- (D) The abnormal proliferation of a protein that threatens to make the cell cancerous
- (E) The kind of evidence that biologists relied on for support of a view of mRNA synthesis that is now considered obsolete
5. To begin to control a disease caused by a protein deficiency, the passage suggests that a promising experimental treatment would be to administer a drug that would reduce
- (A) only the degradation rate for the mRNA of the protein involved
- (B) only the synthesis rate for the mRNA of the protein involved
- (C) both the synthesis and degradation rates for the mRNA of the protein involved
- (D) the incidence of errors in the transcription of mRNA's from genetic nucleotide sequences
- (E) the rate of activity of ribosomes in the cytoplasm of most cells
6. According to the passage, which of the following best describes the current view

on the relationship between the synthesis and the degradation of mRNA in regulating protein synthesis?

- (A) Biologists have recently become convinced that the ribosome controls the rates of synthesis and degradation of mRNA.
 - (B) There is no consensus among biologists as to the significance of mRNA degradation in regulating protein synthesis.
 - (C) The concept of mRNA degradation is so new that most biologists still believe that the vital role in protein regulation belongs to mRNA synthesis.
 - (D) Degradation of mRNA is now considered to be the key process and mRNA synthesis is no longer believed to play a significant role.
 - (E) Degradation of mRNA is now considered to be as important as mRNA synthesis has been, and still is, believed to be.
7. According to the passage, which of the following can happen when protein synthesis is not appropriately regulated?
- (A) Diabetes can result from errors that occur when the ribosomes translate mRNA into protein.
 - (B) Cancer can result from an excess of certain proteins and diabetes can result from an insulin deficiency.
 - (C) A deficiency of red blood cells can occur if bone marrow cells produce too much hemoglobin.
 - (D) Cancer can be caused by excessively rapid degradation of certain amino acids in the cytoplasm of cells.
 - (E) Excessive synthesis of one protein can trigger increased degradation of mRNA's for other proteins and create severe protein imbalances.
8. The passage suggests that a biologist who detected high levels of two proteins in a certain type of cell would be likely to consider which of the following as a possible explanation?
- (A) The rate of mRNA degradation for one of the proteins increases as this type of cell develops a more specialized function.
 - (B) The two proteins are most likely constituents of a complex substance supporting the cells' specialized function.
 - (C) The cells are likely to proliferate abnormally and possibly become cancerous due to the levels of these proteins.
 - (D) The mRNA's for both proteins are being degraded at a low rate in that type of cell.
 - (E) The mRNA's for the two proteins are being synthesized at identical rates in that type of cell.

Passage 37 (37/63)

(This passage was excerpted from material written in 1990.)

As the economic role of multinational, global corporations expands, the international economic environment will be shaped increasingly not by governments or international institutions, but by the interaction between governments and global corporations, especially in the United States, Europe, and Japan. A significant factor in this shifting world economy is the trend toward regional trading blocs of nations, which has a potentially large effect on the evolution of the world trading system. Two examples of this trend are the United States-Canada Free Trade Agreement (FTA) and Europe 1992, the move by the European Community (EC) to dismantle impediments to the free flow of goods, services, capital, and labor among member states by the end of 1992. However, although numerous political and economic factors were operative in launching the move to integrate the EC's markets, concern about protectionism within the EC does not appear to have been a major consideration. This is in sharp contrast to the FTA; the overwhelming reason for that bilateral initiative was fear of increasing United States protectionism. Nonetheless, although markedly different in origin and nature, both regional developments are highly significant in that they will foster integration in the two largest and richest markets of the world, as well as provoke questions about the future direction of the world trading system.

1. The primary purpose of the passage as a whole is to
 - (A) describe an initiative and propose its continuance
 - (B) chronicle a development and illustrate its inconsistencies
 - (C) identify a trend and suggest its importance
 - (D) summarize a process and question its significance
 - (E) report a phenomenon and outline its probable future
2. According to the passage, all of the following are elements of the shifting world economy EXCEPT
 - (A) an alteration in the role played by governments
 - (B) an increase in interaction between national governments and international regulatory institutions
 - (C) an increase in the formation of multinational trading alliances
 - (D) an increase in integration in the two richest markets of the world
 - (E) a fear of increasing United States protectionism
3. The passage suggests which of the following about global corporations?
 - (A) Their continued growth depends on the existence of a fully integrated international market.
 - (B) Their potential effect on the world market is a matter of ongoing concern to international institutions.
 - (C) They will have to assume quasi-governmental functions if current economic trends continue.
 - (D) They have provided a model of economic success for regional trading blocs.
 - (E) Their influence on world economics will continue to increase.

4. According to the passage, one similarity between the FTA and Europe 1992 is that they both
- (A) overcame concerns about the role of politics in the shifting world economy
 - (B) originated out of concern over unfair trade practices by other nations
 - (C) exemplify a trend toward regionalization of commercial markets
 - (D) place the economic needs of the trading bloc ahead of those of the member nations
 - (E) help to ensure the continued economic viability of the world community
5. Which of the following can be inferred from the passage about the European Community prior to the adoption of the Europe 1992 program?
- (A) There were restrictions on commerce between the member nations.
 - (B) The economic policies of the member nations focused on global trading issues.
 - (C) There were few impediments to trade between the member nations and the United States.
 - (D) The flow of goods between the member nations and Canada was insignificant.
 - (E) Relations between multinational corporations and the governments of the member nations were strained.
6. The author discusses the FTA and Europe 1992 most likely in order to
- (A) point out the similarities between two seemingly disparate trading alliances
 - (B) illustrate how different economic motivations produce different types of trading blocs
 - (C) provide contrasting examples of a trend that is influencing the world economy
 - (D) identify the most important characteristics of successful economic integration
 - (E) trace the history of regional trading blocs
7. Which of the following best describes the organization of the passage?
- (A) An argument is put forth and evidence for and against it given.
 - (B) An assertion is made and opposing evidence presented.
 - (C) Two hypotheses are described and shown to inconsistent with one another.
 - (D) A phenomenon is identified and illustrations of this phenomenon offered.
 - (E) A specific case of a phenomenon is discussed a generalization drawn.

Passage 38 (38/63)

In *Forces of Production*, David Noble examines the transformation of the machine-tool industry as the industry moved from reliance on skilled artisans to automation. Noble writes from a Marxist perspective, and his central argument is that management, in its decisions to automate, conspired against labor: the power that the skilled machinists wielded in the industry

was intolerable to management. Noble fails to substantiate this claim, although his argument is impressive when he applies the Marxist concept of “de-skilling”—the use of technology to replace skilled labor—to the automation of the machine-tool industry. In automating, the industry moved to computer-based, digitized “numerical-control” (N/C) technology, rather than to artisan-generated “record-playback” (R/P) technology.

Although both systems reduced reliance on skilled labor, Noble clearly prefers R/P, with its inherent acknowledgment of workers’ skills: unlike N/C, its programs were produced not by engineers at their computers, but by skilled machinists, who recorded their own movements to “teach” machines to duplicate those movements. However, Noble’s only evidence of conspiracy is that, although the two approaches were roughly equal in technical merit, management chose N/C. From this he concludes that automation is undertaken not because efficiency demands it or scientific advances allow it, but because it is a tool in the ceaseless war of capitalists against labor.

1. The author of the passage is primarily concerned with
 - (A) reexamining a political position and defending its validity
 - (B) examining a management decision and defending its necessity
 - (C) analyzing a scholarly study and pointing out a central weakness
 - (D) explaining a trend in automation and warning about its dangers
 - (E) chronicling the history of an industry and criticizing its development
2. According to information in the passage, the term “de-skilling” refers to the
 - (A) loss of skills to industry when skilled workers are replaced by unskilled laborers
 - (B) substitution of mechanized processes for labor formerly performed by skilled workers
 - (C) labor theory that automation is technologically comparable to skilled labor
 - (D) process by which skilled machinists “teach” machines to perform certain tasks
 - (E) exclusion of skilled workers from participation in the development of automated technology
3. Which of the following best characterizes the function of the second paragraph of the passage?
 - (A) It develops a topic introduced in the first paragraph.
 - (B) It provides evidence to refute a claim presented in the first paragraph.
 - (C) It gives examples of a phenomenon mentioned in the first paragraph.
 - (D) It presents a generalization about examples given in the first paragraph.
 - (E) It suggests two possible solutions to a problem presented in the first paragraph.
4. The passage suggests which of the following about N/C automation in the machine-tool industry?

- (A) It displaced fewer skilled workers than R/P automation did.
 - (B) It could have been implemented either by experienced machinists or by computer engineers.
 - (C) It was designed without the active involvement skilled machinists.
 - (D) It was more difficult to design than R/P automation was.
 - (E) It was technically superior to R/P automation.
5. Which of the following phrases most clearly reveals the attitude of the author of the passage toward Noble's central argument?
- (A) "conspired against" (line 6)
 - (B) "intolerable to management" (line 7)
 - (C) "impressive when he applies the Marxist concept" (line 9)
 - (D) "clearly prefers" (line 16)
 - (E) "only evidence of conspiracy" (line 21)
6. The author of the passage commends Noble's book for which of the following?
- (A) Concentrating on skilled as opposed to unskilled workers in its discussion of the machine-tool industry
 - (B) Offering a generalization about the motives behind the machine-tool industry's decision to automate
 - (C) Making an essential distinction between two kinds of technology employed in the machine-tool industry
 - (D) Calling into question the notion that managers conspired against labor in the automation of the machine-tool industry
 - (E) Applying the concept of de-skilling to the machine tool industry
7. Which of the following best characterizes Forces of Production as it is described in the passage?
- (A) A comparison of two interpretations of how a particular industry evolved
 - (B) An examination of the origin of a particular concept in industrial economics
 - (C) A study that points out the weakness of a particular interpretation of an industrial phenomenon
 - (D) A history of a particular industry from an ideological point of view
 - (E) An attempt to relate an industrial phenomenon in one industry to a similar phenomenon in another industry

Passage 39 (39/63)

The **sensation of pain** cannot accurately be described as "located" at the point of an injury, or, **for that matter**, in any one place in the nerves or brain. Rather, pain signals—and pain relief—are delivered through a highly complex interacting circuitry.

When a cell is injured, a rush of prostaglandins sensitizes nerve endings at the injury.

Prostaglandins are chemicals produced in and released from virtually all mammalian cells when they are injured: these are the only pain signals that do not originate in the nervous system. Aspirin and other similar drugs (such as indomethacin and ibuprofen) keep prostaglandins from being made by interfering with an enzyme known as prostaglandin synthetase, or cyclooxygenase. The drugs' effectiveness against pain is proportional to their success in blocking this enzyme at the site of injury.

From nerve endings at the injury, pain signals move to nerves feeding into the **spinal cord**. The long, tubular membranes of nerve cells carry electrical impulses. When electrical impulses get to the spinal cord, a pain-signaling chemical known as substance P is released there. Substance P then excites nearby neurons to send impulses to the brain. Local anesthetics such as novocaine and xylocaine work by blocking the electrical transmission along nerves in a particular area. They inhibit the flow of sodium ions through the membranes, making the nerves electrically quiescent; thus no pain signals are sent to the spinal cord or to the brain.

Recent discoveries in the study of pain have involved the brain itself—the supervising organ that notices pain signals and that sends messages down to the spinal cord to regulate incoming pain traffic. Endorphins—the brain's own morphine—are a class of small peptides that help to block pain signals within the brain itself. The presence of endorphins may also help to explain differences in response to pain signals, since individuals seem to differ in their ability to produce endorphins. It now appears that a number of techniques for blocking chronic pain—such as acupuncture and electrical stimulation of the central **brain stem**—involve the release of endorphins in the brain and spinal cord.

1. The passage is primarily concerned with
 - (A) analyzing ways that enzymes and other chemicals influence how the body feels pain
 - (B) describing the presence of endorphins in the brain and discussing ways the body blocks pain within the brain itself
 - (C) describing how pain signals are conveyed in the body and discussing ways in which the pain signals can be blocked
 - (D) demonstrating that pain can be influenced by acupuncture and electrical stimulation of the central brain stem
 - (E) differentiating the kinds of pain that occur at different points in the body's nervous system
2. According to the passage, which of the following is one of the first things to occur when cells are injured?
 - (A) The flow of electrical impulses through nerve cells at the site of the injury is broken.
 - (B) The production of substance P traveling through nerve cells to the brain increases.
 - (C) Endorphins begin to speed up the response of nerve cells at the site of the injury.
 - (D) A flood of prostaglandins sensitizes nerve endings at the site of the injury.

- (E) Nerve cells connected to the spinal cord become electrically quiescent.
3. Of the following, which is most likely attributable to the effect of endorphins as described in the passage?
- (A) After an injection of novocaine, a patient has no feeling in the area where the injection was given.
- (B) After taking ibuprofen, a person with a headache gets quick relief.
- (C) After receiving a local anesthetic, an injured person reports relief in the anesthetized area.
- (D) After being given aspirin, a child with a badly scraped elbow feels better.
- (E) After acupuncture, a patient with chronic back pain reports that the pain is much less severe.
4. It can be inferred from the passage that if the prostaglandin synthetase is only partially blocked, which of the following is likely to be true?
- (A) Some endorphins will be produced, and some pain signals will be intensified.
- (B) Some substance P is likely to be produced, so some pain signals will reach the brain.
- (C) Some sodium ions will be blocked, so some pain signals will not reach the brain.
- (D) Some prostaglandins will be produced, but production of substance P will be prevented.
- (E) Some peptides in the brain will receive pain signals and begin to regulate incoming pain traffic.

Passage 40 (40/63)

Japanese firms have achieved the highest levels of manufacturing efficiency in the world automobile industry. Some observers of Japan have assumed that Japanese firms use the same manufacturing equipment and techniques as United States firms but have benefited from the unique characteristics of Japanese employees and the Japanese culture. However, if this were true, then one would expect Japanese auto plants in the United States to perform no better than factories run by United States companies. This is not the case; Japanese-run automobile plants located in the United States and staffed by local workers have demonstrated higher levels of productivity when compared with factories owned by United States companies.

Other observers link high Japanese productivity to higher levels of capital investment per worker. But a historical perspective leads to a different conclusion. When the two top Japanese automobile makers matched and then doubled United States productivity levels in the mid-sixties, capital investment per employee was comparable to that of United States firms. Furthermore, by the late seventies, the amount of fixed assets required to produce one vehicle was roughly equivalent in Japan and in the United States.

Since capital investment was not higher in Japan, it had to be other factors that led to higher productivity. A more fruitful explanation may lie with Japanese production techniques.

Japanese automobile producers did not simply implement conventional processes more effectively: they made critical changes in United States procedures. For instance, the mass-production philosophy of United States automakers encouraged the production of huge lots of cars in order to utilize fully expensive, component-specific equipment and to occupy fully workers who have been trained to execute one operation efficiently. Japanese automakers chose to make small-lot production feasible by introducing several departures from United States practices, including the use of flexible equipment that could be altered easily to do several different production tasks and the training of workers in multiple jobs. Automakers could schedule the production of different components or models on single machines, thereby eliminating the need to store the buffer stocks of extra components that result when specialized equipment and workers are kept constantly active.

1. The primary purpose of the passage is to
 - (A) present the major steps of a process
 - (B) clarify an ambiguity
 - (C) chronicle a dispute
 - (D) correct misconceptions
 - (E) defend an accepted approach
2. The author suggests that if the observers of Japan mentioned in [line 3](#) were correct, which of the following would be the case?
 - (A) The equipment used in Japanese automobile plants would be different from the equipment used in United States plants.
 - (B) Japanese workers would be trained to do several different production jobs.
 - (C) Culture would not have an influence on the productivity levels of workers.
 - (D) The workers in Japanese-run plants would have higher productivity levels regardless of where they were located.
 - (E) The production levels of Japanese-run plants located in the United States would be equal to those of plants run by United States companies.
3. Which of the following statements concerning the productivity levels of automakers can be inferred from the passage?
 - (A) Prior to the 1960's, the productivity levels of the top Japanese automakers were exceeded by those of United States automakers.
 - (B) The culture of a country has a large effect on the productivity levels of its automakers.
 - (C) During the late 1970's and early 1980's, productivity levels were comparable in Japan and the United States.
 - (D) The greater the number of cars that are produced in a single lot, the higher a plant's productivity level.
 - (E) The amount of capital investment made by automobile manufacturers in their factories determines the level of productivity.

4. According to the passage, which of the following statements is true of Japanese automobile workers?
- (A) Their productivity levels did not equal those of United States automobile workers until the late seventies.
 - (B) Their high efficiency levels are a direct result of cultural influences.
 - (C) They operate component-specific machinery.
 - (D) They are trained to do more than one job.
 - (E) They produce larger lots of cars than do workers in United States factories.
5. Which of the following best describes the organization of the first paragraph?
- (A) A thesis is presented and supporting examples are provided.
 - (B) Opposing views are presented, classified, and then reconciled.
 - (C) A fact is stated, and an explanation is advanced and then refuted.
 - (D) A theory is proposed, considered, and then amended.
 - (E) An opinion is presented, qualified, and then reaffirmed.
6. It can be inferred from the passage that one problem associated with the production of huge lots of cars is which of the following?
- (A) The need to manufacture flexible machinery and equipment
 - (B) The need to store extra components not required for immediate use
 - (C) The need for expensive training programs for workers, which emphasize the development of facility in several production jobs
 - (D) The need to alter conventional mass-production processes
 - (E) The need to increase the investment per vehicle in order to achieve high productivity levels
7. Which of the following statements is supported by information stated in the passage?
- (A) Japanese and United States automakers differ in their approach to production processes.
 - (B) Japanese automakers have perfected the use of single-function equipment.
 - (C) Japanese automakers invest more capital per employee than do United States automakers.
 - (D) United States-owned factories abroad have higher production levels than do Japanese owned plants in the United States.
 - (E) Japanese automakers have benefited from the cultural heritage of their workers.
8. With which of the following predictive statement regarding Japanese automakers would the author most likely agree?
- (A) The efficiency levels of the Japanese automakers will decline if they become less flexible in their approach to production.

- (B) Japanese automakers productivity levels double during the late 1990's.
- (C) United States automakers will originate new production processes before Japanese automakers do.
- (D) Japanese automakers will hire fewer workers than will United States automakers because each worker is required to perform several jobs.
- (E) Japanese automakers will spend less on equipment repairs than will United States automakers because Japanese equipment can be easily altered.

Passage 41 (41/63)

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

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

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

1. Which of the following titles best summarizes the contents of the passage?
 - (A) Neurotransmitters: Their Crucial Function in Cellular Communication
 - (B) Diet and Survival: An Old Relationship Reexamined
 - (C) The Blood Supply and the Brain: A Reciprocal Dependence
 - (D) Amino Acids and Neurotransmitters: The Connection Between Serotonin Levels and Tyrosine

- (E) The Effects of Food Intake on the Production and Release of Serotonin: Some Recent Findings
2. According to the passage, the speed with which tryptophan is provided to the brain cells of a rat varies with the
 - (A) amount of protein present in a meal
 - (B) concentration of serotonin in the brain before a meal
 - (C) concentration of leucine in the blood rather than on the concentration of tyrosine in the blood after a meal
 - (D) concentration of tryptophan in the brain before a meal
 - (E) number of serotonin-containing neurons present in the brain before a meal
 3. According to the passage, when the authors began their first studies, they were aware that
 - (A) they would eventually need to design experiments that involved feeding rats high concentrations of protein
 - (B) tryptophan levels in the blood were difficult to monitor with accuracy
 - (C) serotonin levels increased after rats were fed meals rich in tryptophan
 - (D) there were many neurotransmitters whose production was dependent on metabolic processes elsewhere in the body
 - (E) serotonin levels increased after rats were injected with a large amount of tryptophan
 4. According to the passage, one reason that the authors gave rats carbohydrates was to
 - (A) depress the rats' tryptophan levels
 - (B) prevent the rats from contracting diseases
 - (C) cause the rats to produce insulin
 - (D) demonstrate that insulin is the most important substance secreted by the body
 - (E) compare the effect of carbohydrates with the effect of proteins
 5. According to the passage, the more protein a rat consumes, the lower will be the
 - (A) ratio of the rat's blood-tryptophan concentration to the amount of serotonin produced and released in the rat's brain
 - (B) ratio of the rat's blood-tryptophan concentration to the concentration in its blood of the other amino acids contained in the protein
 - (C) ratio of the rat's blood-tyrosine concentration to its blood-leucine concentration
 - (D) number of neurotransmitters of any kind that the rat will produce and release
 - (E) number of amino acids the rat's blood will contain
 6. The authors' discussion of the "mechanism that provides blood tryptophan to the brain cells" (lines 31-32) is meant to

- (A) stimulate further research studies
 - (B) summarize an area of scientific investigation
 - (C) help explain why a particular research finding was obtained
 - (D) provide supporting evidence for a controversial scientific theory
 - (E) refute the conclusions of a previously mentioned research study
7. According to the passage, an injection of insulin was most similar in its effect on rats to an injection of
- (A) tyrosine
 - (B) leucine
 - (C) blood
 - (D) tryptophan
 - (E) protein
8. It can be inferred from the passage that which of the following would be LEAST likely to be a potential source of aid to a patient who was not adequately producing and releasing serotonin?
- (A) Meals consisting almost exclusively of protein
 - (B) Meals consisting almost exclusively of carbohydrates
 - (C) Meals that would elicit insulin secretion
 - (D) Meals that had very low concentrations of tyrosine
 - (E) Meals that had very low concentrations of leucine
9. It can be inferred from the passage that the authors initially held which of the following hypotheses about what would happen when they fed large amounts of protein to rats?
- (A) The rats' brain serotonin levels would not decrease.
 - (B) The rats' brain tryptophan levels would decrease.
 - (C) The rats' tyrosine levels would increase less quickly than would their leucine levels.
 - (D) The rats would produce more insulin.
 - (E) The rats would produce neurotransmitters other than serotonin.

Passage 42 (42/63)

Historians sometimes forget that history is continually being made and experienced before it is studied, interpreted, and read. These latter activities have their own history, of course, which may impinge in unexpected ways on public events. It is difficult to predict when "new pasts" will overturn established historical interpretations and change the course of history.

In the fall of 1954, for example, C. Vann Woodward delivered a lecture series at the University of Virginia which challenged the prevailing dogma concerning the history, continuity,

and uniformity of racial segregation in the South. He argued that the Jim Crow laws of the late nineteenth and early twentieth centuries not only codified traditional practice but also were a determined effort to erase the considerable progress made by Black people during and after Reconstruction in the 1870's. This revisionist view of Jim Crow legislation grew in part from the research that Woodward had done for the NAACP legal campaign during its preparation for *Brown v. Board of Education*. The Supreme Court had issued its ruling in this epochal desegregation case a few months before Woodward's lectures.

The lectures were soon published as a book, *The Strange Career of Jim Crow*. Ten years later, in a preface to the second revised edition, Woodward confessed with ironic modesty that the first edition "had begun to suffer under some of the handicaps that might be expected in a history of the American Revolution published in 1776." That was a bit like hearing Thomas Paine apologize for the timing of his pamphlet *Common Sense*, which had a comparable impact. Although *Common Sense* also had a mass readership, Paine had intended to reach and inspire: he was not a historian, and thus not concerned with accuracy or the dangers of historical anachronism. Yet, like Paine, Woodward had an unerring sense of the revolutionary moment, and of how historical evidence could undermine the mythological tradition that was crushing the dreams of new social possibilities. Martin Luther King, Jr., testified to the profound effect of *The Strange Career of Jim Crow* on the civil rights movement by praising the book and quoting it frequently.

1. The "new pasts" mentioned in line 6 can best be described as the
 - (A) occurrence of events extremely similar to past events
 - (B) history of the activities of studying, interpreting, and reading new historical writing
 - (C) change in people's understanding of the past due to more recent historical writing
 - (D) overturning of established historical interpretations by politically motivated politicians
 - (E) difficulty of predicting when a given historical interpretation will be overturned
2. It can be inferred from the passage that the "prevailing dogma" (line 10) held that
 - (A) Jim Crow laws were passed to give legal status to well-established discriminatory practices in the South
 - (B) Jim Crow laws were passed to establish order and uniformity in the discriminatory practices of different southern states
 - (C) Jim Crow laws were passed to erase the social gains that Black people had achieved since Reconstruction
 - (D) the continuity of racial segregation in the South was disrupted by passage of Jim Crow laws
 - (E) the Jim Crow laws of the late nineteenth and early twentieth centuries were passed to reverse the effect of earlier Jim Crow laws
3. Which of the following is the best example of writing that is likely to be subject

to the kinds of “handicaps” referred to in line 27?

- (A) A history of an auto manufacturing plant written by an employee during an auto-buying boom
 - (B) A critique of a statewide school-desegregation plan written by an elementary school teacher in that state
 - (C) A newspaper article assessing the historical importance of a United States President written shortly after the President has taken office
 - (D) A scientific paper describing the benefits of a certain surgical technique written by the surgeon who developed the technique
 - (E) Diary entries narrating the events of a battle written by a soldier who participated in the battle
4. The passage suggests that C. Vann Woodward and Thomas Paine were similar in all of the following ways EXCEPT:
- (A) Both had works published in the midst of important historical events.
 - (B) Both wrote works that enjoyed widespread popularity.
 - (C) Both exhibited an understanding of the relevance of historical evidence to contemporary issues.
 - (D) The works of both had a significant effect on events following their publication.
 - (E) Both were able to set aside worries about historical anachronism in order to reach and inspire.
5. The attitude of the author of the passage toward the work of C. Vann Woodward is best described as one of
- (A) respectful regard
 - (B) qualified approbation
 - (C) implied skepticism
 - (D) pointed criticism
 - (E) fervent advocacy
6. Which of the following best describes the new idea expressed by C. Vann Woodward in his University of Virginia lectures in 1954?
- (A) Southern racial segregation was continuous and uniform.
 - (B) Black people made considerable progress only after Reconstruction.
 - (C) Jim Crow legislation was conventional in nature.
 - (D) Jim Crow laws did not go as far in codifying traditional practice as they might have.
 - (E) Jim Crow laws did much more than merely reinforce a tradition of segregation.

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

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

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

1. The passage as a whole can best be characterized as which of the following?
 - (A) An evaluation of a scholarly study
 - (B) A description of an attitudinal change
 - (C) A discussion of an analytical defect
 - (D) An analysis of the causes of a phenomenon
 - (E) An argument in favor of revising a view
2. According to the author, which of the following is true of Glatthaar's *Forged in Battle* compared with previous studies on the same topic?
 - (A) It is more reliable and presents a more complete picture of the historical events on which it concentrates than do previous studies.
 - (B) It uses more of a particular kind of source material and focuses more closely on a particular aspect of the topic than do previous studies.
 - (C) It contains some unsupported generalizations, but it rightly emphasizes a theme ignored by most previous studies.
 - (D) It surpasses previous studies on the same topic in that it accurately describes

conditions often neglected by those studies.

- (E) It makes skillful use of supporting evidence to illustrate a subtle trend that previous studies have failed to detect.
3. The author implies that the title of Glatthaar's book refers specifically to which of the following?
- (A) The sense of pride and accomplishment that Black soldiers increasingly felt as a result of their Civil War experiences
 - (B) The civil equality that African Americans achieved after the Civil War, partly as a result of their use of organizational skills honed by combat
 - (C) The changes in discriminatory army policies that were made as a direct result of the performance of Black combat units during the Civil War
 - (D) The improved interracial relations that were formed by the races' facing of common dangers and their waging of a common fight during the Civil War
 - (E) The standards of racial egalitarianism that came to be adopted as a result of White Civil War veterans' repudiation of the previous racism
4. The passage mentions which of the following as an important theme that receives special emphasis in Glatthaar's book?
- (A) The attitudes of abolitionist officers in Black units
 - (B) The struggle of Black units to get combat assignments
 - (C) The consequences of the poor medical care received by Black soldiers
 - (D) The motives of officers serving in Black units
 - (E) The discrimination that Black soldiers faced when trying for promotions
5. The passage suggests that which of the following was true of Black units' disease mortality rates in the Civil War?
- (A) They were almost as high as the combat mortality rates of White units.
 - (B) They resulted in part from the relative inexperience of these units when in combat.
 - (C) They were especially high because of the nature of these units' usual duty assignments.
 - (D) They resulted in extremely high overall casualty rates in Black combat units.
 - (E) They exacerbated the morale problems that were caused by the army's discriminatory policies.
6. The author of the passage quotes the White officer in [lines 23-24](#) primarily in order to provide evidence to support the contention that
- (A) virtually all White officers initially had hostile attitudes toward Black soldiers
 - (B) Black soldiers were often forced to defend themselves from physical attacks initiated by soldiers from White units
 - (C) the combat performance of Black units changed the attitudes of White soldiers toward Black soldiers

- (D) White units paid especially careful attention to the performance of Black units in battle
- (E) respect in the army as a whole was accorded only to those units, whether Black or White, that performed well in battle
7. Which of the following best describes the kind of error attributed to Glatthaar in [lines 25-28](#)?
- (A) Insisting on an unwarranted distinction between two groups of individuals in order to render an argument concerning them internally consistent
- (B) Supporting an argument in favor of a given interpretation of a situation with evidence that is not particularly relevant to the situation
- (C) Presenting a distorted view of the motives of certain individuals in order to provide grounds for a negative evaluation of their actions
- (D) Describing the conditions prevailing before a given event in such a way that the contrast with those prevailing after the event appears more striking than it actually is
- (E) Asserting that a given event is caused by another event merely because the other event occurred before the given event occurred
8. Which of the following actions can best be described as indulging in “generational chauvinism” ([lines 40-41](#)) as that practice is defined in the passage?
- (A) Condemning a present-day monarch merely because many monarchs have been tyrannical in the past.
- (B) Clinging to the formal standards of politeness common in one’s youth to such a degree that any relaxation of those standards is intolerable.
- (C) Questioning the accuracy of a report written by an employee merely because of the employee’s gender.
- (D) Deriding the superstitions accepted as “science” in past eras without acknowledging the prevalence of irrational beliefs today.
- (E) Labeling a nineteenth-century politician as “corrupt” for engaging in once-acceptable practices considered intolerable today.

Passage 44 (44/63)

It was once assumed that all living things could be divided into two fundamental and exhaustive categories. Multicellular plants and animals, as well as many unicellular organisms, are eukaryotic—their large, complex cells have a well-formed nucleus and many organelles. On the other hand, the true bacteria are **prokaryotic cell**, which are simple and lack a nucleus. The distinction between eukaryotes and bacteria, initially defined in terms of subcellular structures visible with a microscope, was ultimately carried to the molecular level. Here prokaryotic and eukaryotic cells have many features in common. For instance, they translate genetic information into proteins according to the same type of genetic coding. But even where the molecular processes are the same, the details in the two forms are different and characteristic

of the respective forms. For example, the amino acid sequences of various enzymes tend to be typically prokaryotic or eukaryotic. The differences between the groups and the similarities within each group made it seem certain to most biologists that the tree of life had only two stems. Moreover, arguments pointing out the extent of both structural and functional differences between eukaryotes and true bacteria convinced many biologists that the precursors of the eukaryotes must have diverged from the common ancestor before the bacteria arose.

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

1. The passage is primarily concerned with
 - (A) detailing the evidence that has led most biologists to replace the trichotomous picture of living organisms with a dichotomous one
 - (B) outlining the factors that have contributed to the current hypothesis concerning the number of basic categories of living organisms
 - (C) evaluating experiments that have resulted in proof that the prokaryotes are more ancient than had been expected
 - (D) summarizing the differences in structure and function found among true bacteria, archaebacteria, and eukaryotes
 - (E) formulating a hypothesis about the mechanisms of evolution that resulted in the ancestors of the prokaryotes
2. According to the passage, investigations of eukaryotic and prokaryotic cells at the molecular level supported the conclusion that
 - (A) most eukaryotic organisms are unicellular
 - (B) complex cells have well-formed nuclei
 - (C) prokaryotes and eukaryotes form two fundamental categories
 - (D) subcellular structures are visible with a microscope
 - (E) prokaryotic and eukaryotic cells have similar enzymes
3. According to the passage, which of the following statements about the two-category hypothesis is likely to be true?
 - (A) It is promising because it explains the presence of true bacteria-like organisms such as organelles in eukaryotic cells.

- (B) It is promising because it explains why eukaryotic cells, unlike prokaryotic cells, tend to form multicellular organisms.
- (C) It is flawed because it fails to account for the great variety among eukaryotic organisms.
- (D) It is flawed because it fails to account for the similarity between prokaryotes and eukaryotes.
- (E) It is flawed because it fails to recognize an important distinction among prokaryotes.
4. It can be inferred from the passage that which of the following have recently been compared in order to clarify the fundamental classifications of living things?
- (A) The genetic coding in true bacteria and that in other prokaryotes
- (B) The organelle structures of archaeobacteria, true bacteria, and eukaryotes
- (C) The cellular structures of multicellular organisms and unicellular organisms
- (D) The molecular sequences in eukaryotic RNA, true bacterial RNA, and archaeobacterial RNA
- (E) The amino acid sequences in enzymes of various eukaryotic species and those of enzymes in archaeobacterial species
5. If the “new techniques” mentioned in line 31 were applied in studies of biological classifications other than bacteria, which of the following is most likely?
- (A) Some of those classifications will have to be reevaluated.
- (B) Many species of bacteria will be reclassified.
- (C) It will be determined that there are four main categories of living things rather than three.
- (D) It will be found that true bacteria are much older than eukaryotes.
- (E) It will be found that there is a common ancestor of the eukaryotes, archaeobacteria, and true bacteria.
6. According to the passage, researchers working under the two-category hypothesis were correct in thinking that
- (A) prokaryotes form a coherent group
- (B) the common ancestor of all living things had complex properties
- (C) eukaryotes are fundamentally different from true bacteria
- (D) true bacteria are just as complex as eukaryotes
- (E) ancestral versions of eukaryotic genes functioned differently from their modern counterparts
7. All of the following statements are supported by the passage EXCEPT:
- (A) True bacteria form a distinct evolutionary group.
- (B) Archaeobacteria are prokaryotes that resemble true bacteria.
- (C) True bacteria and eukaryotes employ similar types of genetic coding.

- (D) True bacteria and eukaryotes are distinguishable at the subcellular level.
- (E) Amino acid sequences of enzymes are uniform for eukaryotic and prokaryotic organisms.
8. The author's attitude toward the view that living things are divided into three categories is best described as one of
- (A) tentative acceptance
- (B) mild skepticism
- (C) limited denial
- (D) studious criticism
- (E) whole hearted endorsement

Passage 45 (45/63)

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

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

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

1. The author mentions each of the following as a cause of excess inventory EXCEPT
- (A) production of too much merchandise

- (B) inaccurate forecasting of buyers' preferences
 - (C) unrealistic pricing policies
 - (D) products' rapid obsolescence
 - (E) availability of a better product
2. The passage suggests that which of the following is a kind of product that a liquidator who sells to discount stores would be unlikely to wish to acquire?
- (A) Furniture
 - (B) Computers
 - (C) Kitchen equipment
 - (D) Baby-care products
 - (E) Children's clothing
3. The passage provides information that supports which of the following statements?
- (A) Excess inventory results most often from insufficient market analysis by the manufacturer.
 - (B) Products with slight manufacturing defects may contribute to excess inventory.
 - (C) Few manufacturers have taken advantage of the changes in the federal tax laws.
 - (D) Manufacturers who dump their excess inventory are often caught and exposed by the news media.
 - (E) Most products available in discount stores have come from manufacturers' excess-inventory stock.
4. The author cites the examples in [lines 25-29](#) most probably in order to illustrate
- (A) the fiscal irresponsibility of dumping as a policy for dealing with excess inventory
 - (B) the waste-management problems that dumping new products creates
 - (C) the advantages to the manufacturer of dumping as a policy
 - (D) alternatives to dumping explored by different companies
 - (E) how the news media could portray dumping to the detriment of the manufacturer's reputation
5. By asserting that manufacturers "are simply unaware" ([line 31](#)), the author suggests which of the following?
- (A) Manufacturers might donate excess inventory to charity rather than dump it if they knew about the provision in the federal tax code.
 - (B) The federal government has failed to provide sufficient encouragement to manufacturers to make use of advantageous tax policies.
 - (C) Manufacturers who choose to dump excess inventory are not aware of the

- possible effects on their reputation of media coverage of such dumping.
- (D) The manufacturers of products disposed of by dumping are unaware of the needs of those people who would find the products useful.
- (E) The manufacturers who dump their excess inventory are not familiar with the employment of liquidators to dispose of overstock.
6. The information in the passage suggests that which of the following, if true, would make donating excess inventory to charity less attractive to manufacturers than dumping?
- (A) The costs of getting the inventory to the charitable destination are greater than the above-cost tax deduction.
- (B) The news media give manufacturers' charitable contributions the same amount of coverage that they give dumping.
- (C) No straight-cost tax benefit can be claimed for items that are dumped.
- (D) The fair-market value of an item in excess inventory is 5 times its cost.
- (E) Items end up as excess inventory because of a change in the public's preferences.
7. Information in the passage suggests that one reason manufacturers might take advantage of the tax provision mentioned in the last paragraph is that
- (A) there are many kinds of products that cannot be legally dumped in a landfill
- (B) liquidators often refuse to handle products with slight imperfections
- (C) the law allows a deduction in excess of the cost of manufacturing the product
- (D) media coverage of contributions of excess-inventory products to charity is widespread and favorable
- (E) no tax deduction is available for products dumped or sold to a liquidator

Passage 46 (46/63)

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

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

Despite Beta's substantial technological **head start** and the fact that VHS was neither technically better nor cheaper than Beta, developers of VHS quickly turned a slight early lead in sales into a dominant position. Strategic alignments with producers of prerecorded tapes reinforced the VHS advantage. The perception among consumers that prerecorded tapes were

more available in VHS format further expanded VHS's share of the market. By the end of the 1980's, Beta was no longer in production.

1. The passage is primarily concerned with which of the following?
 - (A) Evaluating two competing technologies
 - (B) Tracing the impact of a new technology by narrating a sequence of events
 - (C) Reinterpreting an event from contemporary business history
 - (D) Illustrating a business strategy by means of a case history
 - (E) Proposing an innovative approach to business planning
2. According to the passage, today's successful firms, unlike successful firms in the past, may earn the greatest profits by
 - (A) investing in research to produce cheaper versions of existing technology
 - (B) being the first to market a competing technology
 - (C) adapting rapidly to a technological standard previously set by a competing firm
 - (D) establishing technological leadership in order to shape product definitions in advance of competing firms
 - (E) emphasizing the development of methods for the mass production and distribution of a new technology
3. According to the passage, consumers began to develop a preference for VCR's in the VHS format because they believed which of the following?
 - (A) VCR's in the VHS format were technically better than competing-format VCR's.
 - (B) VCR's in the VHS format were less expensive than competing-format VCR's.
 - (C) VHS was the first standard format for VCR's.
 - (D) VHS prerecorded videotapes were more available than Beta-format tapes.
 - (E) VCR's in the Beta format would soon cease to be produced.
4. The author implies that one way that VHS producers won control over the VCR market was by
 - (A) carefully restricting access to VCR technology
 - (B) giving up a slight early lead in VCR sales in order to improve long-term prospects
 - (C) retaining a strict monopoly on the production of prerecorded videotapes
 - (D) sharing control of the marketing of VHS-format VCR's
 - (E) sacrificing technological superiority over Beta-format VCR's in order to remain competitive in price
5. The alignment of producers of VHS-format VCR's with producers of prerecorded videotapes is most similar to which of the following?
 - (A) The alignment of an automobile manufacturer with another automobile

- manufacturer to adopt a standard design for automobile engines.
- (B) The alignment of an automobile manufacturer with an automotive glass company **whereby** the manufacturer agrees to purchase automobile windshields only from that one glass company.
- (C) The alignment of an automobile manufacturer with a petroleum company to ensure the widespread availability of the fuel required by a new type of engine developed by the manufacturer.
- (D) The alignment of an automobile manufacturer with its dealers to adopt a plan to improve automobile design.
- (E) The alignment of an automobile dealer with an automobile rental chain to adopt a strategy for an advertising campaign to promote a new type of automobile.
6. Which of the following best describes the relation of the first paragraph to the passage as a whole?
- (A) It makes a general observation to be exemplified.
- (B) It outlines a process to be analyzed.
- (C) It poses a question to be answered.
- (D) It advances an argument to be disputed.
- (E) It introduces conflicting arguments to be reconciled.

Passage 47 (47/63)

Australian researchers have discovered electroreceptors (sensory organs designed to respond to electrical fields) clustered at the tip of the **spiny anteater's** snout. The researchers made this discovery by exposing small areas of the snout to extremely weak electrical fields and recording the transmission of resulting nervous activity to the brain. While it is true that tactile receptors, another kind of sensory organ on the anteater's snout, can also respond to electrical stimuli, such receptors do so only in response to electrical field strengths about 1,000 times greater than those known to excite electroreceptors.

Having discovered the electroreceptors, researchers are now investigating how anteaters utilize such a sophisticated sensory system. In one behavioral experiment, researchers successfully trained an anteater to distinguish between two troughs of water, one with a weak electrical field and the other with none. Such evidence is consistent with researchers' hypothesis that anteaters use electroreceptors to detect electrical signals given off by prey; however, researchers as yet have been unable to detect electrical signals emanating from termite mounds, where the favorite food of anteaters live. Still, researchers have observed anteaters breaking into a nest of ants at an **oblique angle** and quickly locating nesting chambers. This ability quickly to locate unseen prey suggests, according to the researchers, that the anteaters were using their electroreceptors to locate the nesting chambers.

1. According to the passage, which of the following is a characteristic that distinguishes electroreceptors from tactile receptors?

- (A) The manner in which electroreceptors respond to electrical stimuli
 - (B) The tendency of electroreceptors to be found in clusters
 - (C) The unusual locations in which electroreceptors are found in most species
 - (D) The amount of electrical stimulation required to excite electroreceptors
 - (E) The amount of nervous activity transmitted to the brain by electroreceptors when they are excited
2. Which of the following can be inferred about the experiment described in the first paragraph?
- (A) Researchers had difficulty verifying the existence of electroreceptors in the anteater because electroreceptors respond to such a narrow range of electrical field strengths.
 - (B) Researchers found that the level of nervous activity in the anteater's brain increased dramatically as the strength of the electrical stimulus was increased.
 - (C) Researchers found that some areas of the anteater's snout were not sensitive to a weak electrical stimulus.
 - (D) Researchers found that the anteater's tactile receptors were more easily excited by a strong electrical stimulus than were the electroreceptors.
 - (E) Researchers tested small areas of the anteater's snout in order to ensure that only electroreceptors were responding to the stimulus.
3. The author of the passage most probably discusses the function of tactile receptors (lines 7-11) in order to
- (A) eliminate an alternative explanation of anteaters' response to electrical stimuli
 - (B) highlight a type of sensory organ that has a function identical to that of electroreceptors
 - (C) point out a serious complication in the research on electroreceptors in anteaters
 - (D) suggest that tactile receptors assist electroreceptors in the detection of electrical signals
 - (E) introduce a factor that was not addressed in the research on electroreceptors in anteaters
4. Which of the following can be inferred about anteaters from the behavioral experiment mentioned in the second paragraph?
- (A) They are unable to distinguish between stimuli detected by their electroreceptors and stimuli detected by their tactile receptors.
 - (B) They are unable to distinguish between the electrical signals emanating from termite mounds and those emanating from ant nests.
 - (C) They can be trained to recognize consistently the presence of a particular

stimulus.

- (D) They react more readily to strong than to weak stimuli.
- (E) They are more efficient at detecting stimuli in a controlled environment than in a natural environment.
5. The passage suggests that the researchers mentioned in the second paragraph who observed anteaters break into a nest of ants would most likely agree with which of the following statements?
- (A) The event they observed provides conclusive evidence that anteaters use their electroreceptors to locate unseen prey.
- (B) The event they observed was atypical and may not reflect the usual hunting practices of anteaters.
- (C) It is likely that the anteaters located the ants' nesting chambers without the assistance of electroreceptors.
- (D) Anteaters possess a very simple sensory system for use in locating prey.
- (E) The speed with which the anteaters located their prey is greater than what might be expected on the basis of chance alone.
6. Which of the following, if true, would most strengthen the hypothesis mentioned in lines 17-19?
- (A) Researchers are able to train anteaters to break into an underground chamber that is emitting a strong electrical signal.
- (B) Researchers are able to detect a weak electrical signal emanating from the nesting chamber of an ant colony.
- (C) Anteaters are observed taking increasingly longer amounts of time to locate the nesting chambers of ants.
- (D) Anteaters are observed using various angles to break into nests of ants.
- (E) Anteaters are observed using the same angle used with nests of ants to break into the nests of other types of prey.

Passage 48 (48/63)

When A. Philip Randolph assumed the leadership of the Brotherhood of **Sleeping Car** Porters, he began a ten-year battle to win recognition from the **Pullman** Company, the largest private employer of Black people in the United States and the company that controlled the railroad industry's **sleeping car** and **parlor** service. In 1935 the Brotherhood became the first Black union recognized by a major corporation. Randolph's efforts in the battle helped transform the attitude of Black workers toward unions and toward themselves as an identifiable group; eventually, Randolph helped to weaken organized labor's antagonism toward Black workers.

In the Pullman contest Randolph faced formidable obstacles. The first was Black workers' understandable skepticism toward unions, which had historically barred Black workers from membership. An additional obstacle was the union that Pullman itself had formed, which

weakened support among Black workers for an independent entity.

The Brotherhood possessed a number of advantages, however, including Randolph's own tactical abilities. In 1928 he took the bold step of threatening a strike against Pullman. Such a threat, on a national scale, under Black leadership, helped replace the stereotype of the Black worker as servant with the image of the Black worker as **wage earner**. In addition, the porters' very isolation aided the Brotherhood. Porters were scattered throughout the country, sleeping in dormitories in Black communities; their segregated life protected the union's internal communications from interception. That the porters were a homogeneous group working for a single employer with single labor policy, thus sharing the same grievances from city to city, also strengthened the Brotherhood and encouraged racial identity and solidarity as well. But it was only in the early 1930's that federal legislation prohibiting a company from maintaining its own unions with company money eventually allowed the Brotherhood to become recognized as the porters' representative.

Not content with this triumph, Randolph brought the Brotherhood into the American Federation of Labor, where it became the equal of the Federation's 105 other unions. He reasoned that as a member union, the Brotherhood would be in a better position to exert pressure on member unions that practiced race restrictions. Such restrictions were eventually found unconstitutional in 1944.

1. According to the passage, by 1935 the skepticism of Black workers toward unions was
 - (A) unchanged except among Black employees of railroad-related industries
 - (B) reinforced by the actions of the Pullman Company's union
 - (C) mitigated by the efforts of Randolph
 - (D) weakened by the opening up of many unions to Black workers
 - (E) largely alleviated because of the policies of the American Federation of Labor
2. In using the word "understandable" (line 14), the author most clearly conveys
 - (A) sympathy with attempts by the Brotherhood between 1925 and 1935 to establish an independent union
 - (B) concern that the obstacles faced by Randolph between 1925 and 1935 were indeed formidable
 - (C) ambivalence about the significance of unions to most Black workers in the 1920's
 - (D) appreciation of the attitude of many Black workers in the 1920's toward unions
 - (E) regret at the historical attitude of unions toward Black workers
3. The passage suggests which of the following about the response of porters to the Pullman Company's own union?
 - (A) Few porters ever joined this union.
 - (B) Some porters supported this union before 1935.
 - (C) Porters, more than other Pullman employees, enthusiastically supported this

- union.
- (D) The porters' response was most positive after 1935.
- (E) The porters' response was unaffected by the general skepticism of Black workers concerning unions.
4. The passage suggests that if the grievances of porters in one part of the United States had been different from those of porters in another part of the country, which of the following would have been the case?
- (A) It would have been more difficult for the Pullman Company to have had a single labor policy.
- (B) It would have been more difficult for the Brotherhood to control its channels of communication.
- (C) It would have been more difficult for the Brotherhood to build its membership.
- (D) It would have been easier for the Pullman Company's union to attract membership.
- (E) It would have been easier for the Brotherhood to threaten strikes.
5. The passage suggests that in the 1920's a company in the United States was able to
- (A) use its own funds to set up a union
- (B) require its employees to join the company's own union
- (C) develop a single labor policy for all its employees with little employee dissent
- (D) pressure its employees to contribute money to maintain the company's own union
- (E) use its resources to prevent the passage of federal legislation that would have facilitated the formation of independent unions
6. The passage supplies information concerning which of the following matters related to Randolph?
- (A) The steps he took to initiate the founding of the Brotherhood
- (B) His motivation for bringing the Brotherhood into the American Federation of Labor
- (C) The influence he had on the passage of legislation overturning race restrictions in 1944
- (D) The influence he had on the passage of legislation to bar companies from financing their own unions
- (E) The success he and the Brotherhood had in influencing the policies of the other unions in the American Federation of Labor

Passage 49 (49/63)

Historians of women's labor in the United States at first largely disregarded the story of

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

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

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

1. According to the passage, job segregation by sex in the United States was
 - (A) greatly diminished by labor mobilization during the Second World War
 - (B) perpetuated by those textile-mill owners who argued in favor of women’s employment in wage labor
 - (C) one means by which women achieved greater job security
 - (D) reluctantly challenged by employers except when the economic advantages were obvious
 - (E) a constant source of labor unrest in the young textile industry
2. According to the passage, historians of women’s labor focused on factory work as a more promising area of research than service-sector work because factory work
 - (A) involved the payment of higher wages
 - (B) required skill in detailed tasks
 - (C) was assumed to be less characterized by sex segregation
 - (D) was more readily accepted by women than by men
 - (E) fitted the economic dynamic of industrialism better

3. It can be inferred from the passage that early historians of women's labor in the United States paid little attention to women's employment in the service sector of the economy because
- (A) the extreme variety of these occupations made it very difficult to assemble meaningful statistics about them
 - (B) fewer women found employment in the service sector than in factory work
 - (C) the wages paid to workers in the service sector were much lower than those paid in the industrial sector
 - (D) women's employment in the service sector tended to be much more short-term than in factory work
 - (E) employment in the service sector seemed to have much in common with the unpaid work associated with homemaking
4. The passage supports which of the following statements about the early mill owners mentioned in the second paragraph?
- (A) They hoped that by creating relatively unattractive "female" jobs they would discourage women from losing interest in marriage and family life.
 - (B) They sought to increase the size of the available labor force as a means to keep men's wages low.
 - (C) They argued that women were inherently suited to do well in particular kinds of factory work.
 - (D) They thought that factory work bettered the condition of women by emancipating them from dependence on income earned by men.
 - (E) They felt guilty about disturbing the traditional division of labor in family.
5. It can be inferred from the passage that the "unfinished revolution" the author mentions in line 13 refers to the
- (A) entry of women into the industrial labor market
 - (B) recognition that work done by women as homemakers should be compensated at rates comparable to those prevailing in the service sector of the economy
 - (C) development of a new definition of femininity unrelated to the economic forces of industrialism
 - (D) introduction of equal pay for equal work in all professions
 - (E) emancipation of women wage earners from gender-determined job allocation
6. The passage supports which of the following statements about hiring policies in the United States?
- (A) After a crisis many formerly "male" jobs are reclassified as "female" jobs.
 - (B) Industrial employers generally prefer to hire women with previous experience as homemakers.
 - (C) Post-Second World War hiring policies caused women to lose many of their wartime gains in employment opportunity.

- (D) Even war industries during the Second World War were reluctant to hire women for factory work.
- (E) The service sector of the economy has proved more nearly gender-blind in its hiring policies than has the manufacturing sector.
7. Which of the following words best expresses the opinion of the author of the passage concerning the notion that women are more skillful than men in carrying out detailed tasks?
- (A) “patient” (line 21)
- (B) “repetitive” (line 21)
- (C) “hoary” (line 22)
- (D) “homemaking” (line 23)
- (E) “purview” (line 24)
8. Which of the following best describes the relationship of the final paragraph to the passage as a whole?
- (A) The central idea is reinforced by the citation of evidence drawn from twentieth-century history.
- (B) The central idea is restated in such a way as to form a transition to a new topic for discussion.
- (C) The central idea is restated and juxtaposed with evidence that might appear to contradict it.
- (D) A partial exception to the generalizations of the central idea is dismissed as unimportant.
- (E) Recent history is cited to suggest that the central idea’s validity is gradually diminishing.

Passage 50 (50/63)

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

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

The challenge in exploration is therefore to unravel the subsurface geology of an area and pinpoint the position of buried minerals. Methods widely used today include analysis of aerial images that yield a broad geological overview; geophysical techniques that provide data on the

magnetic, electrical, and mineralogical properties of the rocks being investigated; and sensitive chemical tests that are able to detect the subtle chemical halos that often envelop mineralization. However, none of these high-technology methods are of any value if the sites to which they are applied have never mineralized, and to maximize the chances of discovery the explorer must therefore pay particular attention to selecting the ground formations most likely to be mineralized. Such ground selection relies to varying degrees on conceptual models, which take into account theoretical studies of relevant factors.

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

1. The author is primarily concerned with
 - (A) advocating a return to an older methodology
 - (B) explaining the importance of a recent theory
 - (C) enumerating differences between two widely used methods
 - (D) describing events leading to a discovery
 - (E) challenging the assumptions on which a theory is based
2. According to the passage, the widely held view of Archean-age gold-quartz vein systems is that such systems
 - (A) were formed from metamorphic fluids
 - (B) originated in molten granite-like bodies
 - (C) were formed from alluvial deposits
 - (D) generally have surface expression
 - (E) are not discoverable through chemical tests
3. The passage implies that which of the following steps would be the first performed by explorers who wish to maximize their chances of discovering gold?
 - (A) Surveying several sites known to have been formed more than two billion years ago
 - (B) Limiting exploration to sites known to have been formed from metamorphic fluid
 - (C) Using an appropriate conceptual model to select a site for further exploration
 - (D) Using geophysical methods to analyze rocks over a broad area
 - (E) Limiting exploration to sites where alluvial gold has previously been found
4. Which of the following statements about discoveries of gold deposits is supported by information in the passage?
 - (A) The number of gold discoveries made annually has increased between the time of the original gold rushes and the present.
 - (B) New discoveries of gold deposits are likely to be the result of exploration

techniques designed to locate buried mineralization.

- (C) It is unlikely that newly discovered gold deposits will ever yield as much as did those deposits discovered during the original gold rushes.
 - (D) Modern explorers are divided on the question of the utility of simple prospecting methods as a source of new discoveries of gold deposits.
 - (E) Models based on the theory that gold originated from magnetic fluids have already led to new discoveries of gold deposits.
5. It can be inferred from the passage that which of the following is easiest to detect?
- (A) A gold-quartz vein system originating in magnetic fluids
 - (B) A gold-quartz vein system originating in metamorphic fluids
 - (C) A gold deposit that is mixed with granite
 - (D) A gold deposit that has shed alluvial gold
 - (E) A gold deposit that exhibits chemical halos
6. The theory mentioned in line 1 relates to the conceptual models discussed in the passage in which of the following ways?
- (A) It may furnish a valid account of ore-forming processes, and, hence, can support conceptual models that have great practical significance.
 - (B) It suggests that certain geological formations, long believed to be mineralized, are in fact mineralized, thus confirming current conceptual models.
 - (C) It suggests that there may not be enough similarity across Archean-age gold-quartz vein systems to warrant the formulation of conceptual models.
 - (D) It corrects existing theories about the chemical halos of gold deposits, and thus provides a basis for correcting current conceptual models.
 - (E) It suggests that simple prospecting methods still have a higher success rate in the discovery of gold deposits than do more modern methods.
7. According to the passage, methods of exploring for gold that are widely used today are based on which of the following facts?
- (A) Most of the Earth's remaining gold deposits are still molten.
 - (B) Most of the Earth's remaining gold deposits are exposed at the surface.
 - (C) Most of the Earth's remaining gold deposits are buried and have no surface expression.
 - (D) Only one type of gold deposit warrants exploration, since the other types of gold deposits are found in regions difficult to reach.
 - (E) Only one type of gold deposit warrants exploration, since the other types of gold deposits are unlikely to yield concentrated quantities of gold.
8. It can be inferred from the passage that the efficiency of model-based gold exploration depends on which of the following?
- I. The closeness of the match between the geological features identified by the

model as critical and the actual geological features of a given area

- II. The degree to which the model chosen relies on empirical observation of known mineral deposits rather than on theories of ore-forming processes
 - III. The degree to which the model chosen is based on an accurate description of the events leading to mineralization
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) I and III only
 - (E) I, II and III

Passage 51 (51/63)

While there is no **blueprint** for transforming a largely government-controlled economy into a free one, the experience of the United Kingdom since 1979 clearly shows one approach that works: privatization, in which state-owned industries are sold to private companies. By 1979, the total borrowings and losses of state-owned industries were running at about £3 billion a year. By selling many of these industries, the government has decreased these borrowings and losses, gained over £34 billion from the sales, and now receives tax revenues from the newly privatized companies. Along with a dramatically improved overall economy, the government has been able to repay 12.5 percent of the net national debt over a two-year period.

In fact, privatization has not only rescued individual industries and a whole economy headed for disaster, but has also raised the level of performance in every area. At British Airways and British Gas, for example, productivity per employee has risen by 20 percent. At Associated British Ports, labor disruptions common in the 1970's and early 1980's have now virtually disappeared. At British Telecom, there is no longer a waiting list—as there always was before privatization—to have a telephone installed.

Part of this improved productivity has **come about** because the employees of privatized industries were given the opportunity to buy shares in their own companies. They responded enthusiastically to the offer of shares; at British Aerospace, 89 percent of the eligible work force bought shares; at Associated British Ports, 90 percent; and at British Telecom, 92 percent. When people have a personal stake in something, they think about it, care about it, work to make it prosper. At the National Freight Consortium, the new employee-owners grew so concerned about their company's profits that during wage negotiations they actually pressed their union to lower its wage demands.

Some economists have suggested that giving away free shares would provide a needed acceleration of the privatization process. Yet they miss Thomas Paine's point that "what we obtain too cheap we esteem too lightly." In order for the far-ranging benefits of individual ownership to be achieved by owners, companies, and countries, employees and other individuals must make their own decisions to buy, and they must commit some of their own resources to the choice.

1. According to the passage, all of the following were benefits of privatizing

state-owned industries in the United Kingdom EXCEPT:

- (A) Privatized industries paid taxes to the government.
 - (B) The government gained revenue from selling state-owned industries.
 - (C) The government repaid some of its national debt.
 - (D) Profits from industries that were still state-owned increased.
 - (E) Total borrowings and losses of state-owned industries decreased.
2. According to the passage, which of the following resulted in increased productivity in companies that have been privatized?
- (A) A large number of employees chose to purchase shares in their companies.
 - (B) Free shares were widely distributed to individual shareholders.
 - (C) The government ceased to regulate major industries.
 - (D) Unions conducted wage negotiations for employees.
 - (E) Employee-owners agreed to have their wages lowered.
3. It can be inferred from the passage that the author considers labor disruptions to be
- (A) an inevitable problem in a weak national economy
 - (B) a positive sign of employee concern about a company
 - (C) a predictor of employee reactions to a company's offer to sell shares to them
 - (D) a phenomenon found more often in state-owned industries than in private companies
 - (E) a deterrence to high performance levels in an industry
4. The passage supports which of the following statements about employees buying shares in their own companies?
- (A) At three different companies, approximately nine out of ten of the workers were eligible to buy shares in their companies.
 - (B) Approximately 90% of the eligible workers at three different companies chose to buy shares in their companies.
 - (C) The opportunity to buy shares was discouraged by at least some labor unions.
 - (D) Companies that demonstrated the highest productivity were the first to allow their employees the opportunity to buy shares.
 - (E) Eligibility to buy shares was contingent on employees' agreeing to increased work loads.
5. Which of the following statements is most consistent with the principle described in lines 30-32?
- (A) A democratic government that decides it is inappropriate to own a particular industry has in no way abdicated its responsibilities as guardian of the public interest.
 - (B) The ideal way for a government to protect employee interests is to force

- companies to maintain their share of a competitive market without government subsidies.
- (C) The failure to harness the power of self-interest is an important reason that state-owned industries perform poorly.
- (D) Governments that want to implement privatization programs must try to eliminate all resistance to the free-market system.
- (E) The individual shareholder will reap only a minute share of the gains from whatever sacrifices he or she makes to achieve these gains.
6. Which of the following can be inferred from the passage about the privatization process in the United Kingdom?
- (A) It depends to a potentially dangerous degree on individual ownership of shares.
- (B) It conforms in its most general outlines to Thomas Paine's prescription for business ownership.
- (C) It was originally conceived to include some giving away of free shares.
- (D) It has been successful, even though privatization has failed in other countries.
- (E) It is taking place more slowly than some economists suggest is necessary.
7. The quotation in [line 39](#) is most probably used to
- (A) counter a position that the author of the passage believes is incorrect
- (B) state a solution to a problem described in the previous sentence
- (C) show how opponents of the viewpoint of the author of the passage have supported their arguments
- (D) point out a paradox contained in a controversial viewpoint
- (E) present a historical maxim to challenge the principle introduced in the third paragraph

Passage 52 (52/63)

Seeking a competitive advantage, some professional service firms (for example, firms providing advertising, accounting, or health care services) have considered offering unconditional guarantees of satisfaction. Such guarantees specify what clients can expect and what the firm will do if it fails to fulfill these expectations. Particularly with first-time clients, an unconditional guarantee can be an effective marketing tool if the client is very cautious, the firm's fees are high, the negative consequences of bad service are grave, or business is difficult to obtain through referrals and **word-of-mouth**.

However, an unconditional guarantee can sometimes hinder marketing efforts. With its implication that failure is possible, the guarantee may, paradoxically, cause clients to doubt the service firm's ability to deliver the promised level of service. It may conflict with a firm's desire to appear sophisticated, or may even suggest that a firm is begging for business. In legal and health care services, it may mislead clients by suggesting that lawsuits or medical procedures will have guaranteed outcomes. Indeed, professional service firms with outstanding reputations

and performance to match have little to gain from offering unconditional guarantees. And any firm that implements an unconditional guarantee without undertaking a commensurate commitment to quality of service is merely employing a potentially costly marketing gimmick.

1. The primary function of the passage as a whole is to
 - (A) account for the popularity of a practice
 - (B) evaluate the utility of a practice
 - (C) demonstrate how to institute a practice
 - (D) weigh the ethics of using a strategy
 - (E) explain the reasons for pursuing a strategy
2. All of the following are mentioned in the passage as circumstances in which professional service firms can benefit from offering an unconditional guarantee EXCEPT:
 - (A) The firm is having difficulty retaining its clients of long standing.
 - (B) The firm is having difficulty getting business through client recommendations.
 - (C) The firm charges substantial fees for its services.
 - (D) The adverse effects of poor performance by the firm are significant for the client.
 - (E) The client is reluctant to incur risk.
3. Which of the following is cited in the passage as a goal of some professional service firms in offering unconditional guarantees of satisfaction?
 - (A) A limit on the firm's liability
 - (B) Successful competition against other firms
 - (C) Ability to justify fee increases
 - (D) Attainment of an outstanding reputation in a field
 - (E) Improvement in the quality of the firm's service
4. The passage's description of the issue raised by unconditional guarantees for health care or legal services most clearly implies that which of the following is true?
 - (A) The legal and medical professions have standards of practice that would be violated by attempts to fulfill such unconditional guarantees.
 - (B) The result of a lawsuit of medical procedure cannot necessarily be determined in advance by the professionals handling a client's case.
 - (C) The dignity of the legal and medical professions is undermined by any attempts at marketing of professional services, including unconditional guarantees.
 - (D) Clients whose lawsuits or medical procedures have unsatisfactory outcomes cannot be adequately compensated by financial settlements alone.

- (E) Predicting the monetary cost of legal or health care services is more difficult than predicting the monetary cost of other types of professional services.
5. Which of the following hypothetical situations best exemplifies the potential problem noted in the second sentence of the second paragraph (lines 14-17)?
- (A) A physician's unconditional guarantee of satisfaction encourages patients to sue for malpractice if they are unhappy with the treatment they receive.
- (B) A lawyer's unconditional guarantee of satisfaction makes clients suspect that the lawyer needs to find new clients quickly to increase the firm's income.
- (C) A business consultant's unconditional guarantee of satisfaction is undermined when the consultant fails to provide all of the services that are promised.
- (D) An architect's unconditional guarantee of satisfaction makes clients wonder how often the architect's buildings fail to please clients.
- (E) An accountant's unconditional guarantee of satisfaction leads clients to believe that tax returns prepared by the accountant are certain to be accurate.
6. The passage most clearly implies which of the following about the professional service firms mentioned in line 22?
- (A) They are unlikely to have offered unconditional guarantees of satisfaction in the past.
- (B) They are usually profitable enough to be able to compensate clients according to the terms of an unconditional guarantee.
- (C) They usually practice in fields in which the outcomes are predictable.
- (D) Their fees are usually more affordable than those charged by other professional service firms.
- (E) Their clients are usually already satisfied with the quality of service that is delivered.

Passage 53 (53/63)

Although genetic mutations in bacteria and viruses can lead to epidemics, some epidemics are caused by bacteria and viruses that have undergone no significant genetic change. In analyzing the latter, scientists have discovered the importance of social and ecological factors to epidemics. **Poliomyelitis**, for example, emerged as an epidemic in the United States in the twentieth century; **by then**, modern sanitation was able to delay exposure to **polio** until adolescence or adulthood, at which time polio infection produced paralysis. Previously, infection had occurred during infancy, when it typically provided lifelong immunity without paralysis. Thus, the hygiene that helped prevent typhoid epidemics indirectly fostered a paralytic polio epidemic. Another example is Lyme disease, which is caused by bacteria that are transmitted by deer ticks. It occurred only sporadically during the late nineteenth century but has recently become prevalent in parts of the United States, largely due to an increase in the deer population that occurred simultaneously with the growth of the suburbs and increased outdoor recreational activities in the deer's habitat. Similarly, an outbreak of dengue hemorrhagic fever became an epidemic in Asia in the 1950's because of ecological changes that caused *Aedes*

aegypti, the mosquito that transmits the dengue virus, to proliferate. The stage is now set in the United States for a dengue epidemic because of the inadvertent introduction and wide dissemination of another mosquito, *Aedes albopictus*.

1. The passage suggests that a lack of modern sanitation would make which of the following most likely to occur?
 - (A) An outbreak of Lyme disease
 - (B) An outbreak of dengue hemorrhagic fever
 - (C) An epidemic of typhoid
 - (D) An epidemic of paralytic polio among infants
 - (E) An epidemic of paralytic polio among adolescents and adults
2. According to the passage, the outbreak of dengue hemorrhagic fever in the 1950's occurred for which of the following reasons?
 - (A) The mosquito *Aedes aegypti* was newly introduced into Asia.
 - (B) The mosquito *Aedes aegypti* became more numerous.
 - (C) The mosquito *Aedes albopictus* became infected with the dengue virus.
 - (D) Individuals who would normally acquire immunity to the dengue virus as infants were not infected until later in life.
 - (E) More people began to visit and inhabit areas in which mosquitoes live and breed.
3. It can be inferred from the passage that Lyme disease has become prevalent in parts of the United States because of which of the following?
 - (A) The inadvertent introduction of Lyme disease bacteria to the United States
 - (B) The inability of modern sanitation methods to eradicate Lyme disease bacteria
 - (C) A genetic mutation in Lyme disease bacteria that makes them more virulent
 - (D) The spread of Lyme disease bacteria from infected humans to noninfected humans
 - (E) An increase in the number of humans who encounter deer ticks
4. Which of the following can most reasonably be concluded about the mosquito *Aedes albopictus* on the basis of information given in the passage?
 - (A) It is native to the United States.
 - (B) It can proliferate only in Asia.
 - (C) It transmits the dengue virus.
 - (D) It caused an epidemic of dengue hemorrhagic fever in the 1950's.
 - (E) It replaced *Aedes aegypti* in Asia when ecological changes altered *Aedes aegypti*'s habitat.
5. Which of the following best describes the organization of the passage?
 - (A) A paradox is stated, discussed and left unresolved.

- (B) Two opposing explanations are presented, argued, and reconciled.
 - (C) A theory is proposed and is then followed by descriptions of three experiments that support the theory.
 - (D) A generalization is stated and is then followed by three instances that support the generalization.
 - (E) An argument is described and is then followed by three counterexamples that refute the argument.
6. Which of the following, if true, would most strengthen the author's assertion about the cause of the Lyme disease outbreak in the United States?
- (A) The deer population was smaller in the late nineteenth century than in the mid-twentieth century.
 - (B) Interest in outdoor recreation began to grow in the late nineteenth century.
 - (C) In recent years the suburbs have stopped growing.
 - (D) Outdoor recreation enthusiasts routinely take measures to protect themselves against Lyme disease.
 - (E) Scientists have not yet developed a vaccine that can prevent Lyme disease.

Passage 54 (54/63)

Two modes of argumentation have been used on behalf of women's emancipation in Western societies. Arguments in what could be called the "relational" feminist tradition maintain the doctrine of "equality in difference," or equity as distinct for equality. They posit that biological distinctions between the sexes result in a necessary sexual **division of labor** in the family and throughout society and that women's **procreative** labor is currently undervalued by society, to the disadvantage of women. By contrast, the individualist feminist tradition emphasizes individual human rights and celebrates women's quest for personal autonomy, while downplaying the importance of gender roles and minimizing discussion of childbearing and its **attendant** responsibilities.

Before the late nineteenth century, these views coexisted within the feminist movement, often within the writings of the same individual. Between 1890 and 1920, however, relational feminism, which had been the dominant strain in feminist thought, and which still predominates among European and non-Western feminists, lost ground in England and the United States. Because the concept of individual rights was already well established in the Anglo-Saxon legal and political tradition, individualist feminism came to predominate in English-speaking countries. At the same time, the goals of the two approaches began to seem increasingly irreconcilable. Individualist feminists began to advocate a totally gender-blind system with equal rights for all. Relational feminists, while agreeing that equal educational and economic opportunities outside the home should be available for all women, continued to emphasize women's special contributions to society as homemakers and mothers; they demanded special treatment including protective legislation for women workers, state-sponsored maternity benefits, and paid compensation for housework.

Relational arguments have a major pitfall: because they underline women's physiological and psychological distinctiveness, they are often **appropriated** by political adversaries and used to endorse male privilege. But the individualist approach, by attacking gender roles, denying the significance of physiological difference, and condemning existing familial institutions as hopelessly patriarchal, has often simply treated as irrelevant the family roles important to many women. If the individualist framework, with its claim for women's autonomy, could be harmonized with the family-oriented concerns of relational feminists, a more fruitful model for contemporary feminist politics could emerge.

1. The author of the passage alludes to the well-established nature of the concept of individual rights in the Anglo-Saxon legal and political tradition in order to
 - (A) illustrate the influence of individualist feminist thought on more general intellectual trends in English history
 - (B) argue that feminism was already a part of the larger Anglo-Saxon intellectual tradition, even though this has often gone unnoticed by critics of women's emancipation
 - (C) explain the decline in individualist thinking among feminists in non-English-speaking countries
 - (D) help account for an increasing shift toward individualist feminism among feminists in English-speaking countries
 - (E) account for the philosophical differences between individualist and relational feminists in English-speaking countries
2. The passage suggests that the author of the passage believes which of the following?
 - (A) The predominance of individualist feminism in English-speaking countries is a historical phenomenon, the causes of which have not yet been investigated.
 - (B) The individualist and relational feminist views are irreconcilable, given their theoretical differences concerning the foundations of society.
 - (C) A consensus concerning the direction of future feminist politics will probably soon emerge, given the awareness among feminists of the need for cooperation among women.
 - (D) Political adversaries of feminism often misuse arguments predicated on differences between the sexes to argue that the existing social system should be maintained.
 - (E) Relational feminism provides the best theoretical framework for contemporary feminist politics, but individualist feminism could contribute much toward refining and strengthening modern feminist thought.
3. It can be inferred from the passage that the individualist feminist tradition denies the validity of which of the following causal statements?
 - (A) A division of labor in a social group can result in increased efficiency with regard to the performance of group tasks.

- (B) A division of labor in a social group causes inequities in the distribution of opportunities and benefits among group members.
 - (C) A division of labor on the basis of gender in a social group is necessitated by the existence of sex-linked biological differences between male and female members of the group.
 - (D) Culturally determined distinctions based on gender in a social group foster the existence of differing attitudes and opinions among group members.
 - (E) Educational programs aimed at reducing inequalities based on gender among members of a social group can result in a sense of greater well-being for all members of the group.
4. According to the passage, relational feminists and individualist feminists agree that
- (A) individual human rights take precedence over most other social claims
 - (B) the gender-based division of labor in society should be eliminated
 - (C) laws guaranteeing equal treatment for all citizens regardless of gender should be passed
 - (D) a greater degree of social awareness concerning the importance of motherhood would be beneficial to society
 - (E) the same educational and economic opportunities should be available to both sexes
5. According to the author, which of the following was true of feminist thought in Western societies before 1890?
- (A) Individualist feminist arguments were not found in the thought or writing of non-English-speaking feminists.
 - (B) Individualist feminism was a strain in feminist thought, but another strain, relational feminism, predominated.
 - (C) Relational and individualist approaches were equally prevalent in feminist thought and writing.
 - (D) The predominant view among feminists held that the welfare of women was ultimately less important than the welfare of children.
 - (E) The predominant view among feminists held that the sexes should receive equal treatment under the law.
6. The author implies that which of the following was true of most feminist thinkers in England and the United States after 1920?
- (A) They were less concerned with politics than with intellectual issues.
 - (B) They began to reach a broader audience and their programs began to be adopted by mainstream political parties.
 - (C) They called repeatedly for international cooperation among women's groups to achieve their goals.

- (D) They moderated their initial criticism of the economic systems that characterized their societies.
- (E) They did not attempt to unite the two different feminist approaches in their thought.

Passage 55 (55/63)

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

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

1. The primary purpose of the passage is to
 - (A) present the results of statistical analyses and propose further studies.
 - (B) explain a recent development and predict its eventual consequences.
 - (C) identify the reasons for a trend and recommend measures to address it.
 - (D) outline several theories about a phenomenon and advocate one of them.
 - (E) describe the potential consequences of implementing a new policy and argue in favor of that policy.
2. According to the passage, which of the following is true of the "factors affecting employers" that are mentioned in lines 9-10?
 - (A) Most experts cite them as having initiated the growth in temporary employment that occurred during the 1980's.
 - (B) They may account for the increase in the total number of temporary workers during the 1980's.
 - (C) They were less important than demographic change in accounting for the increase of temporary employment during the 1980's.
 - (D) They included a sharp increase in the cost of labor during the 1980's.

- (E) They are more difficult to account for than at other factors involved in the growth of temporary employment during the 1980's.
3. The passage suggests which of the following about the use of temporary employment by firms during the 1980's?
- (A) It enabled firms to deal with fluctuating product demand far more efficiently than they before the 1980's.
- (B) It increased as a result of increased participation in the workforce by certain demography groups.
- (C) It was discouraged by government-mandated policies.
- (D) It was a response to preferences indicated by certain employees for more flexible working arrangements.
- (E) It increased partly as a result of workers' reduced ability to control the terms of their employment.
4. The passage suggests which of the following about the workers who took temporary jobs during the 1980's?
- (A) Their jobs frequently led to permanent positions within firms.
- (B) They constituted a less demographically diverse group than has been suggested.
- (C) They were occasionally involved in actions organized by labor unions.
- (D) Their pay declined during the decade in comparison with the pay of permanent employees.
- (E) They did not necessarily prefer temporary employment to permanent employment.
5. The first sentence in the passage suggests that the observers mentioned in line 1 would be most likely to predict which of the following?
- (A) That the number of new temporary positions would decline as fewer workers who preferred temporary employment entered the workforce.
- (B) That the total number of temporary positions would increase as fewer workers were able to find permanent positions.
- (C) That employers would have less control over the terms of workers' employment as workers increased their bargaining strength.
- (D) That more workers would be hired for temporary positions as product demand increased.
- (E) That the number of workers taking temporary positions would increase as more workers in any given demographic group entered the workforce.
6. In the context of the passage, the word "excessive" (line 21) most closely corresponds to which of the following phrases?
- (A) Far more than can be justified by worker preferences.
- (B) Far more than can be explained by fluctuations in product demand.

- (C) Far more than can be beneficial to the success of the firms themselves.
 - (D) Far more than can be accounted for by an expanding national economy.
 - (E) Far more than can be attributed to increases in the total number of people in the workforce.
7. The passage mentions each of the following as an appropriate kind of governmental action EXCEPT
- (A) getting firms to offer temporary employment primarily to a certain group of people
 - (B) encouraging equitable pay for temporary and permanent employees
 - (C) facilitating the organization of temporary workers by labor unions
 - (D) establishing guidelines on the proportion of temporary workers that firms should employ
 - (E) ensuring that temporary workers obtain benefits from their employers

Passage 56 (56/63)

Although numbers of animals in a given region may fluctuate from year to year, the fluctuations are often temporary and, over long periods, trivial. Scientists have advanced three theories of population control to account for this relative constancy.

The first theory attributes a relatively constant population to periodic climatic catastrophes that decimate populations with such frequency as to prevent them from exceeding some particular limit. In the case of small organisms with short life cycles, climatic changes need not be catastrophic: normal seasonal changes in photoperiod (daily amount of sunlight), for example, can govern population growth. This theory—the density-independent view—asserts that climatic factors exert the same regulatory effect on population regardless of the number of individuals in a region.

A second theory argues that population growth is primarily density-dependent—that is, the rate of growth of a population in a region decreases as the number of animals increases. The mechanisms that manage regulation may vary. For example, as numbers increase, the food supply would probably diminish, which would increase mortality. In addition, as Lotka and Volterra have shown, predators can find prey more easily in high-density populations. Other regulators include physiological control mechanisms: for example, Christian and Davis have demonstrated how the crowding that results from a rise in numbers may bring about hormonal changes in the pituitary and adrenal glands that in turn may regulate population by lowering sexual activity and inhibiting sexual maturation. There is evidence that these effects may persist for three generations in the absence of the original provocation. One challenge for density-dependent theorists is to develop models that would allow the precise prediction of the effects of crowding.

A third theory, proposed by Wynne-Edwards and termed “epideictic,” argues that organisms have evolved a “code” in the form of social or epideictic behavior displays, such as winter-roosting aggregations or group vocalizing; such codes provide organisms with information on population size in a region so that they can, if necessary, exercise reproductive

restraint. However, Wynne-Edwards' theory, linking animal social behavior and population control, has been challenged, with some justification, by several studies.

1. The primary purpose of the passage is to
 - (A) argue against those scientists who maintain that animal populations tend to fluctuate
 - (B) compare and contrast the density-dependent and epideictic theories of population control
 - (C) provide example of some of the ways in which animals exercise reproductive restraint to control their own numbers
 - (D) suggests that theories of population control that concentrate on the social behavior of animals are more open to debate than are theories that do not
 - (E) summarize a number of scientific theories that attempt to explain why animal populations do not exceed certain limits
2. It can be inferred from the passage that proponents of the density-dependent theory of population control have not yet been able to
 - (A) use their theory to explain the population growth of organisms with short life cycles
 - (B) reproduce the results of the study of Christian and Davis
 - (C) explain adequately why the numbers of a population can increase as the population's rate of growth decreases
 - (D) make sufficiently accurate predictions about the effects of crowding
 - (E) demonstrate how predator populations are themselves regulated
3. Which of the following, if true, would best support the density-dependent theory of population control as it is described in the passage?
 - (A) As the number of foxes in Minnesota decrease, the growth rate of this population of foxes begins to increase.
 - (B) As the number of woodpeckers in Vermont decreases, the growth rate of this population of woodpeckers also begins to decrease.
 - (C) As the number of prairie dogs in Oklahoma increases, the growth rate of this population of prairie dogs also begins to increase.
 - (D) After the number of beavers in Tennessee decreases, the number of predators of these beavers begins to increase.
 - (E) After the number of eagles in Montana decreases, the food supply of this population of eagles also begins to decrease.
4. According to the Wynne-Edwards theory as it is described in the passage, epideictic behavior displays serve the function of
 - (A) determining roosting aggregations
 - (B) locating food
 - (C) attracting predators

- (D) regulating sexual activity
(E) triggering hormonal changes
5. The challenge posed to the Wynne-Edwards-theory by several studies is regarded by the author with
(A) complete indifference
(B) qualified acceptance
(C) skeptical amusement
(D) perplexed astonishment
(E) agitated dismay
6. Which of the following statements would provide the most of logical continuation of the final paragraph of the passage?
(A) Thus Wynne-Edwards' theory raises serious questions about the constancy of animal population in a region.
(B) Because Wynne-Edwards' theory is able to explain more kinds of animal behavior than is the density-dependent theory, epideictic explanations of population regulation are now widely accepted.
(C) The results of one study, for instance, have suggested that group vocalizing is more often used to defend territory than to provide information about population density.
(D) Some of these studies have, in fact, worked out a systematic and complex code of social behavior that can regulate population size.
(E) One study, for example, has demonstrated that birds are more likely to use winter-roosting aggregations than group vocalizing in order to provide information on population size.

Passage 57 (57/63)

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

A complicating factor has been the continuing lack of specialized one-volume reference works on Asian Americans, such as biographical dictionaries or desktop encyclopedias. Such works would enable students taking Asian American studies courses (and professors in related fields) to look up basic information on Asian American individuals, institutions, history, and culture without having to wade through mountains of primary source material. In addition, give such works, Asian American studies professors might feel more free to include more

challenging Asian American material in their introductory reading lists, since good reference works allow students to acquire on their own the background information necessary to interpret difficult or unfamiliar material.

1. The author of the passage is primarily concerned with doing which of the following?
 - (A) Recommending a methodology
 - (B) Describing a course of study
 - (C) Discussing a problem
 - (D) Evaluating a past course of action
 - (E) Responding to a criticism
2. The “dilemma” mentioned in line 2 can best be characterized as being caused by the necessity to make a choice when faced with a
 - (A) lack of acceptable alternatives
 - (B) lack of strict standards for evaluating alternatives
 - (C) preponderance of bad alternatives as compared to good
 - (D) multitude of different alternatives
 - (E) large number of alternatives that are nearly identical in content
3. The passage suggests that the factor mentioned in lines 14-17 complicates professors’ attempts to construct introductory reading lists for courses in Asian American studies in which of the following ways?
 - (A) By making it difficult for professors to identify primary source material and to obtain standard information on Asian American history and culture
 - (B) By preventing professors from identifying excellent anthologies and introductory texts in the field that are both recent and understandable to students
 - (C) By preventing professors from adequately evaluating the quality of the numerous texts currently being published in the field
 - (D) By making it more necessary for professors to select readings for their courses that are not too challenging for students unfamiliar with Asian American history and culture
 - (E) By making it more likely that the readings professors assign to students in their courses will be drawn solely from primary sources
4. The passage implies that which of the following was true of introductory courses in Asian American studies a few decades ago?
 - (A) The range of different textbooks that could be assigned for such courses was extremely limited.
 - (B) The texts assigned as readings in such courses were often not very challenging for students.
 - (C) Students often complained about the texts assigned to them in such courses.

- (D) Such courses were offered only at schools whose libraries were rich in primary sources.
 - (E) Such courses were the only means then available by which people in the United States could acquire knowledge of the field.
5. According to the passage, the existence of good one-volume reference works about Asian Americans could result in
- (A) increased agreement among professors of Asian American studies regarding the quality of the sources available in their field
 - (B) an increase in the number of students signing up for introductory courses in Asian American studies
 - (C) increased accuracy in writings that concern Asian American history and culture
 - (D) the use of introductory texts about Asian American history and culture in courses outside the field of Asian American studies
 - (E) the inclusion of a wider range of Asian American material in introductory reading lists in Asian American studies

Passage 58 (58/63)

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

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

1. According to the passage, before the final results of the study were known, which of the following seemed likely?
- (A) That workers with the highest productivity would also be the most accurate
 - (B) That workers who initially achieved high productivity ratings would continue to do so consistently
 - (C) That the highest performance ratings would be achieved by workers with the highest productivity

- (D) That the most productive workers would be those whose supervisors claimed to value productivity
- (E) That supervisors who claimed to value productivity would place equal value on customer satisfaction
2. It can be inferred that the author of the passage discusses “unmonitored workers” (line 10) primarily in order to
- (A) compare the ratings of these workers with the ratings of monitored workers
- (B) provide an example of a case in which monitoring might be effective
- (C) provide evidence of an inappropriate use of CPMCS
- (D) emphasize the effect that CPMCS may have on workers’ perceptions of their jobs
- (E) illustrate the effect that CPMCS may have on workers’ ratings
3. Which of the following, if true, would most clearly have supported the conclusion referred to in lines 19-21?
- (A) Ratings of productivity correlated highly with ratings of both accuracy and attendance.
- (B) Electronic monitoring greatly increased productivity.
- (C) Most supervisors based overall ratings of performance on measures of productivity alone.
- (D) Overall ratings of performance correlated more highly with measures of productivity than the researchers expected.
- (E) Overall ratings of performance correlated more highly with measures of accuracy than with measures of productivity.
4. According to the passage, a “hygiene factor” (lines 22-23) is an aspect of a worker’s performance that
- (A) has no effect on the rating of a worker’s performance
- (B) is so basic to performance that it is assumed to be adequate for all workers
- (C) is given less importance than it deserves in rating a worker’s performance
- (D) is not likely to affect a worker’s rating unless it is judged to be inadequate
- (E) is important primarily because of the effect it has on a worker’s rating
5. The primary purpose of the passage is to
- (A) explain the need for the introduction of an innovative strategy
- (B) discuss a study of the use of a particular method
- (C) recommend a course of action
- (D) resolve a difference of opinion
- (E) suggest an alternative approach

Schools expect textbooks to be a valuable source of information for students. My research suggests, however, that textbooks that address the place of Native Americans within the history of the United States distort history to suit a particular cultural value system. In some textbooks, for example, settlers are pictured as more humane, complex, skillful, and wise than Native American. In essence, textbooks stereotype and deprecate the numerous Native American cultures while reinforcing the attitude that the European conquest of the New World denotes the superiority of European cultures. Although textbooks evaluate Native American architecture, political systems, and homemaking, I contend that they do it from an ethnocentric, European perspective without recognizing that other perspectives are possible.

One argument against my contention asserts that, by nature, textbooks are culturally biased and that I am simply underestimating children's ability to see through these biases. Some researchers even claim that by the time students are in high school, they know they cannot take textbooks literally. Yet substantial evidence exists to the contrary. Two researchers, for example, have conducted studies that suggest that children's attitudes about particular culture are strongly influenced by the textbooks used in schools. Given this, an ongoing, careful review of how school textbooks depict Native American is certainly warranted.

1. Which of the following would most logically be the topic of the paragraph immediately following the passage?
 - (A) Specific ways to evaluate the biases of United States history textbooks
 - (B) The centrality of the teacher's role in United States history courses
 - (C) Nontraditional methods of teaching United States history
 - (D) The contributions of European immigrants to the development of the United States
 - (E) Ways in which parents influence children's political attitudes
2. The primary purpose of the passage is to
 - (A) describe in detail one research study regarding the impact of history textbooks on children's attitudes and beliefs about certain cultures
 - (B) describe revisions that should be made to United States history textbooks
 - (C) discuss the difficulty of presenting an accurate history of the United States
 - (D) argue that textbooks used in schools stereotype Native Americans and influence children's attitudes
 - (E) summarize ways in which some textbooks give distorted pictures of the political systems developed by various Native American groups
3. The author mentions two researchers' studies (lines 22-25) most likely in order to
 - (A) suggest that children's political attitudes are formed primarily through textbooks
 - (B) counter the claim that children are able to see through stereotypes in textbooks
 - (C) suggest that younger children tend to interpret the messages in textbooks more literally than do older children

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

Passage 60 (60/63)

Until recently, scientists did not know of a close vertebrate analogue to the extreme form of altruism observed in eusocial insects like ants and bees, whereby individuals cooperate, sometimes even sacrificing their own opportunities to survive and reproduce, for the good of others. However, such a vertebrate society may exist among underground colonies of the highly social rodent *Heterocephalus glaber*, the naked mole rat.

A naked mole rat colony, like a beehive, wasp's nest, or termite mound, is ruled by its queen, or reproducing female. Other adult female mole rats neither ovulate nor breed. The queen is the largest member of the colony, and she maintains her breeding status through a mixture of behavioral and, presumably, chemical control. Queens have been long-lived in

captivity, and when they die or are removed from a colony one sees violent fighting for breeding status among the larger remaining females, leading to a takeover by a new queen.

Eusocial insect societies have rigid caste systems, each insect's role being defined by its behavior, body shape, and physiology. In naked mole rat societies, on the other hand, differences in behavior are related primarily to reproductive status (reproduction being limited to the queen and a few males), body size, and perhaps age. Smaller non-breeding members, both male and female, seem to participate primarily in gathering food, transporting nest material, and tunneling. Larger nonbreeders are active in defending the colony and perhaps in removing dirt from the tunnels. Jarvis' work has suggested that differences in growth rates may influence the length of time that an individual performs a task, regardless of its age.

Cooperative breeding has evolved many times in vertebrates, but unlike naked mole rats, most cooperatively breeding vertebrates (except the wild dog, *Lycaon pictus*) are dominated by a pair of breeders rather than by a single breeding female. The division of labor within social groups is less pronounced among other vertebrates than among naked mole rats, colony size is much smaller, and mating by subordinate females may not be totally suppressed, whereas in naked mole rat colonies subordinate females are not sexually active, and many never breed.

1. Which of the following most accurately states the main idea of the passage?
 - (A) Naked mole rat colonies are the only known examples of cooperatively breeding vertebrate societies.
 - (B) Naked mole rat colonies exhibit social organization based on a rigid caste system.
 - (C) Behavior in naked mole rat colonies may well be a close vertebrate analogue to behavior in eusocial insect societies.
 - (D) The mating habits of naked mole rats differ from those of any other vertebrate species.
 - (E) The basis for the division of labor among naked mole rats is the same as that among eusocial insects.
2. The passage suggests that Jarvis' work has called into question which of the following explanatory variables for naked mole rat behavior?
 - (A) Size
 - (B) Age
 - (C) Reproductive status
 - (D) Rate of growth
 - (E) Previously exhibited behavior
3. It can be inferred from the passage that the performance of tasks in naked mole rat colonies differs from task performance in eusocial insect societies in which of the following ways?
 - (A) In naked mole rat colonies, all tasks are performed cooperatively.
 - (B) In naked mole rat colonies, the performance of tasks is less rigidly determined by body shape.

- (C) In naked mole rat colonies, breeding is limited to the largest animals.
- (D) In eusocial insect societies, reproduction is limited to a single female.
- (E) In eusocial insect societies, the distribution of tasks is based on body size.
4. According to the passage, which of the following is a supposition rather than a fact concerning the queen in a naked mole rat colony?
- (A) She is the largest member of the colony.
- (B) She exerts chemical control over the colony.
- (C) She mates with more than one male.
- (D) She attains her status through aggression.
- (E) She is the only breeding female.
5. The passage supports which of the following inferences about breeding among *Lycaon pictus*?
- (A) The largest female in the social group does not maintain reproductive status by means of behavioral control.
- (B) An individual's ability to breed is related primarily to its rate of growth.
- (C) Breeding is the only task performed by the breeding female.
- (D) Breeding in the social group is not cooperative.
- (E) Breeding is not dominated by a single pair of dogs.
6. According to the passage, naked mole rat colonies may differ from all other known vertebrate groups in which of the following ways?
- (A) Naked mole rats exhibit an extreme form of altruism.
- (B) Naked mole rats are cooperative breeders.
- (C) Among naked mole rats, many males are permitted to breed with a single dominant female.
- (D) Among naked mole rats, different tasks are performed at different times in an individual's life.
- (E) Among naked mole rats, fighting results in the selection of a breeding female.
7. One function of the third paragraph of the passage is to
- (A) state a conclusion about facts presented in an earlier paragraph
- (B) introduce information that is contradicted by information in the fourth paragraph
- (C) qualify the extent to which two previously mentioned groups might be similar
- (D) show the chain of reasoning that led to the conclusions of a specific study
- (E) demonstrate that of three explanatory factors offered, two may be of equal significance

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

Unfortunately for coral reefs, however, a variety of human activities are causing worldwide degradation of shallow marine habitats by adding nutrients to the water. Agriculture, slash-and-burn land clearing, sewage disposal and manufacturing that creates waste by-products all increase nutrient loads in these waters. Typical symptoms of reef decline are destabilized herbivore populations and an increasing abundance of algae and filter-feeding animals. Declines in reef communities are consistent with observations that nutrient input is increasing in direct proportion to growing human populations, thereby threatening reef communities sensitive to subtle changes in nutrient input to their waters.

1. The passage is primarily concerned with
 - (A) describing the effects of human activities on algae in coral reefs
 - (B) explaining how human activities are posing a threat to coral reef communities
 - (C) discussing the process by which coral reefs deteriorate in nutrient-poor waters
 - (D) explaining how coral reefs produce food for themselves
 - (E) describing the abundance of algae and filter-feeding animals in coral reef areas
2. The passage suggests which of the following about coral reef communities?
 - (A) Coral reef communities may actually be more likely to thrive in waters that are relatively low in nutrients.
 - (B) The nutrients on which coral reef communities thrive are only found in shallow waters.
 - (C) Human population growth has led to changing ocean temperatures, which threatens coral reef communities.
 - (D) The growth of coral reef communities tends to destabilize underwater herbivore populations.
 - (E) Coral reef communities are more complex and diverse than most ecosystems located on dry land.
3. The author refers to “filter-feeding animals” (line 20) in order to
 - (A) provide an example of a characteristic sign of reef deterioration
 - (B) explain how reef communities acquire sustenance for survival
 - (C) identify a factor that helps herbivore populations thrive
 - (D) indicate a cause of decreasing nutrient input in waters that reefs inhabit
 - (E) identify members of coral reef communities that rely on coral reefs for

nutrients

4. According to the passage, which of the following is a factor that is threatening the survival of coral reef communities?
- (A) The waters they inhabit contain few nutrient resources.
 - (B) A decline in nutrient input is disrupting their symbiotic relationship with zooxanthellae.
 - (C) The degraded waters of their marine habitats have reduced their ability to carry out photosynthesis.
 - (D) They are too biologically complex to survive in habitats with minimal nutrient input.
 - (E) Waste by-products result in an increase in nutrient input to reef communities.
5. It can be inferred from the passage that the author describes coral reef communities as paradoxical most likely for which of the following reasons?
- (A) They are thriving even though human activities have depleted the nutrients in their environment.
 - (B) They are able to survive in spite of an overabundance of algae inhabiting their waters.
 - (C) They are able to survive in an environment with limited food resources.
 - (D) Their metabolic wastes contribute to the degradation of the waters that they inhabit.
 - (E) They are declining even when the water surrounding them remains clear.

Passage 62 (62/63)

Two divergent definitions have dominated sociologists' discussions of the nature of **ethnicity**. The first emphasizes the primordial and unchanging character of ethnicity. In this view, people have an essential need for belonging that is satisfied by membership in groups based on shared ancestry and culture. A different conception of ethnicity de-emphasizes the cultural component and defines ethnic groups as interest groups. In this view, ethnicity serves as a way of mobilizing a certain population behind issues relating to its economic position. While both of these definitions are useful, neither fully captures the dynamic and changing aspects of ethnicity in the United States. Rather, ethnicity is more satisfactorily conceived of as a process in which preexisting communal bonds and common cultural attributes are adapted for instrumental purposes according to changing real-life situations.

One example of this process is the rise of participation by Native American people in the broader United States political system since the Civil Rights movement of the 1960's. Besides leading Native Americans to participate more actively in politics (the number of Native American legislative officeholders more than doubled), this movement also evoked increased interest in tribal history and traditional culture. Cultural and instrumental components of ethnicity are not mutually exclusive, but rather reinforce one another.

The Civil Rights movement also brought changes in the uses to which ethnicity was put by

Mexican American people. In the 1960's, Mexican Americans formed community-based political groups that emphasized ancestral heritage as a way of mobilizing constituents. Such emerging issues as immigration and voting rights gave Mexican American advocacy groups the means by which to promote ethnic solidarity. Like European ethnic groups in the nineteenth-century United States, late-twentieth-century Mexican American leaders combined ethnic with contemporary civic symbols. In 1968 Henry Cisneros, then mayor of San Antonio, Texas, cited Mexican leader Benito Juarez as a model for Mexican Americans in their fight for contemporary civil rights. And every year, Mexican Americans celebrate *Cinco de Mayo* as fervently as many Irish American people embrace St. Patrick's Day (both are major holidays in the countries of origin), with both holidays having been reinvented in the context of the United States and linked to ideals, symbols, and heroes of the United States.

1. Which of the following best states the main idea of the passage?
 - (A) In their definitions of the nature of ethnicity, sociologists have underestimated the power of the primordial human need to belong.
 - (B) Ethnicity is best defined as a dynamic process that combines cultural components with shared political and economic interests.
 - (C) In the United States in the twentieth century, ethnic groups have begun to organize in order to further their political and economic interests.
 - (D) Ethnicity in the United States has been significantly changed by the Civil Rights movement.
 - (E) The two definitions of ethnicity that have dominated sociologists discussions are incompatible and should be replaced by an entirely new approach.
2. Which of the following statements about the first two definitions of ethnicity discussed in the first paragraph is supported by the passage?
 - (A) One is supported primarily by sociologists, and the other is favored by members of ethnic groups.
 - (B) One emphasizes the political aspects of ethnicity, and the other focuses on the economic aspects.
 - (C) One is the result of analysis of United States populations, and the other is the result of analysis of European populations.
 - (D) One focuses more on the ancestral components of ethnicity than does the other.
 - (E) One focuses more on immigrant groups than does the other.
3. The author of the passage refers to Native American people in the second paragraph in order to provide an example of
 - (A) the ability of membership in groups based on shared ancestry and culture to satisfy an essential human need
 - (B) how ethnic feelings have both motivated and been strengthened by political activity
 - (C) how the Civil Rights movement can help promote solidarity among United

States ethnic groups

- (D) how participation in the political system has helped to improve a group's economic situation
 - (E) the benefits gained from renewed study of ethnic history and culture
4. The passage supports which of the following statements about the Mexican American community?
- (A) In the 1960's the Mexican American community began to incorporate the customs of another ethnic group in the United States into the observation of its own ethnic holidays.
 - (B) In the 1960's Mexican American community groups promoted ethnic solidarity primarily in order to effect economic change.
 - (C) In the 1960's leader of the Mexican American community concentrated their efforts on promoting a renaissance of ethnic history and culture.
 - (D) In the 1960's members of the Mexican American community were becoming increasingly concerned about the issue of voting rights.
 - (E) In the 1960's the Mexican American community had greater success in mobilizing constituents than did other ethnic groups in the United States.
5. Which of the following types of ethnic cultural expression is discussed in the passage?
- (A) The retelling of traditional narratives
 - (B) The wearing of traditional clothing
 - (C) The playing of traditional music
 - (D) The celebration of traditional holidays
 - (E) The preparation of traditional cuisine
6. Information in the passage supports which of the following statements about many European ethnic groups in the nineteenth-century United States?
- (A) They emphasized economic interests as a way of mobilizing constituents behind certain issues.
 - (B) They conceived of their own ethnicity as being primordial in nature.
 - (C) They created cultural traditions that fused United States symbols with those of their countries of origin.
 - (D) They de-emphasized the cultural components of their communities in favor of political interests.
 - (E) They organized formal community groups designed to promote a renaissance of ethnic history and culture.
7. The passage suggests that in 1968 Henry Cisneros most likely believed that
- (A) many Mexican American would respond positively to the example of Benito Juarez
 - (B) many Mexican American were insufficiently educated in Mexican history

- (C) the fight for civil rights in the United States had many strong parallels in both Mexican and Irish history
- (D) the quickest way of organizing community-based groups was to emulate the tactics of Benito Juarez
- (E) Mexican Americans should emulate the strategies of Native American political leaders

Passage 63 (63/63)

The fact that superior service can generate a competitive advantage for a company does not mean that every attempt at improving service will create such an advantage. Investments in service, like those in production and distribution, must be balanced against other types of investments on the basis of direct, tangible benefits such as cost reduction and increased revenues. If a company is already effectively *on a par* with its competitors because it provides service that avoids a damaging reputation and keeps customers from leaving at an unacceptable rate, then investment in higher service levels may be wasted, since service is a deciding factor for customers only in extreme situations.

This truth was not apparent to managers of one *regional bank*, which failed to improve its competitive position despite its investment in reducing the time a customer had to wait for a teller. The bank managers did not recognize the level of customer inertia in the consumer banking industry that arises from the inconvenience of switching banks. Nor did they analyze their service improvement to determine whether it would attract new customers by producing a new standard of service that would excite customers or by proving difficult for competitors to copy. The only merit of the improvement was that it could easily be described to customers.

1. The primary purpose of the passage is to
 - (A) contrast possible outcomes of a type of business investment
 - (B) suggest more careful evaluation of a type of business investment
 - (C) illustrate various ways in which a type of business investment could fail to enhance revenues
 - (D) trace the general problems of a company to a certain type of business investment
 - (E) criticize the way in which managers tend to analyze the costs and benefits of business investments
2. According to the passage, investments in service are comparable to investments in production and distribution in terms of the
 - (A) tangibility of the benefits that they tend to confer
 - (B) increased revenues that they ultimately produce
 - (C) basis on which they need to be weighed
 - (D) insufficient analysis that managers devote to them
 - (E) degree of competitive advantage that they are likely to provide

3. The passage suggests which of the following about service provided by the regional bank prior to its investment in enhancing that service?
- (A) It enabled the bank to retain customers at an acceptable rate.
 - (B) It threatened to weaken the bank's competitive position with respect to other regional banks.
 - (C) It had already been improved after having caused damage to the bank's reputation in the past.
 - (D) It was slightly superior to that of the bank's regional competitors.
 - (E) It needed to be improved to attain parity with the service provided by competing banks.
4. The passage suggests that bank managers failed to consider whether or not the service improvement mentioned in line 19
- (A) was too complicated to be easily described to prospective customers
 - (B) made a measurable change in the experiences of customers in the bank's offices
 - (C) could be sustained if the number of customers increased significantly
 - (D) was an innovation that competing banks could have imitated
 - (E) was adequate to bring the bank's general level of service to a level that was comparable with that of its competitors
5. The discussion of the regional bank (line 13-24) serves which of the following functions within the passage as a whole?
- (A) It describes an exceptional case in which investment in service actually failed to produce a competitive advantage.
 - (B) It illustrates the pitfalls of choosing to invest in service at a time when investment is needed more urgently in another area.
 - (C) It demonstrates the kind of analysis that managers apply when they choose one kind of service investment over another.
 - (D) It supports the argument that investments in certain aspects of service are more advantageous than investments in other aspects of service.
 - (E) It provides an example of the point about investment in service made in the first paragraph.
6. The author uses the word "only" in line 23 most likely in order to
- (A) highlight the oddity of the service improvement
 - (B) emphasize the relatively low value of the investment in service improvement
 - (C) distinguish the primary attribute of the service improvement from secondary attributes
 - (D) single out a certain merit of the service improvement from other merits
 - (E) point out the limited duration of the actual service improvement

二、GMAT 补充 22Passages

Passage 64 (1/22)

The antigen-antibody immunological reaction used to be regarded as typical of immunological responses. Antibodies are proteins synthesized by specialized cells called plasma cells, which are formed by lymphocytes (cells from the lymph system) when an antigen, a substance foreign to the organism's body, comes in contact with lymphocytes. Two important manifestations of antigen-antibody immunity are lysis, the rapid physical rupture of antigenic cells and the liberation of their contents into the surrounding medium, and phagocytosis, a process in which antigenic particles are engulfed by and very often digested by macrophages and polymorphs. The process of lysis is executed by a complex and unstable blood constituent known as complement, which will not work unless it is activated by a specific antibody; the process of phagocytosis is greatly facilitated when the particles to be engulfed are coated by a specific antibody directed against them.

The reluctance to—abandon this hypothesis, however well it explains specific processes, impeded new research, and for many years antigens and antibodies dominated the thoughts of immunologists so completely that those immunologists overlooked certain difficulties. Perhaps the primary difficulty with the antigen-antibody explanation is the informational problem of how an antigen is recognized and how a structure exactly complementary to it is then synthesized. When molecular biologists discovered, moreover, that such information cannot flow from protein to protein, but only from nucleic acid to protein, the theory that an antigen itself provided the mold that directed the synthesis of an antibody had to be seriously qualified. The attempts at qualification and the information provided by research in molecular biology led scientists to realize that a second immunological reaction is mediated through the lymphocytes that are hostile to and bring about the destruction of the antigen. This type of immunological response is called cell-mediated immunity.

Recent research in cell-mediated immunity has been concerned not only with the development of new and better vaccines, but also with the problem of transplanting tissues and organs from one organism to another, for although circulating antibodies play a part in the rejection of transplanted tissues, the primary role is played by cell-mediated reactions. During cell-mediated responses, receptor sites on specific lymphocytes and surface antigens on the foreign tissue cells form a complex that binds the lymphocytes to the tissue. Such lymphocytes do not give rise to antibody-producing plasma cells but themselves bring about the death of the foreign-tissue cells, probably by secreting a variety of substances, some of which are toxic to the tissue cells and some of which stimulate increased phagocytic activity by white blood cells of the macrophage type. Cell-mediated immunity also accounts for the destruction of intracellular parasites.

1. The author is primarily concerned with
 - (A) proving that immunological reactions do not involve antibodies
 - (B) establishing that most immunological reactions involve antigens
 - (C) criticizing scientists who will not change their theories regarding immunology

- (D) analyzing the importance of cells in fighting disease
(E) explaining two different kinds of immunological reactions
2. The author argues that the antigen-antibody explanation of immunity “had to seriously qualified” (line 37) because
- (A) antibodies were found to activate unstable components in the blood
(B) antigens are not exactly complementary to antibodies
(C) lymphocytes have the ability to bind to the surface of antigens
(D) antibodies are synthesized from protein whereas antigens are made from nucleic acid
(E) antigens have no apparent mechanism to direct the formation of an antibody
3. The author most probably believes that the antigen-antibody theory of immunological reaction.
- (A) is wrong
(B) was accepted without evidence
(C) is unverifiable
(D) is a partial explanation
(E) has been a divisive issue among scientists
4. The author mentions all of the following as being involved in antigen-antibody immunological reactions EXCEPT the
- (A) synthesis of a protein
(B) activation of complement in the bloodstream
(C) destruction of antibodies
(D) entrapment of antigens by macrophages
(E) formation of a substance with a structure complementary to that of an antigen
5. The passage contains information that would answer which of the following questions about cell-mediated immunological reactions?
- I. Do lymphocytes form antibodies during cell-mediated immunological reactions?
II. Why are lymphocytes more hostile to antigens during cell-mediated immunological reactions than are other cell groups?
III. Are cell-mediated reactions more pronounced after transplants than they are after parasites have invaded the organism?
- (A) I only
(B) I and II only
(C) I and III only
(D) II and III only
(E) I, II, and III

6. The passage suggests that scientists might not have developed the theory of cell-mediated immunological reactions if
- (A) proteins existed in specific group types
 - (B) proteins could have been shown to direct the synthesis of other proteins
 - (C) antigens were always destroyed by proteins
 - (D) antibodies were composed only of protein
 - (E) antibodies were the body's primary means of resisting disease
7. According to the passage, antibody-antigen and cell-mediated immunological reactions both involve which of the following processes?
- I. The destruction of antigens
 - II. The creation of antibodies
 - III. The destruction of intracellular parasites
- (A) I only
 - (B) II only
 - (C) III only
 - (D) I and II only
 - (E) II and III only
8. The author supports the theory of cell-mediated reactions primarily by
- (A) pointing out a contradiction in the assumption leading to the antigen-antibody theory
 - (B) explaining how cell mediation accounts for phenomena that the antigen-antibody theory cannot account for
 - (C) revealing new data that scientists arguing for the antigen-antibody theory have continued to ignore
 - (D) showing that the antigen-antibody theory fails to account for the breakup of antigens
 - (E) demonstrating that cell mediation explains lysis and phagocytosis more fully than the antigen-antibody theory does

Passage 65 (2/22)

The founders of the Republic viewed their revolution primarily in political rather than economic or social terms. And they talked about education as essential to the public good—a goal that took precedence over knowledge as occupational training or as a means to self-fulfillment or self-improvement. **Over and over again** the Revolutionary generation, both liberal and conservative in outlook, asserted its conviction that the welfare of the Republic rested upon an educated citizenry and that schools, especially free public schools, would be the best means of educating the citizenry in civic values and the obligations required of everyone in a democratic republican society. All agreed that the principal ingredients of a **civic education** were literacy and the inculcation of patriotic and moral virtues, some others adding the study of

history and the study of principles of the republican government itself.

The founders, as was the case of almost all their successors, were long on exhortation and rhetoric regarding the value of civic education, but they left it to the textbook writers to distill the essence of those values for school children. Texts in American history and government appeared as early as the 1790s. The textbook writers turned out to be very largely of conservative persuasion, more likely Federalist in outlook than Jeffersonian, and almost universally agreed that political virtue must rest upon moral and religious precepts. Since most textbook writers were New Englander, this meant that the texts were infused with Protestant and, above all, Puritan outlooks.

In the first half of the Republic, civic education in the schools emphasized the inculcation of civic values and made little attempt to develop participatory political skills. That was a task left to incipient political parties, town meetings, churches and the coffee or ale houses where men gathered for conversation. Additionally as a reading of certain Federalist papers of the period would demonstrate, the press probably did more to disseminate realistic as well as partisan knowledge of government than the schools. The goal of education, however, was to achieve a higher form of *unum* for the new Republic. In the middle half of the nineteenth century, the political values taught in the public and private schools did not change substantially from those celebrated in the first fifty years of the Republic. In the textbooks of the day their rosy hues if anything became golden. To the resplendent values of liberty, equality, and a benevolent Christian morality were now added the middle-class virtues-especially of New England-of hard work, honesty and integrity, the rewards of individual effort, and obedience to parents and legitimate authority. But of all the political values taught in school, patriotism was preeminent; and whenever teachers explained to school children why they should love their country above all else, the idea of liberty assumed pride of place.

1. The passage deals primarily with the
 - (A) content of early textbooks on American history and government
 - (B) role of education in late eighteenth-and early to mid-nineteenth-century America
 - (C) influence of New England Puritanism on early American values
 - (D) origin and development of the Protestant work ethic in modern America
 - (E) establishment of universal free public education in America
2. According to the passage, the founders of the Republic regarded education primarily as
 - (A) a religious obligation
 - (B) a private matter
 - (C) an unnecessary luxury
 - (D) a matter of individual choice
 - (E) a political necessity
3. The author states that textbooks written in the middle part of the nineteenth century

- (A) departed radically in tone and style from earlier textbooks
 - (B) mentioned for the first time the value of liberty
 - (C) treated traditional civic virtues with even greater reverence
 - (D) were commissioned by government agencies
 - (E) contained no reference to conservative ideas
4. Which of the following would LEAST likely have been the subject of an early American textbook?
- (A) basic rules of English grammar
 - (B) the American Revolution
 - (C) patriotism and other civic virtues
 - (D) vocational education
 - (E) principles of American government
5. The author's attitude toward the educational system she discusses can best be described as
- (A) cynical and unpatriotic
 - (B) realistic and analytical
 - (C) pragmatic and frustrated
 - (D) disenchanted and bitter
 - (E) idealistic and naive
6. The passage provides information that would be helpful in answering which of the following questions?
- (A) Why were a disproportionate share of early American textbooks written by New England authors?
 - (B) Was the Federalist party primarily a liberal or conservative force in early American politics?
 - (C) How many years of education did the founders believe were sufficient to instruct young citizens in civic virtue?
 - (D) What were the names of some of the Puritan authors who wrote early American textbooks?
 - (E) Did most citizens of the early Republic agree with the founders that public education was essential to the welfare of the Republic?
7. The author implies that an early American Puritan would likely insist that
- (A) moral and religious values are the foundation of civic virtue
 - (B) textbooks should instruct students in political issues of vital concern to the community
 - (C) textbooks should give greater emphasis to the value of individual liberty than to the duties of patriotism
 - (D) private schools with a particular religious focus are preferable to public

- schools with no religious instruction
- (E) government and religion are separate institutions and the church should not interfere in political affairs
8. According to the passage citizens of the early Republic learned about practical political matters in all of the following ways EXCEPT
- (A) reading newspapers
- (B) attending town meetings
- (C) conversing about political matters
- (D) reading textbooks
- (E) attending church

Passage 66 (3/22)

The health-care economy is replete with unusual and even unique economic relationships. One of the least understood involves the peculiar roles of producer or “provider” and purchaser or “consumer” in the typical doctor-patient relationship. In most sectors of the economy, it is the seller who attempts to attract a potential buyer with various inducements of price, quality, and utility, and it is the buyer who makes the decision. Where circumstances permit the buyer no choice because there is **effectively** only one seller and the product is relatively essential, government usually asserts monopoly and places the industry under price and other regulations. Neither of these conditions prevails in most of the health-care industry.

In the health-care industry, the doctor-patient relationship is the **mirror image** of the ordinary relationship between producer and consumer. Once an individual has chosen to see a physician—and even then there may be no real choice—it is the physician who usually makes all significant purchasing decisions: whether the patient should return “next Wednesday,” whether X-rays are needed, whether drugs should be prescribed, etc. It is a rare and sophisticated patient who will challenge such professional decisions or raise **in advance** questions about price, especially when the ailment is regarded as serious.

This is particularly significant **in relation to** hospital care. The physician must certify the need for hospitalization, determine what procedures will be performed, and announce when the patient may be discharged. The patient may be consulted about some of these decisions, but **in the main** it is the doctor’s judgments that are final. Little wonder then that **in the eyes of** the hospital it is the physician who is the real “consumer.” As a consequence, the medical staff represents the “power center” in hospital policy and decision-making, not the administration.

Although usually there are in this situation four identifiable participants—the physician, the hospital, the patient, and the payer (generally an insurance carrier or government)—the physician makes the essential decisions for all of them. The hospital becomes an extension of the physician; the payer generally meets most of the **bona fide** bills generated by the physician/hospital; and **for the most part** the patient plays a passive role. In routine or minor illnesses, or just plain worries, the patient’s options are, of course, much greater **with respect to** use and price. In illnesses that are of some significance, however, such choices tend to **evaporate**, and it is for these illnesses that the bulk of the health-care dollar is spent. We

estimate that about 75-80 percent of health-care expenditures are determined by physicians, not patients. For this reason, economy measures directed at patients or the general public are relatively ineffective.

1. The author's primary purpose is to
 - (A) speculate about the relationship between a patient's ability to pay and the treatment received
 - (B) criticize doctors for exercising too much control over patients
 - (C) analyze some important economic factors in health care
 - (D) urge hospitals to reclaim their decision-making authority
 - (E) inform potential patients of their health-care rights
2. It can be inferred that doctors are able to determine hospital policies because
 - (A) it is doctors who generate income for the hospital
 - (B) most of a patient's bills are paid by his health insurance
 - (C) hospital administrators lack the expertise to question medical decisions
 - (D) a doctor is ultimately responsible for a patient's health
 - (E) some patients might refuse to accept their physician's advice
3. According to the author, when a doctor tells a patient to "return next Wednesday," the doctor is in effect
 - (A) taking advantage of the patient's concern for his health
 - (B) instructing the patient to buy more medical services
 - (C) warning the patient that a hospital stay might be necessary
 - (D) advising the patient to seek a second opinion
 - (E) admitting that the initial visit was ineffective
4. The author is most probably leading up to
 - (A) a proposal to control medical costs
 - (B) a discussion of a new medical treatment
 - (C) an analysis of the causes of inflation in the United States
 - (D) a study of lawsuits against doctors for malpractice
 - (E) a comparison of hospitals and factories
5. The tone of the passage can best be described as
 - (A) whimsical
 - (B) cautious
 - (C) analytical
 - (D) inquisitive
 - (E) defiant
6. With which of the following statements would the author be likely to agree?

- I. Most patients are reluctant to object to the course of treatment prescribed by a doctor or to question the cost of the services.
 - II. The more serious the illness of a patient, the less likely it is that the patient will object to the course of treatment prescribed or to question the cost of services.
 - III. The payer, whether insurance carrier or the government, is less likely to acquiesce to demands for payment when the illness of the patient is regarded as serious.
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
7. The author's primary concern is to
- (A) define a term
 - (B) clarify a misunderstanding
 - (C) refute a theory
 - (D) discuss a problem
 - (E) announce a new discovery
8. The most important feature of a "consumer" as that term is used in [line 33](#) of the passage is that the "consumer" is the party that
- (A) pays for goods or services
 - (B) delivers goods or services
 - (C) orders goods or services
 - (D) reimburses a third party for goods or services
 - (E) supplies goods and services to a third party

Passage 67 (4/22)

About twice every century, one of the massive stars in our galaxy blows itself apart in a supernova explosion that sends massive quantities of radiation and matter into space and generates shock waves that sweep through the **arms** of the galaxy. The shock waves heat the interstellar gas, evaporate small clouds, and compress larger ones to the point at which they collapse under their own gravity to form new stars. The general picture that has been developed for the supernova explosion and its aftermath goes something like this. Throughout its evolution, a star is much like a leaky balloon. It keeps its equilibrium figure through a balance of internal pressure against the tendency to collapse under its own weight. The pressure is generated by nuclear reactions in the core of the star which must continually supply energy to balance the energy that **leaks out** in the form of radiation. Eventually the nuclear fuel is exhausted, and the pressure drops in the core. With nothing to hold it up, the matter in the

center of the star collapses inward, creating higher and higher densities and temperatures, until the nuclei and electrons are fused into a super-dense lump of matter known as a neutron star.

As the overlying layers **rain down** on the surface of the neutron star, the temperature rises, until with a blinding flash of radiation, the collapse is reversed. A **thermonuclear** shock wave runs through the now expanding stellar envelope, fusing lighter elements into heavier ones and producing a brilliant visual outburst that can be as intense as the light of 10 billion suns. The shell of matter thrown off by the explosion plows through the surrounding gas, producing an expanding bubble of hot gas, with gas temperatures in the millions of degrees. This gas will emit most of its energy at X-ray wavelengths, so it is not surprising that X-ray observatories have provided some of the most useful insights into the nature of the supernova phenomenon. More than twenty supernova remnants have now been detected in X-ray studies.

Recent discoveries of meteorites with anomalous concentrations of certain isotopes indicate that a supernova might have precipitated the birth of our solar system more than four and a half billion years ago. Although the cloud that collapsed to form the Sun and the planets was composed primarily of hydrogen and helium, it also contained carbon, nitrogen, and oxygen, elements essential for life as we know it. Elements heavier than helium are manufactured deep in the interior of stars and would, **for the most part**, remain there if it were not for the cataclysmic supernova explosions that blow giant stars apart. Additionally, supernovas produce clouds of high-energy particles called **cosmic rays**. These high-energy particles continually bombard the Earth and are responsible for many of the genetic mutations that are the driving force of the evolution of species.

1. Which of the following titles best describes the content of the passage?
 - (A) The Origins and Effects of Supernovas
 - (B) The Life and Death of Stars
 - (C) The Origins and Evolution of Life on Earth
 - (D) The Aftermath of a Supernova
 - (E) Violent Change in the Universe
2. According to the passage, we can expect a supernova to occur in our galaxy
 - (A) about twice each year
 - (B) hundreds of times each century
 - (C) about once every fifty years
 - (D) about once every other century
 - (E) about once every four to five billion years
3. According to the passage all of the following are true of supernovas EXCEPT that they
 - (A) are extremely bright
 - (B) are an explosion of some sort
 - (C) emit large quantities of X-rays
 - (D) result in the destruction of a neutron star

- (E) are caused by the collision of large galaxies
4. The author employs which of the following to develop the first paragraph?
- (A) Analogy
 - (B) Deduction
 - (C) Generalization
 - (D) Example
 - (E) Refutation
5. It can be inferred from the passage that the meteorites mentioned by the author at line 39
- (A) contain dangerous concentrations of radioactive materials
 - (B) give off large quantities of X-rays
 - (C) include material not created in the normal development of our solar system
 - (D) are larger than the meteors normally found in a solar system like ours
 - (E) contain pieces of a supernova that occurred several billion years ago
6. The author implies that
- (A) it is sometimes easier to detect supernovas by observation of the X-ray spectrum than by observation of visible wavelengths of light
 - (B) life on Earth is endangered by its constant exposure to radiation forces that are released by a supernova
 - (C) recently discovered meteorites indicate that the Earth and other planets of our solar system survived the explosion of a supernova several billion years ago
 - (D) lighter elements are formed from heavier elements during a supernova as the heavier elements are torn apart
 - (E) the core of a neutron star is composed largely of heavier elements such as carbon, nitrogen, and oxygen
7. According to the passage what is the first event in the sequence that leads to the occurrence of a supernova?
- (A) An ordinary star begins to emit tremendous quantities of X-rays.
 - (B) A neutron star is enveloped by a superheated cloud of gas.
 - (C) An imbalance between light and heavy elements causes an ordinary star to collapse.
 - (D) A cloud of interstellar gas rich in carbon, nitrogen, and oxygen, collapses to form a neutron star.
 - (E) An ordinary star exhausts its supply of nuclear fuel and begins to collapse.
8. According to the passage a neutron star is
- (A) a gaseous cloud containing heavy elements
 - (B) an intermediate stage between an ordinary star and a supernova

- (C) the residue that is left by a supernova
 - (D) the core of an ordinary star that houses the thermonuclear reactions
 - (E) one of billions of meteors that are scattered across the galaxy by a supernova
9. The author is primarily concerned with
- (A) speculating about the origins of our solar system
 - (B) presenting evidence proving the existence of supernovas
 - (C) discussing the nuclear reaction that occurs in the core of a star
 - (D) describing the sequence of scientific events
 - (E) disproving a theory about the causes of supernovas

Passage 68 (5/22)

The uniqueness of the Japanese character is the result of two seemingly contradictory forces: the strength of traditions and selective receptivity to foreign achievements and inventions. As early as the 1860s, there were counter movements to the traditional orientation. Yukichi Fukuzawa, the most eloquent spokesman of Japan's "Enlightenment," claimed: "The Confucian civilization of the East seems to me to lack two things possessed by Western civilization: science in the material sphere and a sense of independence in the spiritual sphere." Fukuzawa's great influence is found in the free and individualistic philosophy of the *Education Code* of 1872, but he was not able to prevent the government from turning back to the canons of Confucian thought in the *Imperial Rescript* of 1890. Another interlude of relative liberalism followed World War I, when the democratic idealism of President Woodrow Wilson had an important impact on Japanese intellectuals and, especially students: but more important was the Leninist ideology of the 1917 Bolshevik Revolution. Again in the early 1930s, nationalism and militarism became dominant, largely as a result of failing economic conditions.

Following the end of World War II, substantial changes were undertaken in Japan to liberate the individual from authoritarian restraints. The new democratic value system was accepted by many teachers, students, intellectuals, and old liberals, but it was not immediately embraced by the society as a whole. Japanese traditions were dominated by group values, and notions of personal freedom and individual rights were unfamiliar.

Today, democratic processes are clearly evident in the widespread participation of the Japanese people in social and political life: yet, there is no universally accepted and stable value system. Values are constantly modified by strong infusions of Western ideas, both democratic and Marxist. School textbooks expound democratic principles, emphasizing equality over hierarchy and rationalism over tradition; but in practice these values are often misinterpreted and distorted, particularly by the youth who translate the individualistic and humanistic goals of democracy into egoistic and materialistic ones.

Most Japanese people have consciously rejected Confucianism, but vestiges of the old order remain. An important feature of relationships in many institutions such as political parties, large corporations, and university faculties is the *oyabun-kobun* or parent-child relation. A party leader, supervisor, or professor, in return for loyalty, protects those subordinate to him and takes general responsibility for their interests throughout their entire lives, an obligation that

sometimes even extends to arranging marriages. The corresponding loyalty of the individual to his patron reinforces his allegiance to the group to which they both belong. A willingness to cooperate with other members of the group and to support without qualification the interests of the group in all its external relations is still a widely respected virtue. The *oyabun-kobun* creates ladders of mobility which an individual can ascend, rising as far as abilities permit, so long as he maintains successful personal ties with a superior in the vertical channel, the latter requirement usually taking precedence over a need for exceptional competence. As a consequence, there is little horizontal relationship between people even within the same profession.

1. The author is mainly concerned with
 - (A) explaining the influence of Confucianism on modern Japan
 - (B) analyzing the reasons for Japan's postwar economic success
 - (C) discussing some important determinants of Japanese values
 - (D) describing managerial practices in Japanese industry
 - (E) contrasting modern with prewar Japanese society
2. Which of the following is most like the relationship of the *oyabun-kobun* described in the passage?
 - (A) A political candidate and the voting public
 - (B) A gifted scientist and his protégé
 - (C) Two brothers who are partners in a business
 - (D) A judge presiding at the trial of a criminal defendant
 - (E) A leader of a musical ensemble who is also a musician in the group
3. According to the passage, Japanese attitudes are influenced by which of the following?
 - I. Democratic ideals
 - II. Elements of modern Western culture
 - III. Remnants of an earlier social structure
 - (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
4. The author implies that
 - (A) decisions about promotions are often based on personal feelings
 - (B) students and intellectuals do not understand the basic tenets of Western democracy
 - (C) Western values have completely overwhelmed traditional Japanese attitudes
 - (D) respect for authority was introduced into Japan following World War II
 - (E) most Japanese workers are members of a single political party

5. In developing the passage, the author does which of the following?
- (A) Introduce an analogy
 - (B) Define a term
 - (C) Present statistics
 - (D) Cite an authority
 - (E) Issue a challenge
6. It can be inferred that the Imperial Rescript of 1890
- (A) was a protest by liberals against the lack of individual liberty in Japan
 - (B) marked a return in government policies to conservative values
 - (C) implemented the ideals set forth in the *Education Code* of 1872
 - (D) was influenced by the Leninist ideology of the Bolshevik Revolution
 - (E) prohibited the teaching of Western ideas in Japanese schools
7. Which of the following is the most accurate description of the organization of the passage?
- (A) A sequence of inferences in which the conclusion of each successive step becomes a premise in the next argument
 - (B) A list of generalizations, most of which are supported by only a single example
 - (C) A chronological analysis of historical events leading up to a description of the current situation
 - (D) A statement of a commonly accepted theory that is then subjected to a critical analysis
 - (E) An introduction of a key term that is then defined by giving examples
8. Which of the following best states the central thesis of the passage?
- (A) The value system of Japan is based upon traditional and conservative values that have, in modern times, been modified by Western and other liberal values.
 - (B) Students and radicals in Japan have Leninist ideology to distort the meaning of democratic, Western values.
 - (C) The notions of personal freedom and individual liberty did not find immediate acceptance in Japan because of the predominance of traditional group values.
 - (D) Modern Japanese society is characterized by hierarchical relationships in which a personal tie to a superior is often more important than merit.
 - (E) The influence on Japanese values of the American ideals of personal freedom and individual rights is less important than the influence of Leninist ideology.
9. The tone of the passage can best be described as

- (A) neutral and objective
- (B) disparaging and flippant
- (C) critical and demanding
- (D) enthusiastic and supportive
- (E) skeptical and questioning

Passage 69 (6/22)

Public general hospitals originated in the almshouse infirmaries established as early as colonial times by local governments to care for the poor. Later, in the late eighteenth and early nineteenth centuries, the infirmary separated from the almshouse and became an independent institution supported by local tax money. At the same time, private charity hospitals began to develop. Both private and public hospitals provided mainly food and shelter for the impoverished sick, since there was little that medicine could actually do to cure illness, and the middle class was treated at home by private physicians.

Late in the nineteenth century, the private charity hospital began trying to attract middle-class patients. Although the depression of 1890 stimulated the growth of charitable institutions and an expanding urban population became dependent on assistance, there was a decline in private contributions to these organizations which forced them to look to local government for financial support. Since private institutions had also lost benefactors; they began to charge patients. In order to attract middle-class patients, private institutions provided services and amenities that distinguished between paying and non-paying patients and made the hospital a desirable place for private physicians to treat their own patients. As paying patients became more necessary to the survival of the private hospital, the public hospitals slowly became the only place for the poor to get treatment. By the end of the nineteenth century, cities were reimbursing private hospitals for their care of indigent patients and the public hospitals remained dependent on the tax dollars.

The advent of private hospital health insurance, which provided middle-class patients with the purchasing power to pay for private hospital services, guaranteed the private hospital a regular source of income. Private hospitals restricted themselves to revenue-generating patients, leaving the public hospitals to care for the poor. Although public hospitals continued to provide services for patients with communicable diseases and outpatient and emergency services, the Blue Cross plans developed around the needs of the private hospitals and the inpatients they served. Thus, reimbursement for ambulatory care has been minimal under most Blue Cross plans, and provision of outpatient care has not been a major function of the private hospital, in part because private patients can afford to pay for the services of private physicians. Additionally, since World War II, there has been a tremendous influx of federal money into private medical schools and the hospitals associated with them. Further, large private medical centers with expensive research equipment and programs have attracted the best administrators, physicians, and researchers. As a result of the greater resources available to the private medical centers, public hospitals have increasing problems attracting highly qualified research and medical personnel. With the mainstream of health care firmly established in the private medical sector, the public hospital has become a "dumping ground."

1. According to the passage, the very first private hospitals
 - (A) developed from almshouse infirmaries
 - (B) provided better care than public infirmaries
 - (C) were established mainly to service the poor
 - (D) were supported by government revenues
 - (E) catered primarily to the middle-class patients
2. It can be inferred that the author believes the differences that currently exist between public and private hospitals are primarily the result of
 - (A) political considerations
 - (B) economic factors
 - (C) ethical concerns
 - (D) legislative requirements
 - (E) technological developments
3. It can be inferred that the growth of private health insurance
 - (A) relieved local governments of the need to fund public hospitals
 - (B) guaranteed that the poor would have access to medical care
 - (C) forced middle-class patients to use public hospitals
 - (D) prompted the closing of many charitable institutions
 - (E) reinforced the distinction between public and private hospitals
4. Which of the following would be the most logical topic for the author to introduce in the next paragraph?
 - (A) A plan to improve the quality of public hospitals
 - (B) An analysis of the profit structure of health insurance companies
 - (C) A proposal to raise taxes on the middle class
 - (D) A discussion of recent developments in medical technology
 - (E) A list of the subjects studied by students in medical school
5. The author's primary concern is to
 - (A) describe the financial structure of the healthcare industry
 - (B) demonstrate the importance of government support for health-care institutions
 - (C) criticize wealthy institutions for refusing to provide services to the poor
 - (D) identify the historical causes of the division between private and public hospitals
 - (E) praise public hospitals for their willingness to provide health care for the poor
6. The author cites all of the following as factors contributing to the decline of public hospitals EXCEPT.
 - (A) Government money was used to subsidize private medical schools and hospitals to the detriment of public hospitals.

- (B) Public hospitals are not able to compete with private institutions for top flight managers and doctors.
 - (C) Large private medical centers have better research facilities and more extensive research programs than public hospitals.
 - (D) Public hospitals accepted the responsibility for treating patients with certain diseases.
 - (E) Blue Cross insurance coverage does not reimburse subscribers for medical expenses incurred in a public hospital.
7. The author's attitude toward public hospitals can best be described as
- (A) contemptuous and prejudiced
 - (B) apprehensive and distrustful
 - (C) concerned and understanding
 - (D) enthusiastic and supportive
 - (E) unsympathetic and annoyed
8. The author implies that any outpatient care provided by a hospital is
- (A) paid for by private insurance
 - (B) provided **in lieu of** treatment by a private physician
 - (C) supplied primarily by private hospitals
 - (D) a source of revenue for public hospitals
 - (E) no longer provided by hospitals, public or private
9. Which of the following titles best describes the content of the passage?
- (A) Public versus Private Hospitals: A Competitive Mismatch
 - (B) Historical and Economic Factors in the Decline of the Public Hospital
 - (C) A Comparison of the Quality of Care Provided in Public and Private Hospitals
 - (D) A Proposal for Revamping the Health Delivery Services Sector of the Economy
 - (E) Economic Factors That Contribute to the Inability of the Poor to Get Adequate Care

Passage 70 (7/22)

The *National Security Act* of 1947 created a national military **establishment** headed by a single Secretary of Defense. The legislation had been a year-and-a-half in the making—beginning when President Truman first recommended that the armed services be reorganized into a single department. During that period the President's concept of a unified armed service was torn apart and put back together several times, the final measure to **emerge from** Congress being a compromise. Most of the opposition to the bill came from the Navy and its numerous civilian spokesmen, including Secretary of the Navy James Forrestal. In support of unification (and a separate air force that was part of the unification package) were the Army air forces, the Army, and, most importantly, the President of the United States.

Passage of the bill did not bring an end to the bitter interservice disputes. Rather than unify, the act served only to federate the military services. It neither halted the rapid demobilization of the armed forces that followed World War II nor brought to the new national military establishment the loyalties of officers steeped in the traditions of the separate services. At a time when the balance of power in Europe and Asia was rapidly shifting, the services lacked any precise statement of United States foreign policy from the National Security Council on which to base future programs. The services bickered unceasingly over their respective roles and missions, already complicated by the Soviet nuclear capability that for the first time made the United States subject to devastating attack. Not even the appointment of Forrestal as First Secretary of Defense allayed the suspicions of naval officers and their supporters that the role of the U.S. Navy was threatened with permanent eclipse. Before the war of words died down, Forrestal himself was driven to resignation and then suicide.

By 1948, the United States military establishment was forced to make do with a budget approximately 10 percent of what it had been at its wartime peak. Meanwhile, the cost of weapons procurement was rising geometrically as the nation came to put more and more reliance on the atomic bomb and its delivery systems. These two factors inevitably made adversaries of the Navy and the Air Force as the battle between advocates of the B-36 and the supercarrier so amply demonstrates. Given severe fiscal restraints on the one hand, and on the other the nation's increasing reliance on strategic nuclear deterrence, the conflict between these two services over roles and missions was essentially a contest over slices of an ever-diminishing pie.

Yet if in the end neither service was the obvious victor, the principle of civilian dominance over the military clearly was. If there had ever been any danger that the United States military establishment might exploit, to the detriment of civilian control, the goodwill it enjoyed as a result of its victories in World War II, that danger disappeared in the interservice animosities engendered by the battle over unification.

1. The author makes all of the following points about the National Security Act of 1947 EXCEPT
 - (A) It provided for a single Secretary of Defense.
 - (B) The legislation that came out of Congress was a compromise measure.
 - (C) The legislation was initially proposed by President Truman.
 - (D) The Navy opposed the bill that eventually became law.
 - (E) The bill was passed to help the nation's demobilization effort.
2. Which of the following best describes the tone of the selection?
 - (A) Analytical and confident
 - (B) Resentful and defensive
 - (C) Objective and speculative
 - (D) Tentative and skeptical
 - (E) Persuasive and cynical
3. According to the passage, the interservice strife that followed unification

- occurred primarily between the
- (A) Army and Army air forces
 - (B) Army and Navy
 - (C) Army air forces and Navy
 - (D) Navy and Army
 - (E) Air Force and Navy
4. It can be inferred from the passage that Forrestal's appointment as Secretary of Defense was expected to
- (A) placate members of the Navy
 - (B) result in decreased levels of defense spending
 - (C) outrage advocates of the Army air forces
 - (D) win Congressional approval of the unification plan
 - (E) make Forrestal a Presidential candidate against Truman
5. According to the passage, President Truman supported which of the following??
- I. Elimination of the Navy
 - II. A unified military service
 - III. Establishment of a separate air force
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
6. With which of the following statements about defense unification would the author most likely agree?
- (A) Unification ultimately undermined United States military capability by inciting interservice rivalry.
 - (B) The unification legislation was necessitated by the drastic decline in appropriations for the military services.
 - (C) Although the unification was not entirely successful, it had the unexpected result of ensuring civilian control of the military.
 - (D) In spite of the attempted unification, each service was still able to pursue its own objectives without interference from the other branches.
 - (E) Unification was in the first place unwarranted and in the second place ineffective.
7. According to the selection, the political situation following the passage of the National Security Act of 1947 was characterized by all of the following EXCEPT
- (A) a shifting balance of power in Europe and in Asia

- (B) fierce interservice rivalries
 - (C) lack of strong leadership by the National Security Council
 - (D) shrinking postwar military budgets
 - (E) a lame-duck President who was unable to unify the legislature
8. The author cites the resignation and suicide of Forrestal in order to
- (A) underscore the bitterness of the interservice rivalry surrounding the passage of the *National Security Act* of 1947
 - (B) demonstrate that the Navy eventually emerged as the dominant branch of service after the passage of the *National Security Act* of 1947
 - (C) suggest that the nation would be better served by a unified armed service under a single command
 - (D) provide an example of a military leader who preferred to serve his country in war rather than in peace
 - (E) persuade the reader that Forrestal was a victim of political opportunists and an unscrupulous press
9. The author is primarily concerned with
- (A) discussing the influence of personalities on political events
 - (B) describing the administration of a powerful leader
 - (C) criticizing a piece of legislation
 - (D) analyzing a political development
 - (E) suggesting methods for controlling the military

Passage 71 (8/22)

Behavior is one of two general responses available to **endothermic** (warm-blooded) species for the regulation of body temperature, the other being innate (reflexive) mechanisms of heat production and heat loss. Human beings rely primarily on the first to provide a hospitable thermal **microclimate** for themselves, in which the transfer of heat between the body and the environment is accomplished with minimal involvement of innate mechanisms of heat production and loss. **Thermoregulatory** behavior anticipates hyperthermia, and the organism adjusts its behavior to avoid becoming hyperthermic: it removes layers of clothing, it goes for a cool swim, etc. The organism can also respond to changes in the temperature of the body core, as is the case during exercise; but such responses result from the direct stimulation of thermoreceptors distributed widely within the **central nervous system**, and the ability of these mechanisms to help the organism adjust to gross changes in its environment is limited.

Until recently it was assumed that organisms respond to microwave radiation in the same way that they respond to temperature changes caused by other forms of radiation. After all, the argument runs, microwaves are radiation and heat body tissues. This theory ignores the fact that the stimulus to a behavioral response is normally a temperature change that occurs at the surface of the organism. The thermoreceptors that prompt behavioral changes are located within the first millimeter of the skin's surface, but the energy of a **microwave field** may be

selectively deposited in deep tissues, effectively bypassing these thermoreceptors, particularly if the field is at near-resonant frequencies. The resulting **temperature profile** may well be a kind of reverse thermal gradient in which the deep tissues are warmed more than those of the surface. Since the heat is not conducted outward to the surface to stimulate the appropriate receptors, the organism does not “appreciate” this stimulation in the same way that it “appreciates” heating and cooling of the skin. **In theory**, the internal organs of a human being or an animal could be quite literally cooked **well-done** before the animal even realizes that the balance of its thermomicroclimate has been disturbed.

Until a few years ago, microwave irradiations at equivalent plane-wave power densities of about 100 mW/cm² were considered unequivocally to produce “thermal” effects; irradiations within the range of 10 to 100 mW/cm² might or might not produce “thermal” effects; while effects observed at power densities below 10 mW/cm² were assumed to be “nonthermal” in nature. Experiments have shown this to be an oversimplification, and a recent report suggests that fields as weak as 1 mW/cm² can be thermogenic. When the heat generated in the tissues by an imposed **radio frequency** (plus the heat generated by metabolism) exceeds the heat-loss capabilities of the organism, the thermoregulatory system has been compromised. Yet surprisingly, **not long ago**, an increase in the internal body temperature was regarded merely as “evidence” of a thermal effect.

1. The author is primarily concerned with
 - (A) showing that behavior is a more effective way of controlling bodily temperature than innate mechanisms
 - (B) criticizing researchers who will not discard their theories about the effects of microwave radiation on organisms
 - (C) demonstrating that effects of microwave radiation are different from those of other forms of radiation
 - (D) analyzing the mechanism by which an organism maintains its bodily temperature in a changing thermal environment
 - (E) discussing the importance of thermoreceptors in the control of the internal temperature of an organism
2. The author makes which of the following points about innate mechanisms for heat production?
 - I. They are governed by thermoreceptors inside the body of the organism rather than at the surface.
 - II. They are a less effective means of compensating for gross changes in temperature than behavioral strategies.
 - III. They are not affected by microwave radiation.
 - (A) I only
 - (B) I and II only
 - (C) I and III only
 - (D) II and III only
 - (E) I, II, and III

3. Which of the following would be the most logical topic for the author to **take up** in the paragraph following the final paragraph of the selection?
- (A) A suggestion for new research to be done on the effects of microwaves on animals and human beings
 - (B) An analysis of the differences between microwave radiation
 - (C) A proposal that the use of microwave radiation be prohibited because it is dangerous
 - (D) A survey of the literature on the effects of microwave radiation on human beings
 - (E) A discussion of the strategies used by various species to control hyperthermia
4. The author's strategy in lines 39-42 is to
- (A) introduce a hypothetical example to dramatize a point
 - (B) propose an experiment to test a scientific hypothesis
 - (C) cite a case study to illustrate a general contention
 - (D) produce a counterexample to disprove an opponent's theory
 - (E) speculate about the probable consequences of a scientific phenomenon
5. The author implies that the proponents of the theory that microwave radiation acts on organisms in the same way as other forms of radiation based their conclusions primarily on
- (A) laboratory research
 - (B) unfounded assumption
 - (C) control group surveys
 - (D) deductive reasoning
 - (E) causal investigation
6. The tone of the passage can best be described as
- (A) genial and conversational
 - (B) alarmed and disparaging
 - (C) facetious and cynical
 - (D) scholarly and **noncommittal**
 - (E) scholarly and concerned
7. The author is primarily concerned with
- (A) pointing out weaknesses in a popular scientific theory
 - (B) developing a hypothesis to explain a scientific phenomenon
 - (C) reporting on new research on the effects of microwave radiation
 - (D) criticizing the research methods of earlier investigators
 - (E) clarifying ambiguities in the terminology used to describe a phenomenon

Passage 72 (9/22)

Since World War II considerable advances have been made in the area of health-care services. These include better access to health care (particularly for the poor and minorities), improvements in physical plants, and increased numbers of physicians and other health personnel. All have played a part in the recent improvement in **life expectancy**. But there is mounting criticism of the large remaining gaps in access, unbridled cost inflation, the further fragmentation of service, excessive indulgence in wasteful high-technology “gadgeteering,” and a breakdown in doctor-patient relationships. **In recent years** proposed panaceas and new programs, small and large, have proliferated at a feverish pace and disappointments multiply at almost the same rate. This has led to an increased pessimism—“everything has been tried and nothing works”—which sometimes borders on cynicism or even nihilism.

It is true that the automatic “pass through” of rapidly **spiraling costs** to government and insurance carriers, which was set in a publicized environment of “the richest nation in the world,” produced **for a time** a sense of unlimited resources and allowed to develop a mood whereby every practitioner and institution could “do his own thing” without undue concern for the “Medical Commons.” The practice of full-cost reimbursement encouraged capital investment and now the industry is overcapitalized. Many cities have hundreds of excess hospital beds; hospitals have proliferated a superabundance of high-technology equipment; and structural ostentation and luxury were the **order of the day**. In any given day, one-fourth of all community beds are vacant; expensive equipment is underused or, worse, used unnecessarily. Capital investment brings rapidly rising **operating costs**.

Yet, in part, this pessimism derives from expecting too much of health care. It must be realized that care is, for most people, a painful experience, often accompanied by fear and unwelcome results. Although there is vast room for improvement, health care will always retain some unpleasantness and frustration. Moreover, the capacities of medical science are limited. **Humpty Dumpty** cannot always be put back together again. Too many physicians are reluctant to admit their limitations to patients; too many patients and families are unwilling to accept such realities. Nor is it true that everything has been tried and nothing works, as shown by the prepaid group practice plans of the Kaiser Foundation and at Puget Sound. **In the main**, however, such undertakings have been drowned by a veritable flood of public and private moneys which have supported and encouraged the continuation of conventional practices and subsidized their shortcomings on a massive, almost unrestricted scale. Except for the most idealistic and dedicated, there were no incentives to seek change or to practice self-restraint or frugality. In this atmosphere, it is not fair to condemn as failures all attempted experiments; it may be more accurate to say many never had a fair trial.

1. The author implies that the Kaiser Foundation and Puget Sound plans (lines 47-48) differed from other plans by
 - (A) encouraging capital investment
 - (B) requiring physicians to treat the poor
 - (C) providing incentives for cost control
 - (D) employing only dedicated and idealistic doctors

- (E) relying primarily on public funding
2. The author mentions all of the following as consequences of full-cost reimbursement EXCEPT
- (A) rising operating costs
 - (B) underused hospital facilities
 - (C) overcapitalization
 - (D) overreliance on expensive equipment
 - (E) lack of services for minorities
3. The tone of the passage can best be described as
- (A) light-hearted and amused
 - (B) objective but concerned
 - (C) detached and unconcerned
 - (D) cautious but sincere
 - (E) enthusiastic and enlightened
4. According to the author, the “pessimism” mentioned at line 35 is partly attributable to the fact that
- (A) there has been little real improvement in health-care services
 - (B) expectations about health-care services are sometimes unrealistic
 - (C) large segments of the population find it impossible to get access to health-care services
 - (D) advances in technology have made health care service unaffordable
 - (E) doctors are now less concerned with patient care
5. The author cites the prepaid plans in lines 46-48 as
- (A) counterexamples to the claim that nothing has worked
 - (B) examples of health-care plans that were over-funded
 - (C) evidence that health-care services are fragmented
 - (D) proof of the theory that no plan has been successful
 - (E) experiments that yielded disappointing results
6. It can be inferred that the sentence “Humpty Dumpty cannot always be put back together again” means that
- (A) the cost of health-care services will not decline
 - (B) some people should not become doctors
 - (C) medical care is not really essential to good health
 - (D) illness is often unpleasant and even painful
 - (E) medical science cannot cure every ill
7. With which of the following descriptions of the system for the delivery of

- health-care services would the author most likely agree?
- (A) It is biased in favor of doctors and against patients.
 - (B) It is highly fragmented and completely ineffective
 - (C) It has not embraced new technology rapidly enough
 - (D) It is generally effective but can be improved
 - (E) It discourages people from seeking medical care
8. Which of the following best describes the logical structure of the selection?
- (A) The third paragraph is intended as a refutation of the first and second paragraphs.
 - (B) The second and third paragraphs explain and put into perspective the points made in the first paragraph.
 - (C) The second and third paragraphs explain and put into perspective the points made in the first paragraph.
 - (D) The first paragraph describes a problem, and the second and third paragraphs present two horns of a dilemma.
 - (E) The first paragraph describes a problem, the second its causes, and the third a possible solution.
9. The author's primary concern is to
- (A) criticize physicians and health-care administrators for investing in technologically advanced equipment
 - (B) examine some problems affecting delivery of health-care services and assess their severity
 - (C) defend the medical community from charges that health-care has not improved since World War II
 - (D) analyze the reasons for the health-care industry's inability to provide quality care to all segments of the population
 - (E) describe the peculiar economic features of the health-care industry that are the causes of spiraling medical costs

Passage 73 (10/22)

During the Victorian period, women writers were measured against a social rather than a literary ideal. Hence, it was widely thought that novels by women should be modest, religious, sensitive, guileless, and chaste, like their authors. Many Victorian women writers took exception to this belief, however, resisting the imposition of nonliterary restrictions on their work. Publishers soon discovered that the gentlest and most idyllic female novelists were tough-minded and relentless when their professional integrity was at stake. Keenly aware of their artistic responsibilities, these women writers would not make concessions to secure commercial success.

The Brontës, George Eliot, Elizabeth Barrett Browning, and their lesser-known

contemporaries repudiated, in their professional lives, the courtesy that Victorian ladies might exact from Victorian gentlemen. Desiring rigorous and impartial criticism, most women writers did not wish reviewers to be kind to them if kindness meant overlooking their literary weaknesses or flattering them on their accomplishments simply because of their sex. They had expected derisive reviews; instead, they found themselves confronted with generous criticism, which they considered condescending. Elizabeth Barrett Browning labeled it “the comparative respect which means... absolute scorn.”

For their part, Victorian critics were virtually obsessed with finding the place of the woman writer so as to judge her appropriately. Many bluntly admitted that they thought *Jane Eyre* a masterpiece if written by a man, shocking or disgusting if written by a woman. Moreover, reactionary reviewers were quick to associate an independent heroine with carefully concealed revolutionary doctrine; several considered *Jane Eyre* a radical feminist document, as indeed it was. To Charlotte Brontë, who had demanded dignity and independence without any revolutionary intent and who considered herself politically conservative, their criticism was an affront. Such criticism bunched all women writers together rather than treating them as individual artists.

Charlotte Brontë's experience served as a warning to other women writers about the prejudices that immediately associated them with feminists and others thought to be political radicals. Irritated, and anxious to detach themselves from a group stereotype, many expressed relatively conservative views on the emancipation of women (except on the subject of women's education) and stressed their own domestic accomplishments. However, in identifying themselves with women who had chosen the traditional career path of marriage and motherhood, these writers encountered still another threat to their creativity. Victorian prudery rendered virtually all experience that was uniquely feminine unprintable. No nineteenth-century woman dared to describe childbirth, much less her sexual passion. Men could not write about their sexual experiences either, but they could write about sport, business, crime, and war—all activities from which women were barred. Small wonder no woman produced a novel like *War and Peace*. What is amazing is the sheer volume of first-rate prose and poetry that Victorian women did write.

1. The primary purpose of the passage is to
 - (A) refute the contention that no Victorian woman writer produced a novel like *War and Peace*
 - (B) trace the historical relationship between radical feminist politics and the Victorian novels written by women
 - (C) show how three Victorian women writers responded to criticism of their novels
 - (D) resolve the apparent contradiction between Victorian women writers' literary innovativeness and their rather conservative social views
 - (E) describe the discrepancy between Victorian society's expectations of women writers and the expectations of the women writers themselves
2. According to the passage, Victorian women writers “would not make concessions” (line 13) to publishers primarily because they felt that such

- concessions would
- (A) require them to limit descriptions of uniquely feminine experiences
 - (B) compromise their artistic integrity
 - (C) make them vulnerable to stereotyping by critics
 - (D) provide no guarantee that their works would enjoy commercial success
 - (E) go against the traditions of English letters
3. The passage suggests that Victorian criticism of works by women writers was
- (A) indulgent
 - (B) perfunctory
 - (C) resourceful
 - (D) timely
 - (E) apolitical
4. The author of the passage quotes Elizabeth Barrett Browning (lines 28-29) in order to demonstrate that Victorian women writers
- (A) possessed both talent and literary creativity
 - (B) felt that their works were misunderstood
 - (C) refused to make artistic concessions
 - (D) feared derisive criticism
 - (E) resented condescending criticism
5. It can be inferred from the passage that Charlotte Bronte considered the criticisms leveled at *Jane Eyre* by reactionary reviewers “an affront” (line 43) primarily because such criticism
- (A) exposed her carefully concealed revolutionary doctrine to public scrutiny
 - (B) assessed the literary merit of the novel on the basis of its author’s sex
 - (C) assumed that her portrayal of an independent woman represented revolutionary ideas
 - (D) labeled the novel shocking and disgusting without just cause
 - (E) denied that the novel was a literary masterpiece
6. Which of the following statements best describes the “threat” mentioned in line 57 of the passage?
- (A) Critics demanded to know the sex of the author before passing judgment on the literary quality of a novel.
 - (B) Women writers were prevented from describing in print experiences about which they had special knowledge.
 - (C) The reading public tended to prefer historical novels to novels describing contemporary London society.
 - (D) Publishers were urging Victorian women writers to publish under their own names rather than under pseudonyms.

- (E) Women writers' domestic responsibilities tended to take time away from their writing.
7. The passage suggests that the attitude of Victorian women writers toward being grouped together by critics was most probably one of
- (A) relief
 - (B) indifference
 - (C) amusement
 - (D) annoyance
 - (E) ambivalence
8. It can be inferred from the passage that a Victorian woman writer who did not consider herself a feminist would most probably have approved of women's
- (A) entering the noncombat military
 - (B) entering the publishing business
 - (C) entering a university
 - (D) joining the stock exchange
 - (E) joining a tennis club
9. The passage suggests that the literary creativity of Victorian women writers could have been enhanced if
- (A) women had been allowed to write about a broader range of subjects
 - (B) novels of the period had been characterized by greater stylistic and structural ingenuity
 - (C) a reserved and decorous style had been a more highly valued literary ideal
 - (D) publishers had sponsored more new women novelists
 - (E) critics had been kinder in reviewing the works of women novelists

Passage 74 (11/22)

Agricultural progress provided the stimulus necessary to **set off** economic expansion in medieval France. As long as those who worked the land were barely able to ensure their own **subsistence** and that of their landlords, all other activities had to be minimal, but when food surpluses increased, it became possible to release more people for governmental, commercial, religious and cultural pursuits.

However, not all the funds from the agricultural surplus were actually available for commercial investment. Much of the surplus, in the form of food increases, probably went to raise the subsistence level; an additional amount, in the form of currency gained from the sale of food, went into the royal treasury to be used in waging war. Although Louis VII of France levied a less crushing tax burden on his subjects than did England's Henry II, Louis VII did spend great sums on an unsuccessful crusade, and his vassals—both lay and ecclesiastic—took over spending where their sovereign stopped. Surplus funds were claimed both by the Church and by feudal landholders, **whereupon** cathedrals and castles mushroomed throughout France.

The simultaneous progress of cathedral building and, for instance, vineyard expansion in **Bordeaux** illustrates the very real competition for available capital between the Church and commercial interests; the former produced inestimable moral and artistic riches, but the latter had a stronger immediate impact upon gross national product. Moreover, though all wars by definition are defensive, the frequent crossings of armies that **lived off** the land and impartially burned all the huts and barns on their path consumed considerable resources.

Since demands on the agricultural surplus would have varied **from year to year**, we cannot precisely calculate their impact on the commercial growth of medieval France. But we must bear that impact in mind when estimating the assets that were likely to have been available for investment. No doubt castle and cathedral building was not totally barren of profit (for the builders, that is), and it produced intangible dividends of material and moral satisfaction for the community. Even wars **handed back** a fragment of what they took, at least to a few. Still, we cannot place on the same plane a primarily destructive activity and a constructive one, nor expect the same results from a new bell tower as from a new **water mill**. Above all, medieval France had little room for investment over and above the preservation of life. Granted that war cost much less than it does today, that the Church rendered all sorts of educational and recreational services that were unobtainable elsewhere, and that government was far less demanding than is the modern state—nevertheless, for medieval men and women, supporting commercial development required considerable economic sacrifice.

1. According to the passage, agricultural revenues in excess of the amount needed for subsistence were used by medieval kings to
 - (A) patronize the arts
 - (B) sponsor public recreation
 - (C) wage war
 - (D) build cathedrals
 - (E) fund public education
2. According to the passage, which of the following was an important source of revenue in medieval France?
 - (A) Cheese
 - (B) Wine
 - (C) Wool
 - (D) Olive oil
 - (E) Veal
3. The passage suggests that which of the following would have reduced the assets immediately available for commercial investment in medieval France?
 - I. Renovation of a large cathedral
 - II. A sharp increase in the birth rate
 - III. An invasion of France by Henry II
 - (A) III only
 - (B) I and II only

- (C) I and III only
 - (D) II and III only
 - (E) I, II, and III
4. It can be inferred from the passage that more people could enter government and the Church in medieval France because
- (A) the number of individual landholdings in heavily agricultural areas was beginning to increase
 - (B) an increase in the volume of international trade had brought an increase in the population of cities
 - (C) a decrease in warfare had allowed the king to decrease the size of the army
 - (D) food producers could grow more food than they and their families needed to survive
 - (E) landlords were prospering and thus were demanding a smaller percentage of tenants' annual yields
5. The author implies that the reason we cannot expect the same results from a new bell tower as from a new water mill is that
- (A) bell towers yield an intangible dividend
 - (B) bell towers provide material satisfaction
 - (C) water mills cost more to build than bell towers
 - (D) water mills divert funds from commerce
 - (E) water mills might well be destroyed by war
6. The author of the passage most probably bases his central argument on which of the following theoretical assumptions often made by economists?
- (A) Different people should be taxed in proportion to the benefit they can expect to receive from public activity.
 - (B) Perfect competition exists only in the case where no farmer, merchant, or laborer controls a large enough share of the total market to influence market price.
 - (C) A population wealthy enough to cut back its rate of consumption can funnel the resulting savings into the creation of capital.
 - (D) A full-employment economy must always, to produce one good, give up producing another good.
 - (E) There is a universal tendency for population, unless checked by food supply, to increase in a geometric progression.
7. The author suggests that commercial expansion in medieval France "required considerable economic sacrifice" (lines 59-60) primarily for which of the following reasons?
- (A) Cathedrals cost more to build and rebuild than did castles.
 - (B) The numerous wars fought during the period left the royal treasury bankrupt.

- (C) Louis VII levied a more crushing tax burden on his subjects than did Henry II.
- (D) Although much of the available surplus had been diverted into vineyard expansion, the vineyards had not yet begun to produce.
- (E) Although more food was being produced, the subsistence level was not very far above the minimum required to sustain life.
8. The passage implies that which of the following yielded the lowest dividend to medieval men and women relative to its cost?
- (A) Warfare
- (B) Vineyard expansion
- (C) Water mill construction
- (D) Castle building
- (E) Cathedral building
9. Which of the following statements best expresses the central idea of the passage?
- (A) Commercial growth in medieval France may be accurately computed by calculating the number of castles and cathedrals built during the period.
- (B) Competition between the Church and the feudal aristocracy for funds created by agricultural surplus demonstrably slowed the economic growth of medieval France.
- (C) Despite such burdens as war and capital expansion by landholders, commerce in medieval France expanded steadily as the agricultural surplus increased.
- (D) Funds actually available for commerce in medieval France varied with the demands placed on the agricultural surplus.
- (E) The simultaneous progress of vineyard expansion and building in medieval France gives evidence of a rapidly expanding economy.

Passage 75 (12/22)

For years scholars have contrasted slavery in the United States and in Brazil, stimulated by the fact that racial patterns assumed such different aspects in the two countries after emancipation. Brazil never developed a system of rigid segregation **of the sort** that replaced slavery in the United States, and its racial system was fluid because its definition of race was based as much on characteristics such as economic status as on skin color. Until recently, the most persuasive explanation for these differences was that Portuguese institutions especially the Roman Catholic church and Roman **civil law**, promoted recognition of the slave's humanity. The English colonists, on the other hand, constructed their system of slavery **out of whole cloth**. There were simply no precedents in English **common law**, and separation of church and state barred Protestant clergy from the role that priests assumed in Brazil.

But the assumption that institutions alone could so powerfully affect the history of two raw and malleable **frontier** countries seems, on reexamination, untenable. Recent studies focus instead on a particular set of contrasting economic circumstances and demographic profiles at

significant periods in the histories of the two countries. Persons of mixed race quickly appeared in both countries. In the United States they were considered to be Black, a social definition that was feasible because they were in the minority. In Brazil, it was not feasible. Though intermarriage was illegal in both countries, the laws were unenforceable in Brazil since Whites formed a small minority in an overwhelmingly Black population. Manumission for persons of mixed race was also easier in Brazil, particularly in the nineteenth century when in the United States it was hedged about with difficulties. Furthermore, a shortage of skilled workers in Brazil provided persons of mixed race with the opportunity to learn crafts and trades, even before general emancipation, whereas in the United States entry into these occupations was blocked by Whites sufficiently numerous to fill the posts. The consequence was the development in Brazil of a large class of persons of mixed race, proficient in skilled trades and crafts, who stood waiting as a community for freed slaves to join.

There should be no illusion that Brazilian society after emancipation was color-blind. Rather, the large population of persons of mixed race produced a racial system that included a third status, a bridge between the Black caste and the White, which could be traversed by means of economic or intellectual achievement, marriage, or racial heritage. The strict and sharp line between the races so characteristic of the United States in the years immediately after emancipation was simply absent. With the possible exception of New Orleans, no special "place" developed in the United States for persons of mixed race. Sad to say, every pressure of society worked to prevent their attaining anything approximating the economic and social position available to their counterparts in Brazil.

1. In the passage, the author is primarily concerned with
 - (A) contrasting the systems of slavery that were established in Brazil and in the United States
 - (B) criticizing the arguments of those scholars who considered religion and law to be the determinants of the systems of slavery in Brazil and in the United States
 - (C) describing the factors currently thought to be responsible for the differences in the racial patterns that evolved in Brazil and in the United States
 - (D) advocating further study of the differences between the racial systems that developed in Brazil and in the United States
 - (E) pointing out the factors that made the status of Blacks in the United States lower than that of Blacks in Brazil
2. According to the passage, early scholars explained the differences between the racial systems that developed in the United States and in Brazil as the result of which of the following factors?
 - (A) Institutional
 - (B) Demographic
 - (C) Economic
 - (D) Geographical
 - (E) Historical

3. In the context in which it is found, the phrase “constructed their system of slavery out of whole cloth” (lines 15-16) implies that the system of slavery established by the English settlers was
 - (A) based on fabrications and lies
 - (B) tailored to the settlers’ particular circumstances
 - (C) intended to serve the needs of a frontier economy
 - (D) developed without direct influence from the settlers’ religion or legal system
 - (E) evolved without giving recognition to the slave’s humanity
4. The author implies that the explanation proposed by early scholars for the differences between the systems of slavery in the United States and in Brazil is
 - (A) stimulating to historians and legal scholars
 - (B) more powerful than more recent explanations
 - (C) persuasive in spite of minor deficiencies
 - (D) excessively legalistic in its approach
 - (E) questionable in light of current scholarly work
5. The author mentions intermarriage, manumission, and the shortage of skilled workers in Brazil primarily in order to establish which of the following?
 - (A) The environment in which Brazil’s racial system developed
 - (B) The influence of different legal and economic conditions in Brazil and the United States on the life-style of persons of mixed race
 - (C) The origins of Brazil’s large class of free skilled persons of mixed race
 - (D) The differences between treatment of slaves in Brazil and in the United States
 - (E) The difficulties faced by persons of mixed race in the United States, as compared to those in Brazil
6. According to the passage, Brazilian laws prohibiting intermarriage were ineffective because Brazil had a
 - (A) Portuguese Catholic heritage
 - (B) Small minority of whites
 - (C) Liberal set of laws concerning manumission
 - (D) Large number of freed slaves
 - (E) Shortage of people in the skilled crafts and trades
7. The use of quotation marks around the word “place” ([line 59](#)) suggests that the author intended to convey which of the following?
 - (A) An ambivalent attitude toward the city of New Orleans
 - (B) A negative attitude toward the role of race in determining status in the United States
 - (C) A critical comment about the maltreatment of persons of mixed race in the United States

- (D) A double meaning, indicating both a social status and a physical location
- (E) An ambiguity, referring to either the role persons of mixed race actually played, or the role they were assigned by the society
8. With which of the following statements regarding human behavior would the author of the passage be most likely to agree?
- (A) Only a fool or a political candidate would sing very loudly the glories of the institutions of Western culture.
- (B) Contact sports—displacements of our abiding impulses to kill—speak of essential human behavior more truthfully than all the theories of psychologists and historians.
- (C) Family, church, political party: these are the strong foundations of history and human behavior.
- (D) Money and its pursuit: an exploration of that theme will chart accurately the development of civilizations and the determinants of human behavior.
- (E) The circumstances in which humans find themselves—more than treasured beliefs or legal prescriptions—mold human behavior.

Passage 76 (13/22)

Desertification, the creation of desert-like conditions where none had existed before, is the result of the vagaries of weather and climate or the mismanagement of the land or, in most cases, some combination of both. Such ecological deterioration in the **Sahel** has been linked in several ways to the increased size of livestock herds. During the fifteen years preceding 1968, a period of extremely favorable rainfall, the **pastoralists** moved into the marginal regions in the north with relatively large herds. However, with the onset of a series of dry years beginning at the end of the rainy season in 1967, the pastoral populations found themselves overtaxing very marginal rangelands, with the result that the nomads viewed themselves as victims of a natural disaster. The mistaken idea that drought is an unexpected event has often been used to excuse the fact that long-range planning has failed to take rainfall variability into account. People blame the climate for agricultural failures in semiarid regions and make it a scapegoat for faulty population and agricultural policies.

Deterioration and ultimately desertification in the Sahel and in other ecosystems can be combated only if an ecologically realistic carrying capacity for the rangelands is determined. Although there appears to be widespread agreement that such a determination would be significant, there has been little agreement on how to make operational the concept of carrying capacity, defined as the amount of grazing stock that the pasture can support without deterioration of either the pasture or the stock. Should the **carrying capacity** be geared to the best, the average, or the poorest years? Which combination of statistical measures would be most meaningful for the planning of long-term development of rangelands? On which variables should such an assessment be based, vegetation, rainfall, soil, ground and surface water, or managerial capabilities? Such inconclusiveness within the scientific community, while understandable, creates confusion for the land managers, who often decide to take no action or who decide that all scientific suggestions are of equal weight and, therefore, indiscriminately

choose any one of those suggested. Given the downward spiral of land deterioration, it becomes essential that an ecologically acceptable carrying capacity be established and enforced.

It will also be crucial that land managers know what statistical and quasi-statistical measures actually mean: no single number can adequately describe the climate regime of an arid or semiarid region. Land managers must supplement such terms as the "mean" with more informative statistical measures to characterize adequately the variability of the climate. The understanding of this high degree of variability will serve to remove one of the major obstacles to resolving the perennial problems of the Sahel and of other arid or semiarid regions.

1. The author is primarily concerned with
 - (A) criticizing a social attitude
 - (B) suggesting an approach to solving a problem
 - (C) explaining the mechanics of a process
 - (D) defending the theories of ecological scientists
 - (E) establishing criteria for an experiment
2. According to the passage, which of the following contributed to the desertification of the Sahel?
 - I. The size of the livestock herds grazing on the land
 - II. The quality of the land in the Sahel
 - III. The amount of rainfall after 1967
 - (A) I only
 - (B) II only
 - (C) III only
 - (D) I and III only
 - (E) I, II, and III
3. It can be inferred from the passage that the nomadic tribes who moved into the marginal regions of the Sahel did NOT
 - (A) enlarge the size of their livestock herds
 - (B) conserve water after the drought began
 - (C) live in the Sahel after 1968
 - (D) expect a drastic change in weather conditions
 - (E) seek governmental aid in overcoming drought conditions
4. It can be inferred from the passage that the concept of the carrying capacity of land is
 - (A) still hypothetical rather than practical
 - (B) basically political rather than ecological
 - (C) independent of climatic conditions
 - (D) relatively unknown among ecologists

- (E) generally misrepresented by ecologists
5. Which of the following best states the author's view concerning the relationship between the ecological scientist and the land manager?
- (A) The scientist has not provided the manager with clear guidelines that can be used in regulating the productivity of land.
- (B) The scientist has provided theories that are too detailed for the manager to use successfully.
- (C) The scientist and the manager, in attempting to regulate the use of semiarid land, have ignored the traditional behavior patterns of pastoral communities.
- (D) The manager has misunderstood and hence misapplied the suggestions of the scientist.
- (E) The manager has chosen from among the scientist's suggestions those that are economically rather than ecologically safe.
6. With which of the following statements concerning desertification would the author be most likely to agree?
- (A) It is the result of factors beyond the control of science.
- (B) It is a problem largely affecting arid regions.
- (C) It could be prevented if land managers understood statistics.
- (D) It is not always the result of drastic climate changes alone.
- (E) It is not attributable to faulty agricultural policies.
7. According to the passage, a statistical description of the climate regime of an arid or semiarid region would probably be
- (A) misleading
- (B) impossible
- (C) complex
- (D) meaningless
- (E) abstract
8. The tone of the passage can best be described as
- (A) flippant
- (B) objective
- (C) aggressive
- (D) apologetic
- (E) unconcerned

Passage 77 (14/22)

The promise of finding long-term technological solutions to the problem of world food shortages seems difficult to fulfill. Many innovations that were once heavily supported and publicized, such as fish-protein concentrate and protein from algae grown on petroleum

substrates, have since fallen by the wayside. The proposals themselves were technically feasible, but they proved to be economically unviable and to yield food products culturally unacceptable to their consumers. Recent innovations such as opaque-2 maize, Antarctic krill, and the wheat-rye hybrid **triticale** seem more promising, but it is too early to predict their ultimate fate.

One characteristic common to unsuccessful food innovations has been that, even with extensive government support, they often have not been technologically adapted or culturally acceptable to the people for whom they had been developed. A successful new technology, therefore, must fit the entire sociocultural system in which it is to find a place. Security of crop yield, practicality of storage, palatability, and costs are much more significant than had previously been realized by the advocates of new technologies. For example, the better protein quality in **tortillas** made from opaque-2 maize will be of only limited benefit to a family on the margin of subsistence if the new maize is not culturally acceptable or is more vulnerable to insects.

The adoption of new food technologies depends on more than these technical and cultural considerations; economic factors and governmental policies also strongly influence the ultimate success of any innovation. Economists in the Anglo-American tradition have taken the lead in investigating the economics of technological innovation. Although they exaggerate in claiming that profitability is the key factor guiding technical change—they completely disregard the substantial effects of culture—they are correct in stressing the importance of profits. Most technological innovations in agriculture can be fully used only by large landowners and are only adopted if these profit-oriented business people believe that the innovation will increase their incomes. Thus, innovations that carry high rewards for big agribusiness groups will be adopted even if they harm segments of the population and reduce the availability of food in a country. Further, should a new technology promise to alter substantially the profits and losses associated with any production system, those with economic power will strive to maintain and improve their own positions. Since large segments of the populations of many developing countries are close to the subsistence margin and essentially powerless, they tend to be the losers in this system unless they are aided by a government policy that takes into account the needs of all sectors of the economy. Therefore, although technical advances in food production and processing will perhaps be needed to ensure food availability, meeting food needs will depend much more on equalizing economic power among the various segments of the populations within the developing countries themselves.

1. Which of the following best describes the organization of the first paragraph?
 - (A) A suggestion is made and arguments in its favor are provided.
 - (B) A criticism is levied and an alternative proposal is suggested.
 - (C) A generalization is advanced and supporting evidence is provided.
 - (D) An example is analyzed and general conclusions are derived from it.
 - (E) A position is stated and evidence qualifying it is provided.
2. It can be inferred from the passage that the author was unable to assess the truth of which of the following statements about opaque-2 maize?
 - (A) It is a more recent innovation than the use of fish-protein concentrate.

- (B) It can be stored as easily as other varieties of maize.
 - (C) It is more popular than the wheat-rye hybrid triticale.
 - (D) It produces tortillas of greater protein content than do other varieties of maize.
 - (E) It is more susceptible to insects than are other varieties of maize.
3. The passage mentions all of the following as factors important to the success of a new food crop EXCEPT the
- (A) practicality of storage of the crop
 - (B) security of the crop yield
 - (C) quality of the crop's protein
 - (D) cultural acceptability of the crop
 - (E) costs of production of the crop
4. According to the passage, the use of Antarctic krill as a food is an innovation whose future is
- (A) basically gloomy but still uncertain
 - (B) somewhat promising but very tentative
 - (C) generally bright and virtually assured
 - (D) tied to the success of opaque-2 maize
 - (E) endangered by certain technical problems
5. The author suggests that, in most developing countries, extensive government intervention accompanying the introduction of a food innovation will
- (A) usually be sufficient to guarantee the financial success of the innovation
 - (B) be necessary to ensure that the benefits of the innovation will be spread throughout the society
 - (C) provide the incentive necessary to convince landowners to try the innovation
 - (D) generally cost the country more than will be earned by the innovation
 - (E) normally occur only when the innovation favors large landowners
6. It can be inferred from the passage that the author would be most likely to agree with which of the following statements concerning the solution to food shortages in developing countries?
- (A) The introduction of technological innovations to reap profits might alleviate food shortages to some degree, but any permanent solution can come only from effective governmental intervention in the socioeconomic system.
 - (B) Innovations in agricultural technology will be of little help, and perhaps even harmful, in combating food shortages, no matter how well designed they are to suit local circumstances.
 - (C) Long-lasting solutions will not be found until large landowners adopt improvements that will make production more efficient and thus more

- profitable.
- (D) In order to achieve a meaningful solution to the problem of food shortages, the tastes of the general population must be educated to accept the new food products of modern agricultural technology.
- (E) Although a short-term solution to food shortages can be achieved by importing food from other countries, a long-term solution requires a restructuring of the countries' socioeconomic system.
7. The first paragraph of the passage best supports which of the following statements?
- (A) Too much publicity can harm the chances for the success of a new food innovation.
- (B) Innovations that produce culturally acceptable crops will generally be successful.
- (C) A food-product innovation can be technically feasible and still not be economically viable.
- (D) It is difficult to decide whether a food-product innovation has actually been a success.
- (E) Triticale will not be a success as a food source for most developing countries.
8. The author provides a sustained argument to support which of the following assertions?
- (A) Profitability is neither necessary nor sufficient for a new technology to be adopted.
- (B) Profitability is the key factor guiding technological change.
- (C) Economic factors and governmental policies strongly influence the ultimate success of any innovation.
- (D) Opaque-2 maize is of limited benefit to poor families in developing countries.
- (E) Innovations carrying high rewards for big agribusiness groups harm the poor.
9. The primary purpose of the passage is to discuss the
- (A) means of assessing the extent of the world food shortage
- (B) difficulties of applying technological solutions to the problem of food shortages
- (C) costs of introducing a new food technology into a developing country
- (D) Anglo-American bias of those trying to alleviate world food problems
- (E) nature of the new technological innovations in the area of food production

Passage 78 (15/22)

In Roman times, defeated enemies were generally **put to death** as criminals for having offended the emperor of Rome. In the Middle Ages, however, the practice of ransoming, or returning prisoners **in exchange for** money, became common. Though some saw this custom as

a step towards a more humane society, the primary reasons behind it were economic rather than humanitarian.

In those times, rulers had only a limited ability to raise taxes. They could neither force their subjects to fight nor pay them to do so. The promise of material compensation in the form of goods and ransom was therefore the only way of inducing combatants to participate in a war. In the **Middle Ages**, the predominant incentive for the individual soldier to participate in a war was the expectation of spoils. Although collecting ransom clearly brought financial gain, keeping a prisoner and arranging for his exchange had its costs. Consequently, several procedures were devised to reduce transaction costs.

One such device was a rule asserting that the prisoner had to assess his own value. This compelled the prisoner to establish a value without much distortion; indicating too low a value would increase the captive's chances of being killed, while indicating too high a value would either ruin him financially or create a prohibitively expensive ransom that would also result in death.

A second means of reducing costs was the practice of releasing a prisoner **on his word of honor**. This procedure was advantageous to both parties since the captor was relieved of the expense of keeping the prisoner while the captive had freedom of movement. The captor also benefited financially by having his captive raise the ransom himself. This "parole" was a viable practice since the released prisoner risked recapture or retaliation against his family. Moreover, in medieval society, **breaking one's word** had serious consequences. When, for example, King Francois I broke his word to the Emperor Charles V in 1525, his reputation suffered immensely.

A third method of reducing costs was the use of specialized institutions to establish contact between the two parties. Two types of institutions emerged: professional dealers who acted as brokers, and members of religious **orders** who acted as neutral intermediaries. Dealers advanced money for the ransom and charged interest on the loan. Two of the religious orders that became intermediaries were the Mercedarians and the Trinitarians, who between them arranged the ransom of nearly one million prisoners.

1. The primary purpose of the passage is to
 - (A) discuss the economic basis of the medieval practice of exchanging prisoners for ransom
 - (B) examine the history of the treatment of prisoners of war
 - (C) emphasize the importance of a warrior's "word of honor" during the Middle Ages
 - (D) explore three ways of reducing the costs of ransom
 - (E) demonstrate why warriors of the Middle Ages looked forward to battles
2. It can be inferred from the passage that a medieval soldier
 - (A) was less likely to kill captured members of opposing armies than was a soldier of the Roman Empire
 - (B) was similar to a 20th-century terrorist in that he operated on a basically independent level and was motivated solely by economic incentives
 - (C) had few economic options and chose to fight because it was the only way to

- earn an adequate living
- (D) was motivated to spare prisoners' lives by humanitarian rather than economic ideals
- (E) had no respect for his captured enemies since captives were typically regarded as weak
3. Which of the following best describes the change in policy from executing prisoners in Roman times to ransoming prisoners in the Middle Ages?
- (A) The emperors of Rome demanded more respect than did medieval rulers and thus Roman subjects went to greater lengths to defend their nation.
- (B) It was a reflection of the lesser degree of direct control medieval rulers had over their subjects.
- (C) It became a show of strength and honor for warriors of the Middle Ages to be able to capture and return their enemies.
- (D) Medieval soldiers were not as humanitarian as their ransoming practices might have indicated.
- (E) Medieval soldiers demonstrated more concern about economic policy than did their Roman counterparts.
4. The author uses the phrase "without much distortion" (line 26) in order
- (A) to indicate that prisoners would fairly assess their worth
- (B) to emphasize the important role medieval prisoners played in determining whether they should be ransomed
- (C) to explain how prisoners often paid more than an appropriate ransom in order to increase their chances for survival
- (D) suggest that captors and captives often had understanding relationships
- (E) to show that when in prison a soldier's view could become distorted
5. All of the following are mentioned in the passage as actions that were taken to ensure that ransoming prisoners was a profitable operation EXCEPT
- (A) each prisoner was made to designate the amount of ransom to be paid for his return
- (B) prisoners were released on the condition that they guaranteed that their ransoms would be paid
- (C) professional intermediaries were employed to facilitate the smooth exchange of prisoner and ransom at a price to the prisoner
- (D) religious orders acted as impartial mediators by arranging the trade-off of ransom and prisoner
- (E) medieval rulers promised to aid soldiers in their efforts to collect ransom
6. In the author's opinion, a soldier's decision to spare an adversary's life be linked historically to
- (A) the economic relationship of the warring states

- (B) the case with which a soldier could capture and subsequently imprison his enemy
 - (C) the economic gain from taking an enemy prisoner rather than killing him in combat
 - (D) technological advances in weaponry
 - (E) the desire for soldiers to uphold their word of honor
7. It can be inferred from the passage that the process of arranging ransoms during medieval times was
- (A) more lucrative for medieval soldiers and kings than the winning of spoils
 - (B) a procedure so costly that it was not economically worthwhile for the captors
 - (C) futile for the captive since he risked recapture even after his ransom was paid
 - (D) a potential source of income for others aside from the captors of the prisoners
 - (E) handled only through Mercedarian or Trinitarian intermediaries
8. Which of the following best describes the organization of the passage?
- (A) An assertion is made, briefly explained, and then several examples that refute the assertion are given.
 - (B) A hypothesis is offered, carefully qualified, and then supporting data is analyzed.
 - (C) A generally accepted historical viewpoint is presented in order to introduce discussion of its strengths and limitations.
 - (D) A historical analysis is made of a phenomenon and supporting details are offered.
 - (E) A historical dispute is introduced, and the case for one side is examined in detail.

Passage 79 (16/22)

In most earthquakes the Earth's crust cracks like porcelain. Stress **builds up** until a fracture forms at a depth of a few kilometers and the crust slips to relieve the stress. Some earthquakes, however, take place hundreds of kilometers down in the Earth's mantle, where high pressure makes rock so ductile that it flows instead of cracking, even under stress severe enough to deform it like putty. How can there be earthquakes at such depths?

That such deep events do occur has been accepted only since 1927, when the seismologist Kiyoo Wadati convincingly demonstrated their existence. Instead of comparing the arrival times of seismic waves at different locations, as earlier researchers had done, Wadati relied on a time difference between the arrival of primary (P) waves and the slower secondary (S) waves. Because P and S waves travel at different but fairly constant speeds, the interval between their arrivals increases **in proportion to** the distance from the **earthquake focus**, or rupture point.

For most earthquakes, Wadati discovered, the interval was quite short near the **epicenter**, the point on the surface where shaking is strongest. For a few events, however, the delay was long even at the epicenter. Wadati saw a similar pattern when he analyzed data on the intensity

of shaking. Most earthquakes had a small area of intense shaking, which weakened rapidly with increasing distance from the epicenter, but others were characterized by a lower peak intensity, felt over a broader area. Both the P-S intervals and the intensity patterns suggested two kinds of earthquakes: the more common shallow events, in which the focus lay just under the epicenter, and deep events, with a focus several hundred kilometers down.

The question remained: how can such quakes occur, *given* that mantle rock at a depth of more than 50 kilometers is too ductile to store enough stress to fracture? Wadati's work suggested that deep events occur in areas (now called Wadati-Benioff zones) where one crustal plate is forced under another and descends into the mantle. The descending rock is substantially cooler than the surrounding mantle and hence is less ductile and much more liable to fracture.

1. The passage is primarily concerned with
 - (A) demonstrating why the methods of early seismologists were flawed
 - (B) arguing that deep events are poorly understood and deserve further study
 - (C) defending a revolutionary theory about the causes of earthquakes and methods of predicting them
 - (D) discussing evidence for the existence of deep events and the conditions that allow them to occur
 - (E) comparing the effects of shallow events with those of deep events
2. The author uses the comparisons to porcelain and putty (lines 2 and 8) in order to
 - (A) explain why the Earth's mantle is under great pressure
 - (B) distinguish the earthquake's epicenter from its focus
 - (C) demonstrate the conditions under which a Wadati-Benioff zone forms
 - (D) explain why S waves are slower than P waves
 - (E) illustrate why the crust will fracture but the mantle will not
3. It can be inferred from the passage that if the S waves from an earthquake arrive at a given location long after the P waves, which of the following must be true?
 - (A) The earthquake was a deep event.
 - (B) The earthquake was a shallow event.
 - (C) The earthquake focus was distant.
 - (D) The earthquake focus was nearby.
 - (E) The earthquake had a low peak intensity.
4. The method used by Wadati to determine the depths of earthquakes is most like which of the following?
 - (A) Determining the depth of a well by dropping stones into the well and timing how long they take to reach the bottom
 - (B) Determining the height of a mountain by measuring the shadow it casts at different times of the day

- (C) Determining the distance from a thunderstorm by timing the interval between the flash of a lightning bolt and the thunder it produces
 - (D) Determining the distance between two points by counting the number of paces it takes to cover the distance and measuring a single pace
 - (E) Determining the speed at which a car is traveling by timing how long it takes to travel a known distance
5. The passage supports which of the following statements about the relationship between the epicenter and the focus of an earthquake?
- (A) P waves originate at the focus and S waves originate at the epicenter.
 - (B) In deep events the epicenter and the focus are reversed.
 - (C) In shallow events the epicenter and the focus coincide.
 - (D) In both deep and shallow events the focus lies beneath the epicenter.
 - (E) The epicenter is in the crust, whereas the focus is in the mantle.
6. The passage suggests that which of the following must take place in order for any earthquake to occur?
- I. Stress must build up.
 - II. Cool rock must descend into the mantle.
 - III. A fracture must occur.
- (A) I only
 - (B) II only
 - (C) III only
 - (D) I and III only
 - (E) I, II, and III
7. Information presented in the passage suggests that, compared with seismic activity at the epicenter of a shallow event, seismic activity at the epicenter of a deep event is characterized by
- (A) shorter P-S intervals and higher peak intensity
 - (B) shorter P-S intervals and lower peak intensity
 - (C) longer P-S intervals and similar peak intensity
 - (D) longer P-S intervals and higher peak intensity
 - (E) longer P-S intervals and lower peak intensity
8. The passage suggests which of the following about the views held by researchers before 1927?
- (A) Some researchers did not believe that deep events could actually occur.
 - (B) Many researchers rejected the use of P-S intervals for determining the depths of earthquakes.
 - (C) Some researchers doubted that the mantle was too ductile to store the stress needed for an earthquake.

- (D) Most researchers expected P waves to be slower than S waves.
- (E) Few researchers accepted the current model of how shallow events occur.
9. The author's explanation of how deep events occur would be most weakened if which of the following were discovered to be true?
- (A) Deep events are far less common than shallow events.
- (B) Deep events occur in places other than where crustal plates meet.
- (C) Mantle rock is more ductile at a depth of several hundred kilometers than it is at 50 kilometers.
- (D) The speeds of both P and S waves are slightly greater than previously thought.
- (E) Below 650 kilometers earthquakes cease to occur.

Passage 80 (17/22)

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

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

1. In the passage, the author is primarily concerned with doing which of the following?
- (A) Comparing two different approaches to a problem

- (B) Describing a problem and proposing a solution
 - (C) Defending an established method
 - (D) Presenting data and drawing conclusions from the data
 - (E) Comparing two different analyses of a current situation
2. It can be inferred from the passage that which of the following is true of majority shareholders in a corporation?
- (A) They make the corporation's operational management decisions.
 - (B) They are not allowed to own more than fifty percent of the corporation's stock.
 - (C) They cannot make quick profits by selling their stock in the corporation.
 - (D) They are more interested in profits than in productivity.
 - (E) They cannot sell any of their stock in the corporation without giving the public advance notice.
3. According to the passage, the purpose of the requirement suggested in lines 30-33 would be which of the following?
- (A) To encourage institutional stockholders to sell stock that they believe will decrease in value
 - (B) To discourage institutional stockholders from intervening in the operation of a company whose stock they own
 - (C) To discourage short-term profit-taking by institutional stockholders
 - (D) To encourage a company's employees to take an active role in the ownership of stock in the company
 - (E) To encourage investors to diversify their stock holdings
4. Which of the following best explains the author's statement that "A minority shareholder is necessarily a short-term trader" (lines 15-16)?
- (A) The only way a minority shareholder can make money from stocks is to buy and sell stocks as prices fluctuate over short periods of time.
 - (B) Only a shareholder who owns a majority of a company's stock can influence the trading price of the stock over a long period of time.
 - (C) A minority shareholder is prohibited by law from buying stock and holding it for long-term profits.
 - (D) Large institutions like pension funds cannot legally own a majority of any corporation's stock.
 - (E) A minority shareholder rarely takes an interest in the decisions of a corporation's board of directors.
5. The author suggests that which of the following is a true statement about people who typify the "old style capitalist" referred to in line 23?
- (A) They now rely on outdated management techniques.

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

Passage 81 (18/22)

For over 300 years, one of the most enduring beliefs among historians of England has been that the character of English society has been shaped by the unique openness of its ruling elite to entry by self-made entrepreneurs (especially newly wealthy merchants) able to buy their way into the ranks of elite society. This **upward mobility**, historians have argued, allowed England to escape the clash between those with social/political power and those with economic power, a conflict that beset the rest of Europe during the eighteenth and nineteenth centuries. Upward mobility was also used to explain England's exceptional stability since the late seventeenth century (no revolutions, for example), as well as such major events as the development of the most efficient agricultural system in Europe, the making of the first industrial revolution, and the onset of severe economic decline.

But is the thesis true? Recent work on the supposed consequences of an open elite has already produced some doubts. Little credence, for example, is now accorded the idea that England's late nineteenth-century economic decline resulted from absentee business owners too distracted by the demands of elite life to manage their firms properly. But, although the importance of an open elite to other major events has been severely questioned, it is only with a new work by Lawrence and Jeanne Stone that the openness itself has been confronted. Eschewing the **tack** of tracing the careers of successful entrepreneurs to gauge the openness of the elite, the Stones chose the alternative approach of analyzing the elite itself, and proceeded via the ingenious route of investigating country-house ownership.

Arguing that ownership of a country house was seen as essential for membership in the ruling elite, the Stones analyze the nature of country-house ownership in three counties for the period 1540-1880. Their critical findings are provocative: there was strikingly little change in the ownership of such houses throughout the period. Instead, even in the face of a demographic crisis (fewer marriages, declining fertility, rising infant mortality), the old elite was able to maintain itself, and its estates, intact for centuries through recourse to various marriage and inheritance strategies. The popular picture of venerable elite families overcome by debt and selling out to merchants is simply not **borne out** by the Stones' findings. Rather, the opportunities for entrepreneurs to buy their way into the elite, the Stones show, were extremely limited. If further studies of country-house ownership **attest to** the representativeness and accuracy of their data, then the Stones' conclusion that the open elite thesis cannot be maintained may, indeed, prove true.

1. According to the passage, one of the traditional explanations of England's late nineteenth-century economic decline has been that it resulted from the

- (A) tendency of the ruling elite to pursue conservative rather than innovative economic policies
 - (B) failure of business entrepreneurs to reduce the power of the ruling elite in English society
 - (C) investment of large amounts of capital in the purchase and maintenance of country houses
 - (D) tendency of business owners to attempt to retain control of their firms within their families
 - (E) failure of leading business entrepreneurs to pay close attention to their firms
2. The author suggests that which of the following was true of most European elites during the eighteenth and nineteenth centuries?
- (A) The ranks of these elites were generally closed to most business entrepreneurs.
 - (B) The elites generally dominated industrial development.
 - (C) Status within these elites was generally determined by the amount of land owned.
 - (D) These elites generally were able to maintain their power unchallenged.
 - (E) The power of these elites generally forestalled the development of a large class of self-made entrepreneurs.
3. Traditional historians of England, as they are described in the passage, would be most likely to agree with which of the following statements regarding open elites?
- (A) They develop more easily in agricultural rather than industrial societies.
 - (B) They develop in response to particular sets of economic conditions.
 - (C) They tend to unite some of the powerful groups in a society.
 - (D) They tend to reduce class distinctions based on income in a society.
 - (E) They tend to insure adequate distribution of material goods in a society.
4. The tone of the passage suggests that the author regards the Stones' methodological approach as
- (A) problematic
 - (B) difficult
 - (C) controversial
 - (D) rigorous
 - (E) clever
5. Which of the following best states the main idea of the passage?
- (A) Assumptions about the nature of England's ruling elite can no longer be used with certitude to explain many major economic developments.
 - (B) The concept of the open elite is of paramount importance in explaining major

- English political, social, and economic events.
- (C) The long-standing belief that England possessed a remarkably open ruling elite has recently been subjected to important and potentially lethal criticism.
- (D) Although many possibilities are available, the most reliable means of testing the truth of the 'open elite' hypothesis is to analyze changes in the composition of the elite.
- (E) An analysis of English country-house ownership in England indicates that there were few opportunities for merchants to buy the estates of old members of the landed elite.
6. Which of the following can be inferred from the Stones' findings about English country-house ownership in the three counties during the period 1540-1880?
- (A) Little change in the number or size of English country houses occurred during this period.
- (B) Wealthy business owners constituted a growing percentage of English country-house owners during this period.
- (C) Most of the families that owned country houses at the beginning of this period continued to own them at the end.
- (D) The most significant changes in English country-house ownership occurred during the second half of this period.
- (E) Self-made entrepreneurs were able to enter the ranks of the English country-house owners during this period only through marriage.
7. The primary purpose of the passage is to
- (A) resolve a debate between two schools of thought.
- (B) Present research that questions an established view.
- (C) Describe and criticize a new approach.
- (D) Defend a traditional interpretation against recent criticisms.
- (E) Analyze possible approaches to resolving a long-standing controversy.
8. The Stones suggest that major problems facing the English elite during the period 1540-1880 included which of the following?
- I. A reduction in the number of their offspring
- II. An increase in the amount of their indebtedness
- III. A decline in their political and social power
- (A) I only
- (B) III only
- (C) I and II only
- (D) II and III only
- (E) I, II, and III
9. The author suggests that the Stones' conclusions about the openness of the

- English elite would be strengthened by future studies that
- (A) pay more attention to other recent historical works
 - (B) include more data on factors other than country-house ownership
 - (C) concentrate more on the eighteenth and nineteenth centuries
 - (D) expand the area of research to include more counties
 - (E) focus more on successful business entrepreneurs

Passage 82 (19/22)

Comparable worth is a concept that rejects the premise of a separate and lower wage hierarchy for jobs that are done primarily by women, arguing instead that earnings should reflect only the worth of the work performed. This worth should be determined by an evaluation system that rates jobs according to their social importance and skill requirements. Because comparable worth does not attack all forms of inequality, it can have only a modest direct effect on the overall degree of inequality in society, but in attacking gender inequality in the job classification system it attacks a major component of gender inequality in the United States. The likelihood that other forms of inequality will become more manifest with the lessening of gender inequality is not a valid argument against comparable worth. Indeed, struggles for comparable worth may help launch campaigns against similar forms of inequity. Still, while conservatives have battled hard against comparable worth, radicals have been reluctant to fight for it because they see the narrow presentations in comparable worth litigation as the limits of the concept. But in addition to helping redress particular inequities, comparable worth could open a discussion of the entire wage system. Its theoretical and political impact will reach far beyond the framework in which it was conceived and force a rethinking of assumptions underlying current employment practices and the market itself.

How comparable worth will affect the hierarchy of wages is more difficult to foresee. It does not directly challenge the concept of a hierarchy; in fact, its insistence that jobs must be evaluated implies a hierarchy. However, its rejection of the market as an adequate basis for determining wages initiates a discussion of how value should be assigned to jobs. Advocates of comparable worth have challenged prevailing standards of evaluation, which stem from formal job evaluations first developed in industrial settings. These evaluations, based on points awarded for different job tasks, gave considerable emphasis to such activities as strenuous lifting and the operation of expensive equipment. Consequently, the skills and knowledge more typical of work done by women are less heavily emphasized. The 'Dictionary of Occupational Titles' reveals numerous current instances of such imbalance in job ratings.

While comparable-worth advocates accept the principle of a hierarchy of wages, arguing only that they seek more objective measures of job worth, the issues they raise provoke a broader debate. This debate does not, as the opponents have claimed, concern the feasibility of setting up and applying evaluative standards. Employers have done that for centuries. Rather, the debate is about the social values and priorities underlying the wage hierarchy and, ultimately, the market where age-old conventions and political, as opposed to purely economic, forces enter the process of setting wages.

1. Which of the following summarizes a main point of the passage?

- (A) The history of comparable worth closely parallels the history of changes in the structure of the economic system.
 - (B) The ultimate success of comparable worth depends on a public discussion of the historical conditions that led to its formulation.
 - (C) Comparable worth has social implications that extend beyond specific adjustments to the wage hierarchies for men and women.
 - (D) Comparable worth is gaining adherents even though it has traditionally met with organized opposition.
 - (E) Comparable worth has been instrumental in affording women access to jobs that had been held largely by men.
2. It can be inferred that the phrase a separate and lower wage hierarchy for jobs that are done primarily by women, as used in lines 2-3 of the passage, most nearly means which of the following?
- (A) That there is a greater range of salaries for men than for women
 - (B) That women typically receive less money than men do for doing jobs of approximately the same value
 - (C) That there are fewer wage-earning women than men in the work force
 - (D) That men have traditionally been more likely than women to receive advancement on the basis of seniority
 - (E) That men and women typically do not compete for the same jobs
3. In the first paragraph of the passage, the author describes the potential role and function of comparable worth in language that most often suggests
- (A) artistic endeavors
 - (B) business transactions
 - (C) criminal investigations
 - (D) military operations
 - (E) scientific experiments
4. It can be inferred from the passage that advocates of comparable worth believe which of the following?
- (A) A given kind of work has a particular inherent value to the employer or to society.
 - (B) The market is more influenced by political and social forces now than it was in the past.
 - (C) Gender inequality in the United States is primarily a product of the current economic system.
 - (D) Conservatives and radicals have the same reasons for not supporting comparable worth.
 - (E) Those who devised job-evaluation standards were more interested in economic than political issues.

5. As used by the author in line 2 of the last paragraph, “more objective” most nearly means
- (A) more quantifiable
 - (B) more seminal
 - (C) less categorical
 - (D) less job-specific
 - (E) less sex-biased
6. Which of the following best represents the sort of question at issue in the “broader debate” referred to in line 48 above?
- (A) What political factors have affected the relationship between wages and job-evaluation ratings?
 - (B) What gains have been achieved in the struggle for comparable-worth legislation?
 - (C) Will a new standard for job evaluation be any more workable than the current one?
 - (D) How will the balance of supply and demand be affected by comparable worth?
 - (E) How soon is it reasonable to expect the passage of stronger comparable-worth legislation?
7. According to the passage, which of the following is the most likely application of the notion of comparable worth?
- (A) The detailed explanation of the various forces that guide the market
 - (B) The formulation of attitudes about the role of supply and demand in setting wages
 - (C) The establishment of a political coalition in the struggle against inequity
 - (D) The integration of the industrial work force into the job market for a service and technology economy
 - (E) The reassessment of job characteristics as a means for determining just compensation
8. It can be inferred from the passage that radicals have not supported comparable worth because they view it as being
- (A) unrelated to historic developments that have molded the current economic system
 - (B) an integral part of the same system that has institutionalized various forms of inequity
 - (C) likely to undermine the unity of a reform movement by polarizing the different interest groups
 - (D) too limited and restricted in its uses to promote fundamental changes in the system

- (E) inherently flawed in that it has given rise to the concept of a wage hierarchy
9. The author's primary purpose in the passage is to
- (A) criticize inconsistent experiments
 - (B) suggest a new direction for research
 - (C) describe an intriguing geophysical phenomenon
 - (D) present evidence supporting a theory
 - (E) evaluate data relating to lunar geology

Passage 83 (20/22)

Historians have long thought that America was, from the beginning, profoundly influenced by the Lockean notion of liberty, with its strong emphasis on individual rights and self-interest. Yet in his recent book, historian J. G. A. Pocock argues that early American culture was actually rooted in the writings of Machiavelli, not Locke. The implications of this substitution are important: if Pocock's argument is right, then Americans may not be as deeply individualistic and capitalistic as many believe.

Pocock argues that out of the writings of antiquity Machiavelli created a body of political thinking called "classical republicanism." This body of thought revived the ancient belief that a human being was by nature a citizen who achieved moral fulfillment by participating in a self-governing republic. Liberty was interpreted as a condition that is realized when people are virtuous and are willing to sacrifice their individual interests for the sake of the community. To be completely virtuous, people had to be independent and free of the petty interests of the marketplace. The greatest enemy of virtue was commerce. This classical republican tradition is said by Pocock to have shaped the ideology of America during the eighteenth century.

Many events in early American history can be reinterpreted in light of Pocock's analysis. Jefferson is no longer seen as a progressive reader of Locke leading America into its individualistic future; instead Jefferson is understood as a figure obsessed with virtue and corruption and fearful of new commercial developments. Influenced by Pocock, some historians have even argued that a communitarian and precapitalist mentality was pervasive among the eighteenth-century farmers of America.

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

anxiety over virtue and corruption, but in a mood of liberal optimism over individual profits and prosperity.

1. Which of the following best states the author's main point?
 - (A) Classical republicanism could not have been the ideological basis of eighteenth-century America.
 - (B) Classical republicanism is an elitist theory that was rejected by eighteenth-century artisans and shopkeepers.
 - (C) Pocock understates the importance of the contributions Machiavelli made to the formation of early American culture.
 - (D) Pocock fails to capture the great extent to which eighteenth-century Americans were committed to a sense of civic duty.
 - (E) Pocock's account of Jefferson is incompatible with Jefferson's commitment to a Lockean notion of liberty.
2. The conception of liberty that, according to Pocock, formed the basis of America's eighteenth-century ideology is most clearly exhibited by which of the following individuals?
 - (A) The merchant who rebuilds the damaged sidewalk in front of his store in order to avoid potential lawsuits by customers who might fall there
 - (B) The professor who allows her students to help her design the content and the format of the courses she teaches
 - (C) The doctor who bows to government pressure and agrees to treat a small number of low-income patients at no cost
 - (D) The lawyer who argues that a state law prohibiting smoking in public places unfairly encroaches on the rights of smokers
 - (E) The engineer whose business suffers as a result of the personal time and energy he devotes to a program to clean up city streets
3. According to the author, eighteenth-century American artisans and shopkeepers had little reason to
 - (A) support the political efforts of Thomas Jefferson
 - (B) reject the ideals of classical virtue
 - (C) embrace the principles of classical republicanism
 - (D) renounce the political objectives of the British Empire
 - (E) worry about increasing profits and maintaining general prosperity
4. The author mentions which of the following as a fact that weakens Pocock's argument about the ideology of eighteenth-century America?
 - (A) Jefferson's obsession with virtue and corruption and his fear of commercial development
 - (B) The precapitalist mentality that was pervasive among farmers in early America

- (C) The political decline of artisans and shopkeepers in eighteenth-century America
 - (D) The colonists' lack of commitment to support the general welfare of the British Empire
 - (E) The existence of political privilege in early American society
5. The passage suggests that, if classical republicanism had been the ideology of eighteenth-century America, which of the following would have resulted?
- (A) People would have been motivated to open small businesses and expand commercial activity.
 - (B) Citizens and politicians would not have been encouraged to agitate for increased individual rights.
 - (C) People would have been convinced that by pursuing their own interests they were contributing to the good of the group.
 - (D) The political and social privileges enjoyed by the landed gentry would have been destroyed.
 - (E) A mood of optimism among people over individual profits and prosperity would have been created.
6. The author implies that Pocock's argument about the ideology of eighteenth-century America would be more plausible if the argument explained which of the following?
- (A) How a society that was once committed to the ideals of classical virtue could be transformed into a society of individual rights and self-interest
 - (B) How Thomas Jefferson could have become obsessed with individual rights and with prosperity and profits
 - (C) Why classical republicanism had such wide appeal among those who were free from the demands of the marketplace
 - (D) Why many colonists who embraced classical republicanism were reluctant to place their individual interests above those of Great Britain
 - (E) Why the landed gentry in eighteenth-century America should have believed that moral fulfillment is achieved by participating in a self-governing republic
7. According to the passage, Pocock's theory suggests that many eighteenth-century Americans believed that increasing commercial activity would
- (A) force the landed gentry to relinquish their vast holdings
 - (B) enrich the nation and increase individual rights
 - (C) cause some people to forfeit their liberty and virtue
 - (D) create a mood of optimism about national prosperity
 - (E) strengthen the political appeal of middle-class radicals
8. The author is primarily concerned with

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

Passage 84 (21/22)

Astrophysicists wrestling with the study of a new kind of star, the flat, “two-dimensional” configurations known as accretion disks have recently gained new insights into the behavior of these stars. Accretion disks exist in a variety of situations where matters swirl around a compact star such as a white dwarf star or a neutron star. Accretion disks are also suspected of playing a part in more exotic situations, in which the central object is imagined to be a supermassive black hole, the ultimate form of collapsed matter, rather than a compact star. The modeling of accretion disks is still in its infancy, a situation analogous to the days when ordinary stars were modeled by using elementary scaling laws without benefit of knowledge of the nuclear processes that power the stars. Similarly, the basic physics of the power by which accretion disks radiate, thought to originate in a form of turbulent friction, is known only at the crudest level.

Accretion disks were first defined in the context of Cataclysmic variables. In these systems, matter from the outer layers of an ordinary star is attracted by the gravitational influence of a nearby orbiting white dwarf star, the matter lost from the ordinary star cannot strike the surface of the tiny white dwarf directly but settles into an orbit around the star. The viscosity in the disk thus formed causes heating, radiation, and a slow spiraling of disk matter onto the surface of the white dwarf.

The rapid advances made in x-ray astronomy in the past decade have identified a second type of system in which accretion disks occur. In such a system, an accretion disk whirls about a neutron star rather than a white dwarf. The inner reaches of the accretion disk extend deeply into the gravitational potential of the neutron star where very rapid motion is the rule. The energy released by friction and the actual raining of the material from the disk onto the surface of the neutron star is so great that radiation is given off in a powerful flood of x-rays. And in at least one case, x-ray astronomers believe that the object in the center of an accretion disk is a black hole, suggesting that a third system may exist.

It had been assumed that portions of accretion disks would be unstable and that, as a result, clumping of their matter into rings would occur. There is no evidence from observation, however, that accretion disks do, in fact, suffer from these instabilities. In recent work, Abramowicz has shown that added gravitational effects due to general relativity may alter the expected Newtonian gravitational relationships in such a way that the disk remains stable, indicating that it is possible that these predicted instabilities do not occur.

Further progress toward understanding accretion disks will involve defining and proposing solutions to restricted problems just as was done in this case and was done and continues to be done for ordinary stars. Abramowicz’ work is a valuable example of the **care** that must be taken before reaching conclusions regarding accretion disks.

1. The author of the passage is primarily concerned with
 - (A) comparing Abramowicz' work to the work of earlier astrophysicists
 - (B) providing information about accretion disks and discussing significant new work
 - (C) defining the conditions under which accretion disks can be observed
 - (D) exploring the question of whether a black hole can ever be the central object of an accretion disk
 - (E) describing the phenomenon of accretion disks and reviewing several conflicting theories of their origins
2. It can be inferred from the passage that predictions of the instability of accretion disks were based on which of the following?
 - (A) A calculation of the probable effects of standard Newtonian gravitational relationships
 - (B) A calculation of the probable relationship between general relativity and standard Newtonian gravitational relationships
 - (C) A calculation of the energy released by friction within a compact star
 - (D) Observation of the x-rays radiated by compact stars
 - (E) Observation of the clumping of accretion disk matter into rings around compact stars
3. The author's attitude toward Abramowicz' work can best be described as one of
 - (A) uncertain approval
 - (B) unqualified respect
 - (C) mild interest
 - (D) careful dismissal
 - (E) hostile skepticism
4. The passage suggests which of the following about current scientific knowledge of the nuclear processes of ordinary stars?
 - (A) Its pattern of development has been analogous to that of developments in x-ray astronomy.
 - (B) Its role in the explanation of turbulent friction has been significant.
 - (C) It has contributed to a more accurate modeling of ordinary stars.
 - (D) It lags behind knowledge of scaling laws.
 - (E) It explains the behavior of accretion disks as well as that of ordinary stars.
5. The passage suggests that Abramowicz' work was motivated by which of the following assumptions?
 - (A) The quantity of energy released by accretion disks can be as large as it is only if the disks are stable.
 - (B) Improved techniques in x-ray astronomy would reveal any instabilities

- occurring in accretion disks.
- (C) The lack of observational evidence of instabilities in accretion disks suggests that predictions of their occurrence might be wrong.
- (D) Known methods of observing accretion disk surrounding compact stars and black holes do not permit the observation of the matter in accretion disks.
- (E) The gravitational potential of compact stars does not vary from star to star.
6. The passage implies which of the following about the progress of knowledge in astrophysics?
- (A) Adherence to outdated theories has, in the past, limited the activities of astrophysicists and restricted progress.
- (B) Progress has, in the past, occurred only as a result of significant breakthroughs in basic physics and chemistry.
- (C) Progress has, in the past, occurred as a result of a process of defining and solving restricted problems.
- (D) Given the recent acquisition of knowledge about the nuclear processes of stars, further progress is likely to be limited to the refinement of what is already known.
- (E) Conclusions in astrophysics have, in the past, been seriously flawed, thus limiting progress, although there have recently been signs of change.
7. The passage suggests that, compared to the study of ordinary stars, the study of accretion disks is
- (A) derivative
- (B) more sophisticated
- (C) less clearly focused
- (D) at an earlier stage of development
- (E) more dependent on technological advances
8. According to the passage, some accretion disks originated in
- (A) an increase in heat and radiation around an ordinary star
- (B) a powerful flood of x-rays emitted by a neutron star
- (C) a collision between two stars
- (D) the turbulent friction on the surface of a compact star
- (E) the accumulation of matter removed from an ordinary star
9. It can be inferred from the passage that the significance of Abramowicz' work is that it
- (A) provides a means of measuring the gravitational potential of neutron stars
- (B) opens a new area for exploration in the field of x-ray astronomy
- (C) proves that scaling laws cannot be applied to accretion disks
- (D) proposes a new system of classification of stars

- (E) suggests a resolution of a discrepancy between a theoretical prediction and actual observation

Passage 85 (22/22)

It is an unfortunate fact that most North Americans know little about American Indian culture and history. Scholars have studied such matters, but they have not succeeded in broadcasting their conclusions widely. Thus, it is still not widely known that American Indians have epics, that they performed plays long before Europeans arrived, and that they practiced politics and carried on trade.

One way to gain a fuller appreciation of this rich culture is to examine American Indian poetry, for poetry is in all cultures the most central and articulate of the arts. It is especially important that we study American Indian poetry as this poetry can create a context that gives cohesive expression to the crafts, the artifacts, and the isolated facts that many Americans have managed to notice *willy-nilly*. Even a survey of American Indian poetry reveals a range of poetic thought and technique that defies easy generalization. Jarold Ramsey hazards a summary, however, which serves at least to give the uninitiated reader some sense of what American Indian poetry is like. Overall, he writes, it represents "an oral, formulaic, traditional, and anonymous art form," whose approach is to emphasize the "mythic and sacred" components of reality. It "flourished through public performances... by skilled recitalists whose audiences already knew the individual stories" and valued the performers for their "ability to exploit their material dramatically and to combine them [their stories] in longer cycles" rather than for their "plot invention." Because this poetry belongs to highly ethnocentric tribal peoples, whose cultures "we still do not know much about," it "is likely to seem all the more terse, even cryptic."

American Indian poetry has another feature that Ramsey ignores: it is always functional. Whether sung, chanted, or recited; whether performed ceremonially, as entertainment, or as part of a task such as curing a patient or grinding corn; or whether recited individually or by a group, it is always fully woven into the fabric of ordinary life.

For complicated reasons, American Indian poetry has basically been ignored by non-Indian cultures. Kenneth Lincoln writes that failure to hear American Indian voices results "partly...from the tragedies of tribal dislocation, partly from mistranslation, partly from misconceptions about literature, partly from cultural indifference." Brian Swann suggests an additional explanation: tribal poetry is oral, whereas Europeans arrived in the New World with a deeply ingrained belief in the primacy of the written word. As a result, European settlers found it hard to imagine that poetry could exist without written texts and thus that the American Indians had achieved something parallel to what Europeans called literature long before Europeans arrived. As a consequence, Europeans did not fully respond to the rich vitality of American Indian poetry.

1. According to the passage, American Indian cultures have produced all of the following forms of artistic expression EXCEPT
 - (A) crafts
 - (B) dramas
 - (C) songs

- (D) written poems
 - (E) oral epics
2. According to Jarold Ramsey, American Indian poetry is an art form characterized by its
- (A) unusual depictions of landscapes
 - (B) integration with everyday affairs
 - (C) universal accessibility
 - (D) highly original plots
 - (E) adaptability to public performance
3. According to Kenneth Lincoln, one of the reasons that non-Indians have had little knowledge of American Indian poetry is that American Indian poems
- (A) have been poorly translated
 - (B) have not yet attracted the scholarly attention they deserve
 - (C) can be appreciated only when presented orally
 - (D) are difficult to understand without a background in comparative mythology
 - (E) are too stylistically complex
4. According to the passage, it would be unusual for American Indian poetry to be
- (A) attributed to specific authors
 - (B) sung by a group of performers
 - (C) chanted while working
 - (D) sung during a sacred ceremony
 - (E) performed in a dramatic manner
5. It can be inferred from the passage that Brian Swann believes which of the following about the European settlers of America?
- (A) They probably were more literate, on the average, than the general European population they left behind.
 - (B) They probably thought it necessary to understand American Indian politics before studying American Indian literature.
 - (C) They probably did not recognize evidence of an oral poetic tradition in the American Indian cultures they encountered.
 - (D) They probably could not appreciate American Indian poetry because it was composed in long narrative cycles.
 - (E) They probably did not study American Indian poetry because its subject matter was too practically oriented.
6. The tone of lines 12-16 suggests that the author believes that most Americans' knowledge of American Indian culture can best be characterized as
- (A) spotty and contradictory

- (B) stereotyped and limited
 - (C) confused and inaccurate
 - (D) unsystematic and superficial
 - (E) vague and biased
7. Which of the following best describes the organization of the last paragraph of the passage?
- (A) An observation is made and qualifications of it are provided.
 - (B) A phenomenon is noted and explanations for it are presented.
 - (C) A hypothesis is presented and arguments against it are cited.
 - (D) A prognosis is made and evidence supporting it is discussed.
 - (E) A criticism is presented and information expanding it is provided.

三、GMAT 考古题 15Passages

Passage 86 (1/15)

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

Both the concentric-ring model of the metropolis, first developed in Chicago in the late nineteenth century, and the sector model, closely associated with the work of Homer Hoyt in the 1930s, make the CBD the focal point of the metropolis. The concentric-ring model assumes that the varying degrees of need for accessibility to the CBD of various kinds of economic entities will be the main determinant of their location. Thus, wholesale and manufacturing firms, which need easy accessibility to the specialized legal, financial, and governmental services provided in the CBD, will normally be located just outside the CBD itself. Residential areas will occupy the outer rings of the model, with low-income groups residing in the relatively crowded older housing close to the business zone and high-income groups occupying the outermost ring, in the more spacious, newer residential areas built up through urban expansion.

Homer Hoyt's sector model is a modified version of the concentric-ring model. Recognizing the influence of early established patterns of geographic distribution on the later growth of the city, Hoyt developed the concept of *directional inertia*. According to Hoyt, custom and social pressures tend to perpetuate locational patterns within the city. Thus, if a particular part of the city (say, the east side) becomes a common residential area for higher-income families, perhaps

because of a particular topographical advantage such as a lake or other desirable feature, future expansion of the high-income segment of the population is likely to proceed in the same direction. In our example, as the metropolis expands, a wedge-shaped sector would develop on the east side of the city in which the higher-income residence would be clustered. Lower-income residences, along with manufacturing facilities, would be confined, therefore, to the western margins of the CBD.

Although Hoyt's model undoubtedly represented an advance in sophistication over the simpler concentric-ring model, neither model fully accounts for the increasing importance of focal points other than the traditional CBD. Recent years have witnessed the establishment around older cities of secondary nuclei centered on suburban business districts. In other cases, particular kinds of goods, services, and manufacturing facilities have clustered in specialized centers away from the CBD, encouraging the development of particular housing patterns in the adjacent areas. A new multicellular model of metropolitan geography is needed to express these and other emerging trends of urban growth.

1. The primary purpose of the passage is to
 - (A) explain the significance of Hoyt's concept of directional inertia and its effect on patterns of urban growth
 - (B) emphasize the inadequacy of past attempts to explain patterns of urban geography
 - (C) analyze two varying theories concerning the distribution of residential areas within and around the metropolis
 - (D) describe two models of metropolitan geography and suggest their limitations
 - (E) show the importance of the central business district as a focus for urban growth
2. It can be inferred from the passage that according to a unicellular urban model, law firms are commonly located near the center of a city mainly because
 - (A) law firms benefit from the proximity to financial and governmental services that a center city location provides
 - (B) the demand for legal services is too irregular to support many small law firms in the outer districts of the city
 - (C) law firms require accessibility to the wholesale and retail businesses that provide a major share of their clientele
 - (D) the high-income groups that make up the primary users of legal services demand easy access to the firms' offices
 - (E) the specialized service personnel required by a law firm are often interested in residing as close as possible to the city center
3. According to the concentric-ring model, in which of the following orders (from the center of the city outward) would the areas of the typical city be arranged?
 - (A) central business district, low-income housing, wholesale and manufacturing businesses, high-income housing

- (B) central business district, wholesale and manufacturing businesses, low-income housing, high-income housing
 - (C) wholesale and manufacturing businesses, central business district, low-income housing, high-income housing
 - (D) central business district, high-income housing, wholesale and manufacturing businesses, low-income housing
 - (E) wholesale and manufacturing businesses, low-income housing, central business district, high-income housing
4. According to the passage, the sector model differs from the concentric-ring model primarily in that it
- (A) stresses the role of topographic features in determining patterns of urban development
 - (B) emphasizes the continuing expansion of the city as an influence on urban development
 - (C) recognizes the importance of focal points of urban growth other than the traditional central business district
 - (D) assumes that the need for access to the central business district is the main determinant of urban developmental patterns
 - (E) takes into account the influence of certain social factors on urban geographical patterns
5. The passage states that both the concentric-ring model and the sector model
- (A) inadequately represent the forms of urban development emerging in today's cities
 - (B) need to be considerably refined to be of real use to students of urban growth
 - (C) have been superseded by more recently developed models of urban growth
 - (D) represent older cities more accurately than they do newly founded metropolitan areas
 - (E) fail to explain the rapid outward growth of cities that has occurred in recent years
6. According to the passage, an updated model of urban geography would indicate the
- (A) phenomenal growth in population and area of suburban residential districts beyond the limits of the city itself
 - (B) recent decline in the influence of business and industry over the geographical patterns of urban growth
 - (C) growing importance of urban business and service centers located away from the central business district
 - (D) clustering of business facilities in recently built areas, while older districts are turned into residential areas

- (E) gradual displacement of older urban centers by new, more highly specialized cities in geographically dispersed locations
7. All of the following are examples of the emerging trends of urban growth described in the last paragraph of the passage EXCEPT
- (A) the construction in a suburban community of a large shopping mall where many of the local residents do most of their buying
 - (B) the opening of an industrial park on the outskirts of a declining older city
 - (C) the construction of hospital-medical school complex near a highway fifteen miles from a downtown business district
 - (D) the building of a residential development near a suburban tool factory to house the factory workers and their families
 - (E) the creation of a luxury housing development in a rural setting thirty miles from the center of a city
8. Which of the following best describes the organization of the last paragraph of the passage?
- (A) It summarizes the information presented in the first three paragraphs and draws some conclusions.
 - (B) It outlines a new model, applies it to recent phenomena, and argues in favor of its adoption.
 - (C) It introduces no evidence in support of an existing model.
 - (D) It evaluates two models in the light of recent evidence and advocates the development of a third model.
 - (E) It compares one model unfavorably with another and develops the comparison by citing examples.

Passage 87 (2/15)

There is widespread belief that the emergence of giant industries has been accompanied by an equivalent surge in industrial research. A recent study of important inventions made since the turn of the century reveals that more than half were the product of individual inventors working alone, independent of organized industrial research. While industrial laboratories contributed such important products as nylon and transistors, independent inventors developed air conditioning, the automatic transmission, the jet engine, the helicopter, insulin, and streptomycin. Still other inventions, such as stainless steel, television, silicones, and Plexiglas were developed through the combined efforts of individuals and laboratory teams.

Despite these finding, we are urged to support monopolistic power on the grounds that such power creates an environment supportive of innovation. We are told that the independent inventor, along with the small firm, cannot afford to undertake the important research needed to improve our standard of living while protecting our diminishing resources; that only the giant corporation or conglomerate, with its prodigious assets, can afford the kind of expenditures that produce the technological advances vital to economic progress. But when we examine

expenditures for research, we find that of the more than \$35 billion spent each year in this country, almost two-thirds is spent by the federal government. More than half of this government expenditure is funneled into military research and product development, accounting for the enormous increase in spending in such industries as nuclear energy, aircraft, missiles, and electronics. There are those who consider it questionable that these defense-linked research projects will either improve our standard of living or do much to protect our diminishing resources.

Recent history has demonstrated that we may have to alter our longstanding conception of the process actuated by competition. The price variable, once perceived as the dominant aspect of the process, is now subordinate to the competition of the new product, the new business structure, and the new technology. While it can be assumed that in a highly competitive industry not dominated by single corporation, investment in innovation—a risky and expensive budget item—might meet resistance from management and stockholders concerned about cost-cutting, efficient organization, and large advertising budgets, it would be an egregious error to equate the monopolistic producer with bountiful expenditures on research. Large-scale enterprises tend to operate more comfortably in stable and secure circumstances, and their managerial bureaucracies tend to promote the status quo and resist the threat implicit in change. Moreover, in some cases, industrial giants faced with little or no competition seek to avoid the capital loss resulting from obsolescence by deliberately obstructing technological progress. By contrast, small firms undeterred by large investments in plant and capital equipment often aggressively pursue new techniques and new products, investing in innovation in order to expand their market shares.

The conglomerates are not, however, completely except from strong competitive pressures. There are instances in which they too must compete with another industrial Goliath, and then their weapons may include large expenditures for innovation.

1. The primary purpose of the passage is to
 - (A) advocate an increase in government support of organized industrial research
 - (B) point out a common misconception about the relationship between the extent of industrial research and the growth of monopolistic power in industry
 - (C) describe the inadequacies of small firms in dealing with the important matter of research and innovation
 - (D) show that America's strength depends upon individual ingenuity and resourcefulness
 - (E) encourage free-market competition among industrial giants
2. According to the passage, important inventions of the twentieth century
 - (A) were produced largely as a result of governmental support for military weapons research and development
 - (B) came primarily from the huge laboratories of monopolistic industries
 - (C) were produced at least as frequently by independent inventors as by research teams
 - (D) have greater impact on smaller firms than on conglomerates

- (E) sometimes adversely affect our standard of living and diminish our natural resources
3. Which of the following best describes the organization of the second paragraph of the passage?
- (A) Expenditures for various aspects of research are listed.
(B) Reasons for supporting monopolistic power are given and then questioned.
(C) Arguments are presented for minimizing competitive bidding for research.
(D) Resources necessary for research are defined.
(E) Costs for varied aspects of military research are questioned.
4. It can be inferred from the passage that the author
- (A) has little confidence in the ability of monopolistic industry to produce the important inventions of the future
(B) would rather see the federal government spend money on social services than on the defense establishment
(C) favors a conservative approach to innovation and places trust in conglomerates to provide efficient production
(D) feels that price should still be the dominant variable in the competitive process
(E) believes that excessive competition is a deterrent to innovation
5. The passage contains information that answers which of the following questions?
- I. What portion of the research dollar in this country is spent each year by the federal government?
II. Under what circumstances is an industrial giant likely to invest heavily in innovation?
III. Why might a monopolistic producer want to suppress an innovation?
- (A) I only
(B) II only
(C) I and II only
(D) II and III only
(E) I, II, and III
6. With which of the following statements would the author of the passage be most likely to agree?
- (A) Monopolistic power creates an environment supportive of innovation.
(B) Governmental expenditure for military research will do much to protect our dwindling resources.
(C) Industrial giants, with their managerial bureaucracies, respond more quickly to technological change than smaller firms do.
(D) Firms with a small share of the market aggressively pursue innovations

- because they are not locked into old capital equipment.
- (E) The independent inventor cannot afford to undertake the research needed to improve our standard of living.
7. Which of the following proposals best responds to the issues raised by the author?
- (A) Governmental restraints on monopolies should be lifted, and government funding should be made available to large corporations wishing to engage in research.
- (B) Governmental restraints on monopolies should be tightened, and government funding should be made available to small corporations and independent individuals wishing to engage in research.
- (C) Governmental restraints on monopolies should be tightened, and no government funding should be provided to any corporations or individuals wishing to engage in research.
- (D) The amount the government spends on military research should be decreased, and the amount it spends to improve the standard of living should be increased.
- (E) Governmental restraints on monopolies should be lifted, and no government funding should be provided to any corporations or individuals wishing to engage in research.
8. Which of the following, if true, would most weaken the author's main point?
- (A) In the last decade, conglomerates have significantly increased their research budgets for defense technology.
- (B) Tax restructuring permits smaller firms to write off a larger percentage of profits against research.
- (C) A ten-year study of the extent of resources devoted to research by smaller enterprises reveals a steady decline.
- (D) Military research is being directed more extensively to space technology than to short-range missiles.
- (E) Competition from foreign industries has increased the cost of labor and materials.

Passage 88 (3/15)

Shaw's defense of a theater of ideas brought him up against both his great bugbears—commercialized art on the one hand and Art for Art's Sake on the other. His teaching is that beauty is a by-product of other activity; that the artist writes out of moral passion (in forms varying from political conviction to religious zeal), not out of love of art; that the pursuit of art for its own sake is a form of self-indulgence as bad as any other sort of sensuality. In the end, the errors of "pure" art and of commercialized art are identical: they both appeal primarily

to the senses. True art, on the other hand, is not merely a matter of pleasure. It may be unpleasant. A favorite Shavian metaphor for the function of the arts is that of tooth-pulling. Even if the patient is under laughing gas, the tooth is still pulled.

The history of aesthetics affords more examples of a didactic than of a hedonist view. But Shaw's didacticism takes an unusual turn in its application to the history of arts. If, as Shaw holds, ideas are a most important part of a work of art, and if, as he also holds, ideas go out of date, it follows that even the best works of art go out of date in some important respects and that the generally held view that great works are in all respects eternal is not shared by Shaw. In the preface to *Three Plays for Puritans*, he maintains that renewal in the arts means renewal in philosophy, that the first great artist who comes along after a renewal gives to the new philosophy full and final form, that subsequent artists, though even more gifted, can do nothing but refine upon the master without matching him. Shaw, whose essential modesty is as disarming as his pose of vanity is disconcerting, assigns to himself the role, not of the master, but of the pioneer, the role of a Marlowe rather than of a Shakespeare. "The whirligig of time will soon bring my audiences to my own point of view," he writes, "and then the next Shakespeare that comes along will turn these petty tentatives of mine into masterpieces final for their epoch."

"Final for their epoch"—even Shakespearean masterpieces are not final beyond that. No one, says Shaw, will ever write a better tragedy than *Lear* or a better opera than *Don Giovanni* or a better music drama than *Der Ring des Nibelungen*; but just as essential to a play as this aesthetic merit is moral relevance which, if we take a naturalistic and historical view of morals, it loses, or partly loses, in time. Shaw, who has the courage of his historicism, consistently withstands the view that moral problems do not change, and argues therefore that for us modern literature and music form a Bible surpassing in significance the Hebrew Bible. That is Shaw's anticipatory challenge to the neo-orthodoxy of today.

1. The primary purpose of the passage is to discuss
 - (A) the unorthodoxy of Shaw's views on the Bible
 - (B) the aesthetic merit of Shaw's plays
 - (C) Shaw's theory of art
 - (D) Shavian examples of the theater of ideas
 - (E) Shaw's naturalistic and historical view of morals
2. The author sets off the word "pure" (line 9) with quotation marks in order to
 - (A) contrast it with the word "true," which appears later (line 10)
 - (B) suggest that, in this context, it is synonymous with "commercialized" (line 9)
 - (C) underscore its importance
 - (D) strip away its negative connotations
 - (E) emphasize its positive connotations
3. According to the author, Shaw compares art to tooth-pulling (lines 12-14) in order to show that
 - (A) the moral relevance of a work of art must be extracted from the epoch in

- which it was created
- (B) true art is painful to the senses
 - (C) even the best works of art go out of date
 - (D) pleasure is not the sole purpose of art
 - (E) all art has a lasting effect on its audience
4. According to the author, Shaw's didacticism was unusual in that it was characterized by
- (A) idealism
 - (B) historicism
 - (C) hedonism
 - (D) moralism
 - (E) religious zeal
5. It can be inferred from the passage that Shaw would probably agree with all of the following statements about Shakespeare EXCEPT:
- (A) He wrote out of a moral passion.
 - (B) All of his plays are out of date in some important respect.
 - (C) He was the most profound and original thinker of his epoch.
 - (D) He was a greater artist than Marlowe.
 - (E) His *Lear* gives full and final form to the philosophy of his age.
6. Which of the following does the author cite as a contradiction in Shaw?
- (A) Whereas he pretended to be vain, he was actually modest.
 - (B) He questioned the significance of the Hebrew Bible, and yet he believed that a great artist could be motivated by religious zeal.
 - (C) Although he insisted that true art springs from moral passion, he rejected the notion that morals do not change.
 - (D) He considered himself to be the pioneer of a new philosophy, but he hoped his audiences would eventually adopt his point of view.
 - (E) On the one hand, he held that ideas are a most important part of a work of art; on the other hand, he believed that ideas go out of date.
7. The ideas attributed to Shaw in the passage suggest that he would most likely agree with which of the following statements?
- (A) Every great poet digs down to a level where human nature is always and everywhere alike.
 - (B) A play cannot be comprehended fully without some knowledge and imaginative understanding of its context.
 - (C) A great music drama like *Der Ring des Nibelungen* springs from a love of beauty, not from a love of art.
 - (D) Morality is immutable; it is not something to be discussed and worked out.

- (E) *Don Giovanni* is a masterpiece because it is as relevant today as it was when it was created.
8. The passage contains information that answers which of the following questions?
- According to Shaw, what is the most important part of a work of art?
 - In Shaw's view, what does the Hebrew Bible have in common with *Don Giovanni*?
 - According to the author, what was Shaw's assessment of himself as a playwright?
- (A) I only
(B) III only
(C) I and II only
(D) II and III only
(E) I, II, and III
9. As it is revealed in the passage, the author's attitude toward Shaw can best be described as
- (A) condescending
(B) completely neutral
(C) approving
(D) envious
(E) adulatory

Passage 89 (4/15)

One of the many theories about alcoholism is the learning and reinforcement theory, which explains alcoholism by considering alcohol ingestion as a reflex response to some stimulus and as a way to reduce an inner drive state such as fear or anxiety. Characterizing life situations in terms of approach and avoidance, this theory holds that persons tend to be drawn to pleasant situations and repelled by unpleasant ones. In the latter case, alcohol ingestion is said to reduce the tension or feelings of unpleasantness and to replace them with the feeling of euphoria generally observed in most persons after they have consumed one or more drinks.

Some experimental evidence tends to show that alcohol reduces fear in the approach-avoidance situation. Conger trained one group of rats to approach a food goal and, using aversion conditioning, trained another group to avoid electric shock. After an injection of alcohol the pull away from the shock was measurable weaker, while the pull toward the food was unchanged.

The obvious troubles experienced by alcoholic persons appear to contradict the learning theory in the explanation of alcoholism. The discomfort, pain, and punishment they experience should presumably serve as a deterrent to drinking. The fact that alcoholic persons continue to drink in the face of family discord, loss of employment, illness, and other sequels of repeated bouts is explained by the proximity of the drive reduction to the consumption of alcohol; that is, alcohol has the immediate effect of reducing tension while the unpleasant consequences of

drunken behavior come only later. The learning paradigm, therefore, favors the establishment and repetition of the resort to alcohol.

In fact, the anxieties and feelings of guilt induced by the consequences of excessive alcohol ingestion may themselves become the signal for another bout of alcohol abuse. The way in which the cue for another bout could be the anxiety itself is explained by the process of stimulus generalization: conditions or events occurring at the time of reinforcement tend to acquire the characteristics of state of anxiety or fear, the emotional state itself takes on the properties of a stimulus, thus triggering another drinking bout.

The role of punishment is becoming increasingly important in formulating a cause of alcoholism based on the principles of learning theory. While punishment may serve to suppress a response, experiments have shown that in some cases it can serve as a reward and reinforce the behavior. Thus if the alcoholic person has learned to drink under conditions of both reward and punishment, either type of condition may precipitate renewed drinking.

Ample experimental evidence supports the hypothesis that excessive alcohol consumption can be learned. By gradually increasing the concentration of alcohol in drinking water, psychologists have been able to induce the ingestion of larger amounts of alcohol by an animal than would be normally consumed. Other researchers have been able to achieve similar results by varying the schedule of reinforcement—that is, by requiring the animal to consume larger and larger amounts of the alcohol solutions before rewarding it. In this manner, animals learn to drink enough to become dependent on alcohol in terms of demonstrating withdrawal symptoms.

1. The primary purpose of the passage is to
 - (A) compare the learning and reinforcement theory to other theories of alcoholism
 - (B) discuss how the behavior of alcoholic persons is explained by learning theory
 - (C) argue that alcoholism is a learned behavior
 - (D) explain how fear and anxiety stimulate and reinforce drinking in alcoholic persons
 - (E) present experimental evidence in support of the learning and reinforcement theory of alcoholism
2. The passage contains information that answers which of the following questions?
 - (A) What are some of the psychosocial problems associated with alcoholism?
 - (B) Which has proven more effective in the treatment of alcoholism, aversion conditioning or reinforcement?
 - (C) Why does alcohol ingestion reduce tension and give rise to a feeling of euphoria in most people?
 - (D) According to the learning theory, in what cases does punishment reinforce rather than deter drinking in alcoholic persons?
 - (E) Are some persons genetically predisposed to alcoholism?
3. It can be inferred from the passage that aversion conditioning is based primarily

- on the principle that
- (A) electric shock stimulates a response
 - (B) behavior that is punished will be avoided
 - (C) pain is a stronger stimulus than pleasure
 - (D) alcohol reduces fear
 - (E) behavior that is rewarded will be repeated
4. According to the passage, which of the following is true of stimulus generalization?
- (A) It contradicts the learning and reinforcement theory of alcoholism.
 - (B) It is the process by which an organism learns to respond to one stimulus but not to similar stimuli.
 - (C) It supports the hypothesis that excessive alcohol consumption can be learned.
 - (D) It explains why people tend to avoid behavior that is associated with painful experiences.
 - (E) It occurs when the conditions associated with a stimulus come to evoke the same response as the stimulus itself evokes.
5. The author cites Conger's experiment with two groups of rats in order to
- (A) show that ingestion of alcohol does not affect appetite
 - (B) corroborate the findings of other academic researchers
 - (C) show that alcohol decreases fear
 - (D) disprove the learning and reinforcement theory
 - (E) convince the reader of the usefulness of behavioral research
6. According to the passage, which of the following could induce an alcoholic to drink?
- I. The need to relieve tension
 - II. Anxieties resulting from guilt feelings about previous drinking bouts
 - III. Punishment for alcoholic behavior
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
7. The passage contains information that supports which of the following statements?
- (A) If the pleasurable taste of whisky leads to an acquired taste for brandy, then stimulus generalization has occurred.
 - (B) Slapping a child for misbehaving may over time encourage the child to repeat

- the misbehavior.
- (C) If a person has learned to drink under two sets of conditions, both must be present in order to induce that person to drink again.
- (D) Continued heavy use of alcohol usually causes severe damage to the body and nervous system.
- (E) When consumed in moderation, alcohol may benefit health.
8. According to the passage, how does the behavior of alcoholics appear to contradict learning theory?
- (A) Learning theory holds that people are drawn by pleasant situations and repelled by unpleasant ones, but in alcoholics that pattern appears to be reversed.
- (B) Contrary to learning theory, alcoholic persons do not respond to life situations in terms of approach and avoidance.
- (C) The unpleasant consequences of excessive alcoholic consumption do not deter alcoholics from drinking, as might be predicted from learning theory.
- (D) According to learning theory, drinking is a reflex response to an external stimulus, but for alcoholics it is more often a way to reduce an inner drive such as fear.
- (E) Instead of the feeling of euphoria predicted by learning theory, alcoholics frequently experience discomfort and pain after drinking.
9. It can be inferred from the passage that the author views the learning and reinforcement theory of alcoholism as
- (A) credible
- (B) unassailable
- (C) outdated
- (D) fallacious
- (E) revolutionary

Passage 90 (5/15)

(The following passage was written in 1977.)

Changes in the volume of unemployment are governed by three fundamental forces: the growth of the labor force, the increase in output per man-hour, and the growth of total demand for goods and services. Changes in the average hours of work enter in exactly parallel fashion but have been quantitatively less significant. As productivity rises, less labor is required per dollar of national product, or more goods and services can be produced with the same number of man-hours. If output does not grow, employment will certainly fall; if production increases more rapidly than productivity (less any decline in average hours worked), employment must rise. But the labor force grows, too. Unless gross national product (total final expenditure for goods and services corrected for price changes) rises more rapidly than the sum of productivity increase and labor force growth (again modified for any change in hours of work), the increase

in employment will be inadequate to absorb the growth in the labor force. Inevitably the unemployment rate will increase. Only when total production expands faster than the rate of labor force growth plus the rate of productivity increase and minus the rate at which average annual hours fall does the unemployment rate fall. Increases in productivity were more important than growth of the labor force as sources of the wide gains in output experienced in the period from the end of World War II to the mid-sixties. These increases in potential production simply were not matched by increases in demand adequate to maintain steady full employment.

Except for the recession years of 1949, 1954, and 1958, the rate of economic growth exceeded the rate of productivity increase. However, in the late 1950s productivity and the labor force were increasing more rapidly than usual, while the growth of output was slower than usual. This accounted for the change in employment rates.

But if part of the national purpose is to reduce and contain unemployment, arithmetic is not enough. We must know which of the basic factors we can control and which we wish to control. Unemployment would have risen more slowly or fallen more rapidly if productivity had increased more slowly, or the labor force had increased more slowly, or the hours of work had fallen more steeply, or total output had grown more rapidly. These are not independent factors, however, and a change in any of them might have caused changes in the others.

A society can choose to reduce the growth of productivity, and it can probably find ways to frustrate its own creativity. However, while a reduction in the growth of productivity at the expense of potential output might result in higher employment in the short run, the long-run effect on the national interest would be disastrous.

We must also give consideration to the fact that hidden beneath national averages is continuous movement into, out of, between, and within labor markets. For example, 15 years ago, the average number of persons in the labor force was 73.4 million, with about 66.7 million employed and 3.9 million unemployed. Yet 14 million experienced some term of unemployment in that year. Some were new entrants to the labor force; others were laid off temporarily. The remainder were those who were permanently or indefinitely severed from their jobs. Thus, the average number unemployed during a year understates the actual volume of involuntary displacement that occurs.

High unemployment is not an inevitable result of the pace of technological change but the consequence of passive public policy. We can anticipate a moderate increase in the labor force accompanied by a slow and irregular decline in hours of work. It follows that the output of the economy—and the aggregate demand to buy it—must grow by more than 4 percent a year just to prevent the unemployment rate from rising, and by even more if the unemployment rate is to fall further. Yet our economy has seldom, if ever, grown at a rate greater than 3.5 percent for any extended length of time. We have no cause of complacency. Positive fiscal, monetary, and manpower policies will be needed in the future.

1. The primary purpose of the passage is to
 - (A) define the economic terms used in the discussion of employment
 - (B) criticize the decisions of past administrations during recession years
 - (C) call for the application of positive economic control policies in the years that

lie ahead

- (D) allay current fears about increasing unemployment
- (E) document the rise of American productivity since World War II
2. According to the passage, if the labor force does not grow and there is no decline in the average number of hours worked, under which of the following conditions will the employment rate inevitably rise?
- (A) Total production expands faster than the total demand for goods and services.
- (B) The total demand for goods and services and productivity both rise.
- (C) Output per man-hour and gross national product both rise.
- (D) Productivity increases more rapidly than production.
- (E) Production increases more rapidly than output per man-hour.
3. It can be inferred from the passage that in the late 1950s, which of the following occurred?
- I. The growth in output was less than 3.5 percent.
- II. The average number of hours worked declined.
- III. The increase in output per man-hour was greater than usual.
- (A) I only
- (B) II only
- (C) III only
- (D) I and III only
- (E) I, II, and III
4. It can be inferred from the passage that during the recession years of 1949, 1954, and 1958, which of the following most likely occurred?
- (A) The labor force increased more rapidly than it did in any other year between 1945 and 1965.
- (B) More labor was required per dollar of national product than in any other year between 1945 and 1965.
- (C) The average number of hours worked rose.
- (D) Full employment was attained.
- (E) The rate of unemployment increased.
5. It can be inferred from the passage that if a policy to increase employment by reducing the growth of productivity at the expense of potential output were adopted, the author most likely would regard it as
- (A) sound but inadequate
- (B) overly aggressive
- (C) frivolous
- (D) insidious

- (E) unobjectionable
6. It can be inferred from the passage that, according to the author, the actual number of people who experience some term of unemployment during any given year
- (A) is the difference between the number of persons in the labor force and the number of persons employed that year
 - (B) does not reflect movement into, out of, between, and within labor markets
 - (C) exceeds the average number unemployed during that year
 - (D) overstate the volume of involuntary displacement that occurs during the year
 - (E) is impossible to calculate
7. The passage contains information that answers all of the following questions EXCEPT:
- (A) What is gross national product?
 - (B) What effect does a change in productivity invariably have on gross national product?
 - (C) Under what conditions might employment rise in the short run?
 - (D) What effect does an increase in output and a decrease in number of hours worked have on productivity?
 - (E) What was the average number of people unemployed in 1962?
8. Which of the following best describes the organization of the fifth paragraph of the passage?
- (A) An assertion is made, data are provided to support it, and the assertion is reiterated in different words.
 - (B) Several figures are given and hypothesis is formulated to explain them.
 - (C) An example is given to support the conclusion drawn in the preceding paragraph.
 - (D) A statement is made, data are provided to illustrate and amplify the statement, and a conclusion is drawn.
 - (E) A generalization is made and an example is given to refute it.
9. Which of the following proposals best responds to the author's concerns?
- (A) The government should manipulate the size of the labor force to prevent future recessions.
 - (B) The government should maintain some controls over the economy, but it should allow the employment rate to rise and fall with the gross national product, as a check on labor costs.
 - (C) People should accept that unemployment is undesirable but unavoidable.
 - (D) The government should manage the economy carefully.
 - (E) The government should not interfere in the interplay among the three forces

affecting unemployment.

10. Which of the following best summarizes the main idea of the passage?
- (A) We can and must take steps to ensure that the unemployment rate does not continue to rise as our population and our use of technology increase.
 - (B) Increases in potential production must be matched by increases in demand in order to maintain steady full employment.
 - (C) High unemployment is not an inevitable result of the pace of technological change but the consequence of passive public policy.
 - (D) If part of the national purpose is to reduce and contain unemployment, arithmetic is not enough.
 - (E) Full employment, regardless of fluctuations in the economy, is within the realm of possibility.

Passage 91 (6/15)

A majority taken collectively may be regarded as a being whose opinions and, most frequently, whose interests are opposed to those of another being, which is styled a minority. If it is admitted that a man possessing absolute power may misuse that power by wronging his adversaries, why should a majority not be liable to the same reproach? Men are not apt to change their characters by agglomeration; nor does their patience in the presence of obstacles increase with the consciousness of their strength. For these reasons we should not willingly invest any group of our fellows with that unlimited authority which we should refuse to any individual.

One social power must always predominate over others, but liberty is endangered when this power is checked by no obstacles which may retard its course and force it to moderate its own vehemence. Unlimited power is in itself a bad and dangerous thing, and no power on earth is so worthy of honor for itself or of reverential obedience to the rights which it represents that we should admit its uncontrolled and all-predominant authority. When the right and means of absolute command are conferred on a people or a king, on an aristocracy or a democracy, a monarchy or a republic, there has been implanted the germ of tyranny.

The main evil of the present democratic institutions of the United States does not arise, as is often asserted in Europe, from their weakness, but from their overpowering strength; the excessive liberty which reigns in that country is not so alarming as is the very inadequate security which exists against tyranny.

When an individual or a party is wronged in the United States, to whom can he apply for redress? If to the public opinion, public opinion constitutes the majority; if to the legislature, it represents the majority and implicitly obeys its injunctions; if to the executive power, it is appointed by the majority and remains a passive tool in its hands; the public troops consist of the majority under arms; the jury is the majority invested with the right of hearing judicial cases, and in certain states even the judges are elected by the majority. However iniquitous or absurd the evil complained about, no sure barrier is established to defend against it.

1. Which of the following would be the most appropriate title for the passage?
 - (A) The Tyranny of the Majority
 - (B) Democracy: Triumph of the People
 - (C) Abuses of Power
 - (D) The Failure of Democracy in the United States
 - (E) Minority Rights
2. Which of the following best paraphrases the author's statement in the third sentence of paragraph 1 (lines 7-11)?
 - (A) Individuals do not change their behavior when they act in concert with others who are likeminded, and, knowing they are acting as part of the group, they are not likely to show greater restraint when opposed than they would if they were acting individually.
 - (B) Groups are not different from one another, they all show strong impatience when thwarted.
 - (C) The character of men is formed by the accumulation of their traits, and patience is not a common trait among men of strength.
 - (D) The leopard does not change its spots no matter how long it lives, and it is, and remains, patient in the presence of obstacles.
 - (E) Men change their behavior when they act in groups; they are more patient when they are in the company of their fellows than they are when they are alone.
3. With which of the following statements would the author of the passage be most likely to agree?
 - (A) Democracy is no greater defense against tyranny than is monarchy or aristocracy.
 - (B) Minority rule would probably be more responsive to the needs of all people than majority rule.
 - (C) No government should be trusted since all governments are equally tyrannical.
 - (D) Since one social power must always predominate over others, it is futile to provide checks and balances in government.
 - (E) To render itself immune to the germ of tyranny, the United States should strengthen its political institutions.
4. Which of the following, assuming that each is true, would most weaken the point that the author is making in the last two paragraphs of the passage?
 - (A) The framers of the U.S. Constitution deliberately separated the three branches of the government to prevent tyranny.
 - (B) There is not a single majority in the United States; there are many majorities, each composed of a different collection of individuals and each acting as a

- restraint on the others.
- (C) The First Amendment to the U.S. Constitution specifically guarantees the right of each citizen to petition the government for redress of grievances.
- (D) Even though the United States is not a direct democracy, all U.S. citizens have an equal opportunity to participate in political life and to hold public office.
- (E) The framers of the U.S. Constitution had two primary concerns: to prevent the government from exercising tyranny over the people and to prevent the majority from exercising tyranny over the minority.
5. The author's treatment of the topic of the passage can best be described as
- (A) ironic
- (B) neutral
- (C) logical
- (D) irreverent
- (E) diffident
6. In the passage, the author is primarily concerned with
- (A) challenging a commonly held belief
- (B) contrasting two opposing views
- (C) advocating a course of action
- (D) reconciling an apparent conflict
- (E) proposing a solution to an unrecognized problem

Passage 92 (7/15)

Although much has been written about the theological conflicts with Darwinian theory, little is known of the powerful scientific objections that modified Darwin's beliefs.

During Darwin's lifetime, the accepted theory of heredity was not Mendel's theory of particulate inheritance, which, though published, was unrecognized, but the theory of blending inheritance, which holds that forms intermediate between those of the parents result from mating. Jenkin pointed out that if a rare and favorable mutation occurred, it would soon be blended out by repeated crossings from the wild-type form. Disputing Darwin's conception of evolution as proceeding through the natural selection of those with slightly better characteristics that arose randomly, Jenkin concluded that natural selection could not account for the tremendous diversity of life, hypothesizing that large numbers of organisms mutated simultaneously in the same direction—a controlled orthogenetic process resembling a series of "special creations."

Since "special creationism" was an ideological target of his, Darwin found himself in a quandary. Although he did not abandon his theory, he admitted that natural selection played a much smaller part in evolution than he had previously claimed. He also embraced the

Lamarckian concept that acquired traits in parents are transmitted to their offspring, thus providing a mechanism by which an entire population could change in the same direction at once.

Another potent objection came from the physicists led by Lord Kelvin, who contested the assumption of previous geologists and biologists that life had existed for billions of years, if not infinitely. How, they asked, could evolution proceed by slow steps in millions of years, and how could advanced forms recently evolved show such great differences? The Kelvinists, basing their conclusion on the assumption that the sun was an incandescent liquid mass rapidly radiating heat, calculated that the age of the earth was between 20 and 40 million years.

Admitting that their calculations were correct and their premises rational, Darwin was forced to adjust this theory. He proposed that change had occurred much more rapidly in the past than in the present, where species seemed static, and that more advanced forms varied more rapidly than lower forms. This provided further reason to advocate Lamarck's theory of inheritance, because that could account for the rapid change.

Interestingly, both these retreats of Darwin were later shown to be faulty. The discovery that the sun runs on a nearly infinite amount of atomic fuel totally invalidated Kelvin's argument, Mendel was "rediscovered" in the twentieth century, when it was pointed out that the particulate nature of inheritance meant that favorable mutation not only could persist, but could rapidly become prevalent.

1. The primary purpose of the passage is to
 - (A) outline the process by which Darwin formulated and modified his theory of natural selection
 - (B) propose a new interpretation of Darwin's theory of evolution
 - (C) explain how other scientists of the time helped Darwin modify and perfect his theories
 - (D) defend Darwinian theory against the objections raised by Darwin's contemporaries in the scientific community
 - (E) discuss some of the scientific controversy that Darwin sparked and describe his response to it
2. It can be inferred from the passage that the theory of blending inheritance would predict that the offspring of
 - (A) two strains of snapdragons, one with abnormal, radically symmetrical flowers and the other with normal, bilaterally symmetrical flowers, would always have normal, bilaterally symmetrical flowers
 - (B) a white horse and a black horse would always be gray
 - (C) a man with type A blood and a woman with type B blood would always have type A, type B, or type AB blood
 - (D) a fly with large eyes and a fly with small eyes would always have one large eye and one small eye
 - (E) two pink-flowered plants would always be red or white

3. It can be inferred from the passage that “wild-type” (line 12) means
- (A) nonmutant
 - (B) rare
 - (C) abnormal
 - (D) random
 - (E) favorable
4. Which of the following, if it could be demonstrated, would tend to support the Lamarckian concept that Darwin embraced?
- (A) Human beings evolved from now-extinct animals much like chimpanzees as a result of an erratic accumulation of changes in the gene pool through thousands of generations.
 - (B) Some parental traits disappear in offspring and reappear in the following generation.
 - (C) All species of organisms were immutably created in their present forms.
 - (D) Rats who have had their tails cut off produce tailless offspring.
 - (E) Those hereditary traits that make their owners more likely to grow up and reproduce become increasingly common in a population from one generation to the next.
5. The author’s attitude toward Jenkin and Kelvin can best be described as
- (A) respectful
 - (B) contemptuous
 - (C) ambivalent
 - (D) denunciatory
 - (E) adulatory
6. According to the passage, Darwin modified his beliefs in order to
- (A) bring them into line with the theory of particulate inheritance
 - (B) disprove Lord Kelvin’s view on the age of the earth
 - (C) meet the objections of Jenkin and Lamarck
 - (D) resolve theological conflicts about evolution
 - (E) dissociate himself from those who believed in “special creationism” (line 21)
7. The author sets off the word “rediscovered” (line 51) in quotation marks in order to
- (A) emphasize that major scientific theories are rarely acknowledged or accepted when they are first promulgated
 - (B) indicate that the term is somewhat ironic, since Mendel’s work was virtually ignored when it was published
 - (C) rebuke the scientific community for deliberately suppressing Mendel’s work until long after his death

- (D) underscore the similarity between Mendel's theory of particulate inheritance and the theory of blending inheritance that was accepted during his lifetime
- (E) suggest that a scientist of Darwin's stature should have read Mendel's work when it was first published and immediately recognized its importance
8. It can be inferred from the passage that if Mendel's work had been recognized and accepted during Darwin's lifetime, it would have had which of the following effect?
- I. It would have refuted Jenkin's objections to Darwin's theories.
- II. It would have supported Darwin's theory that evolution proceeds by very slow steps over millions of years.
- III. It would have clarified and supported Darwin's theory of natural selection.
- (A) I only
- (B) III only
- (C) I and III only
- (D) II and III only
- (E) I, II, and III
9. All of the following can be reasonably inferred from the passage EXCEPT:
- (A) The idea that evolution occurs by means of natural selection was not widely accepted until the twentieth century.
- (B) Darwin's theories were originally predicated on the assumption that the earth is more than 40 million years old.
- (C) Many of Darwin's ideas about heredity were later shown to be incorrect.
- (D) Other scientists of Darwin's time, including both Jenkin and Lamarck, believed in evolution.
- (E) Darwin was the only scientist of his day who believed in natural selection.

Passage 93 (8/15)

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

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

primitive ancestors did.

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

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

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

1. The primary purpose of the passage is to
 - (A) explain why prevention is the best defense against obesity
 - (B) criticize the food and advertising industries for encouraging bad eating habits and thus contributing to the prevalence of obesity in the United States
 - (C) recruit volunteers for a national crusade against obesity
 - (D) discourage dependency on fad diets as a method for losing weight
 - (E) argue that obesity is a genetic disorder that is virtually impossible to cure
2. By the rule of thumb mentioned in the passage, which of the following would be considered obese?
 - I. A 25-pound toddler whose desirable weight is 20 pounds
 - II. A large-framed woman weighting 140 pounds whose desirable weight for her height is between 112 and 120 pounds
 - III. A 175-pound man who was 25 pounds over his desirable weight and then gained an additional 10 pounds
 - (A) II only
 - (B) III only
 - (C) I and III only

- (D) II and III only
(E) I, II, and III
3. Which of the following, if true, best helps to explain why a greater percentage of women than men in the United States are considered obese by the measure mentioned in the passage?
- (A) The measure is the same for both men and women, but it is normal for women to carry a greater percentage of fat at any weight.
(B) The average man is heavier than the average woman; therefore, men generally need to gain more weight than women do before they are considered obese.
(C) There are more women in the United States than there are men.
(D) Because of the influence of the fashion and film industries, many American women consider themselves obese even though they are not.
(E) Women burn off fewer calories than men because their bodies contain a lower percentage of muscle, and muscle burns calories at a faster rate than fat.
4. According to the passage, modern humans do not need to store as much fat as primitive humans because
- (A) modern humans work fewer hours than their primitive forebears did
(B) the diet of modern humans is higher in protein than was the diet of primitive humans
(C) modern humans eat more regularly than primitive humans did
(D) primitive humans had to insulate their bodies from the cold whereas modern humans do not
(E) the food consumed by modern humans has a higher nutritional value than that consumed by primitive humans
5. All of the following statements about protein are supported by the passage EXCEPT:
- (A) Gram for gram, foods that are high in protein are lower in calories than foods that are high in fat.
(B) The body gets all of its nitrogen from protein.
(C) Nine grams of protein yield the same number of calories as 4 grams of fat.
(D) Protein is not converted into adipose tissue.
(E) Five grams of protein carry 20 grams of water.
6. The author mentions that “cancer is more curable” (line 27) than obesity in order to
- (A) underscore the point that obesity is the leading disease in the United States
(B) support the conclusion that it is easier to keep people from becoming obese than it is to cure them once they are
(C) discourage obese people from trying to lose weight

- (D) demonstrate by analogy that more money should be spent on obesity research
(E) refute the contention that the causes of obesity are purely physiological
7. The passage contains information that answers which of the following questions?
(A) What percent of the total population in the United States is obese?
(B) What psychological factors cause people to gain weight rapidly once they go off a diet?
(C) What function does nitrogen perform in the body?
(D) How is an individual's desirable weight determined?
(E) If a snack bar contains 130 calories and 4 grams of fat, what percentage of the calories in the bar come from fat?
8. The author mentions all of the following as factors that cause obese people to abandon diets EXCEPT
(A) depression
(B) increased lipid synthesis
(C) a negative nitrogen balance
(D) enervation
(E) a lower metabolic rate
9. Which of the following, if it could be demonstrated, would most strengthen the claim that the feeding patterns of children "can determine the adolescent and adult eating habits those children will develop" (lines 55-56)?
(A) The incidence of obesity in children whose parents are both obese is 80 percent.
(B) Thirty-six percent of infants who are obese during their first half year of life are also overweight between the ages of 20 and 36.
(C) Excessive weight gain during the teen years can set the stage for a lifetime battle against the bulge.
(D) Up to 80 percent of youngsters who are fat as 5-year-olds end up fat as adults.
(E) The average child witnesses more than 15,000 commercials a year for snacks, candy, and soft drinks laden with fat, sugar, and calories.

Passage 94 (9/15)

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

The ancient Greeks had conceived of the world in concrete terms, even endowing abstract qualities with bodies. This Greek view of matter persisted, so far as painting was concerned, into the nineteenth century. The Impressionists, on the other hand, viewed light, not matter, as the ultimate visual reality. The philosopher Taine expressed the Impressionist view of things

when he said, "The chief 'person' in a picture is the light in which everything is bathed."

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

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

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

1. The author of the passage is primarily concerned with
 - (A) explaining how the Impressionists were influenced by scientific studies of light and color
 - (B) discussing the philosophical implications of the Impressionist style of painting
 - (C) identifying the revolutionary artistic techniques developed by the Impressionist painters
 - (D) analyzing the influence of thinkers like Taine and Mauclair on Impressionist painting
 - (E) defending the importance of the Impressionist painters in the history of modern art
2. According to the passage, the Impressionists differed from the ancient Greeks in that the Impressionists
 - (A) considered color to be property inherent in objects
 - (B) placed a higher value on the narrative element in painting
 - (C) depicted the objects in a painting as isolated, rather than united in a single pattern
 - (D) treated light, rather than matter, as the ultimate reality
 - (E) regarded art primarily as a medium for expressing moral and aesthetic ideas
3. The author's quotation of a statement by Taine (lines 15-16) serves which of the following functions in the passage?

- (A) It furnishes a specific example of an Impressionist painting that features light as its chief subject.
 - (B) It resolves an apparent contradiction in the philosophy of the Impressionists.
 - (C) It qualifies the statement that the ancient Greeks viewed the world in concrete terms.
 - (D) It summarizes the unique perspective that the Impressionists brought to painting.
 - (E) It provides a concrete illustration of the far-reaching philosophical implications of Impressionism.
4. According to the passage, the Impressionists believed that the atmosphere
- (A) reflects light with varying intensity
 - (B) creates the illusion of color in colorless surfaces
 - (C) modifies the shapes of objects
 - (D) is the result of vibrations of light
 - (E) affects the way we perceived color
5. The author's use of the term "mosaic of colors" (line 32) suggests that Impressionist paintings were characterized by
- (A) discontinuous dabs of unmixed pigment
 - (B) broad, sweeping brush strokes
 - (C) clearly defined forms and objects
 - (D) subjects devoid of emotive or literary qualities
 - (E) the glowing reds, greens, and midnight blues of stained glass
6. The passage contains information that answers which of the following questions?
- I. How did the Impressionists perceive matter?
 - II. What is the unifying element in a typical Impressionist painting?
 - III. How did the Impressionists' view of color differ from that of eighteenth-century artists?
- (A) I only
 - (B) III only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
7. The ideas attributed to the Impressionists in the passage suggest that an Impressionist painter would be most likely to agree with which of the following statement?
- (A) A picture is significant primarily as a manifestation of the artist's mental state.
 - (B) The highest purpose of art is to teach religious truths.

- (C) The quality of a picture has nothing to do with the nature of the objects it depicts.
- (D) An artist should strive to recreate on canvas the inner nature of objects from real life.
- (E) It is futile to attempt to paint pictures that aim to copy the optical appearance of the world.

Passage 95 (10/15)

Radiation occurs from three natural sources: radioactive material in the environment, such as in soil, rock, or building materials; cosmic rays; and substances in the human body, such as radioactive potassium in bone and radioactive carbon in tissues. These natural sources account for an exposure of about 100 millirems a year for the average American.

The largest single source of man-made radiation is medical X rays, yet most scientists agree that hazards from this source are not as great as those from weapons test fallout, since strontium 90 and carbon 14 become incorporated into the body, hence delivering radiation for an entire lifetime. The issue is, however, by no means uncontroversial. The last two decades have witnessed intensified examination and dispute about the effects of low-level radiation, beginning with the United Nations Scientific Committee on the Effects of Atomic Radiation, which reported in 1958 that "even the smallest amounts of radiation are likely to cause deleterious genetic and perhaps also somatic effects."

A survey conducted in Britain confirmed that an abnormally high percentage of patients suffering from arthritis of the spine who had been treated with X rays contracted cancer. Another study revealed a high incidence of childhood cancer in cases where the mother had been given prenatal pelvic X rays. These studies have pointed to the need to reexamine the assumption that exposure to low-linear energy transfer presents only a minor risk.

Recently, examination of the death certificates of former employees of a West Coast plant that produces plutonium for nuclear weapons revealed markedly higher rates for cancers of the pancreas, lung, bone marrow, and lymphatic system than would have been expected in a normal population.

While the National Academy of Sciences committee attributes this difference to chemical or other environmental causes rather than radiation, other scientists maintain that any radiation exposure, no matter how small, leads to an increase in cancer risk. It is believed by some that a dose of one rem, if sustained over many generations, would lead to an increase of 1 percent in the number of serious genetic defects at birth, a possible increase of 1,000 disorders per million births.

In the meantime, regulatory efforts have been disorganized, fragmented, inconsistent, and characterized by internecine strife and bureaucratic delays. A Senate report concluded that coordination of regulation among involved departments and agencies was not possible because of jurisdictional disputes and confusion. One federal agency has been unsuccessful in its efforts to obtain sufficient funding and manpower for the enforcement of existing radiation laws, and the chairperson of a panel especially created to develop a coordinated federal program has resigned.

1. The primary purpose of the passage is to
 - (A) explain the difference between natural and man-made radiation
 - (B) arouse concern about the risks connected with exposure to radiation
 - (C) criticize the United Nations Scientific Committee on the Effects of Atomic Radiation
 - (D) advocate limiting the use of atomic weapons testing, since the fallout is extremely hazardous
 - (E) publicize the results of British medical survey
2. Which of the following, according to the passage, is a list of three natural sources of radiation?
 - (A) Radioactive potassium in bone, strontium 90, uranium ore
 - (B) Carbon 14 in tissues, cosmic rays, X rays
 - (C) Cosmic rays, radioactive potassium in bones, radioactive carbon in tissues
 - (D) Plutonium, radioactive material in rock, strontium 90
 - (E) X rays, carbon 14, plutonium
3. Which of the following does the author cite in support of the quotation from the United Nations Scientific Committee on the Effects of Atomic Radiation (lines 18-20)?
 - I. Strontium 90 and carbon 14 become incorporated into the body and deliver radiation for an entire lifetime.
 - II. An abnormally high percentage of patients with arthritis of the spine who were treated with X rays subsequently contracted cancer.
 - III. A high incidence of cancer appeared among children of mothers who had been given prenatal pelvic X rays.
 - (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
4. The passage contains information that answers which of the following questions?
 - (A) How many millirems of radiation from man-made sources is the average American exposed to each year?
 - (B) Is exposure to radiation linked to any other diseases besides cancer?
 - (C) How many types of radiation are there?
 - (D) What is the maximum level of radiation to which humans can safely be exposed?
 - (E) Why is exposure to the fallout from weapons testing considered by some to be more hazardous than exposure to X rays?

5. According to the passage, some scientists believe that a dose of one rem of radiation continued over a period of generations would
- (A) raise the strontium 90 levels in the body but otherwise have little effect
 - (B) relieve the acute suffering of those afflicted with arthritis of the spine without side effects
 - (C) have the effect of increasing by 1 percent the cases of serious genetic defects
 - (D) have little impact on the regulatory efforts of federal agencies
 - (E) cause an additional 1,000 per million cases of cancer of the bone marrow or lymphatic system
6. It can be inferred from the last paragraph of the passage that the chairperson who resigned from the panel to develop a coordinated federal program for radiation regulation most likely did so because
- (A) he or she disagreed with the findings of the Senate committee
 - (B) his or her agency could not obtain funding or manpower for implementation of existing laws
 - (C) he or she supported the position of the National Academy of Sciences committee and opposed regulation of radiation exposure
 - (D) he or she was disorganized and inconsistent in chairing the panel
 - (E) regulatory efforts have been balked by disputes, confusion, and bureaucratic delays
7. The passage contains evidence suggesting that it was most likely written
- (A) in 1958
 - (B) by a British scientist
 - (C) for the journal of the National Academy of Sciences
 - (D) by a lobbyist for the defense industry
 - (E) in the late 1970s
8. The passage implies that each of the following statements about radiation has been disputed EXCEPT?
- (A) Even small doses of radiation are likely to cause birth defects.
 - (B) Exposure to low-linear energy transfer presents only a minor risk.
 - (C) Many small doses of radiation are as harmful as a single large dose.
 - (D) Humans can tolerate a certain amount of radiation.
 - (E) Exposure to radiation causes cancer.

Passage 96 (11/15)

Many readers assume that, as a neoclassical literary critic, Samuel Johnson would normally prefer the abstract, the formal, and the regulated to the concrete, the natural, and the

spontaneous in a work of literature. Yet any close reading of Johnson's criticism shows that Johnson is not blind to the importance of the immediate, vivid, specific detail in literature; rather, he would underscore the need for the *telling* rather than the merely *accidental* detail.

In other ways, too, Johnson's critical method had much in common with that of the Romantics, with whom Johnson and, indeed, the entire neoclassical tradition are generally supposed to be in conflict. Johnson was well aware, for example, of the sterility of literary criticism that is legalistic or pedantic, as was the case with the worst products of the neoclassical school. His famous argument against the slavish following of the "three unities" of classical drama is a good example, as is his defense of the supposedly illegitimate "tragicomic" mode of Shakespeare's latest plays. Note, in particular, the basis of that defense: "That this is a practice contrary to the rules of criticism," Johnson wrote, "will be readily allowed; but there is always an appeal from criticism to nature."

The sentiment thus expressed could easily be endorsed by any of the Romantics; the empiricism it exemplifies is vital quality of Johnson's criticism, as is the willingness to jettison "laws" of criticism when to do so makes possible a more direct appeal to the emotions of the reader. Addison's *Cato*, highly praised in Johnson's day for its "correctness," is damned with faint praise by Johnson: "*Cato* affords a splendid exhibition of artificial and fictitious manners, and delivers just and noble sentiments, in diction easy, elevated, and harmonious, but its hopes and fears communicate no vibration to the heart." Wordsworth could hardly demur.

Even on the question of poetic diction, which, according to the usual interpretation of Wordsworth's 1800 preface to the *Lyrical Ballads*, was the central area of conflict between Romantic and Augustan, Johnson's views are surprisingly "modern." In his *Life of Dryden*, he defends the use of a special diction in poetry, it is true; but his reasons are all-important. For Johnson, poetic diction should serve the ends of direct emotional impact and ease of comprehension, not those of false profundity or grandiosity. "Words too familiar," he wrote, "or too remote, defeat the purpose of a poet. From those sounds which we hear on small or on coarse occasions, we do not easily receive strong impressions, or delightful images; and words to which we are nearly strangers, whenever they occur, draw that attention on themselves which they should transmit to things." If the poetic diction of the neoclassical poets, at its worst, erects needless barriers between reader and meaning, that envisioned by Johnson would do just the opposite: it would put the reader in closer contact with the "things" that are the poem's subject.

1. The author of the passage develops her points about Johnson primarily by
 - (A) contrasting Johnson's critical methods with those of his contemporaries
 - (B) citing specific illustrations drawn from Johnson's work
 - (C) alluding to contemporary comments about Johnson's theories
 - (D) quoting Johnson's remarks about the critical approaches prevalent in his own day
 - (E) emphasizing the fallacies inherent in the most common view of Johnson
2. The passage implies that the judging of literary works according to preconceived rules

- (A) tends to lessen the effectiveness of much modern literary criticism
 - (B) is the primary distinguishing mark of the neoclassical critic
 - (C) was the primary neoclassical technique against which the Romantics rebelled
 - (D) is the underlying basis of much of Johnson's critical work
 - (E) characterizes examples of the worst neoclassical criticism
3. The passage implies that the neoclassical critics generally condemned
- (A) Shakespeare's use of the "tragicomic" (line 18) literary mode
 - (B) the slavish following of the "three unities" (line 16) in drama
 - (C) attempts to judge literary merit on the basis of "correctness" (line 28)
 - (D) artificiality and abstraction in literary works
 - (E) the use of a special diction in the writing of poetry
4. According to the author, Johnson's defense of Shakespeare's latest plays illustrates Johnson's reliance on which of the following in his criticism?
- (A) The sentiments endorsed by the Romantics
 - (B) The criteria set forth by Wordsworth in his 1800 preface to the *Lyrical Ballads*
 - (C) The precedents established by the Greek and Roman playwrights of the Classical Age
 - (D) The principles followed by the neoclassical school of criticism
 - (E) His own experience and judgment
5. According to the passage, Johnson's opinion of Addison's *Cato* was
- (A) roundly condemnatory
 - (B) somewhat self-contradictory
 - (C) ultimately negative
 - (D) effusively adulatory
 - (E) uncharacteristically bold
6. According to the passage, Johnson's views on the use of a special diction in the writing of poetry were
- (A) "modern" in their rejection of a clear-cut division between the diction of poetry and that of prose
 - (B) "neoclassical" in their emphasis on the use of language that appeals directly to the emotions of the reader
 - (C) "Romantic" in their defense of the idea that a special diction for poetry could be stylistically effective
 - (D) "modern" in their underlying concern for the impact of the literary work on the sensibility of the reader
 - (E) "neoclassical" in their emphasis on ease of comprehension as a literary virtue

7. It can be inferred from the passage that in addition to being a literary critic, Johnson was also a
- (A) surprisingly modern poet
 - (B) poet in the Augustan mode
 - (C) dramatist
 - (D) biographer
 - (E) naturalist
8. Which one of the following statements best summarizes the main point of the passage?
- (A) Although many of Johnson's critical opinions resemble those of the neoclassical critics, his basic concerns are closer to those of the Romantics.
 - (B) The usual classification of Johnson as a member of the neoclassical school of criticism is based on an inaccurate evaluation of his critical theories and ideals.
 - (C) The Romantic critics were mistaken in their belief that the critical ideas they formulated represented a departure from those propounded by Johnson.
 - (D) Although many of Johnson's critical opinions resemble those of the Romantic critics, his basic concerns are closer to those of the neoclassical critics.
 - (E) Johnson's literary criticism represents an attempt to unify the best elements of the neoclassical and the Romantic schools of criticism.
9. The author of the passage is primarily concerned with
- (A) defending a reputation
 - (B) reconciling conflicting views
 - (C) comparing two schools of thought
 - (D) challenging an assumption
 - (E) presenting new evidence in support of an established theory

Passage 97 (12/15)

The idea of building "New Towns" to absorb growth is frequently considered a cure-all for urban problems. It is erroneously assumed that if new residents can be diverted from existing centers, the present urban situation at least will get no worse. It is further and equally erroneously assumed that since European New Towns have been financially and socially successful, we can expect the same sorts of results in the United States.

Present planning, thinking, and legislation will not produce the kinds of New Town that have been successful abroad. It will multiply suburbs or encourage developments in areas where land is cheap and construction profitable rather than where New Towns are genuinely needed.

Such ill-considered projects not only will fail to relieve pressures on existing cities but will, in fact, tend to weaken those cities further by drawing away high-income citizens and

increasing the concentration of low-income groups that are unable to provide tax income. The remaining taxpayers, accordingly, will face increasing burdens, and industry and commerce will seek escape. Unfortunately, this mechanism is already at work in some metropolitan areas.

The promoters of New Towns so far in the United States have been developers, builders, and financial institutions. The main interest of these promoters is economic gain. Furthermore, federal regulations designed to promote the New Town idea do not consider social needs as the European New Town plans do. In fact, our regulations specify virtually all the ingredients of the typical suburban community, with a bit of political rhetoric thrown in.

A workable American New Town formula should be established as firmly here as the national formula was in Britain. All possible social and governmental innovations as well as financial factors should be thoroughly considered and accommodated in this policy. Its objectives should be clearly stated, and both incentives and penalties should be provided to ensure that the objectives are pursued. If such a policy is developed, then the New Town approach can play an important role in alleviating America's urban problems.

1. The passage contains information that answers which of the following questions?
 - (A) Where did the idea of New Towns originate?
 - (B) How does Britain's New Town formula differ from that of other European countries?
 - (C) What is the purpose of building New Towns?
 - (D) What incentives and penalties will be necessary to make a New Town formula workable?
 - (E) Why have European New Towns been financially successful?
2. The author believes that New Towns are not being built where they are genuinely needed because
 - (A) the government offers developers incentives to build in other areas
 - (B) the promoters of New Town are motivated chiefly by self-interest
 - (C) few people want to live in areas where land is still cheap
 - (D) no studies have been done to determine the best locations
 - (E) federal regulations make construction in those areas less profitable
3. According to the author, ill-considered New Towns will tend to weaken existing cities in which of the following ways?
 - I. They will cause an erosion in the tax base of existing cities.
 - II. They will divert residents from existing cities to other areas.
 - III. They will increase the number of low-income residents in existing cities.
 - (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III

4. According to the passage, as compared with American New Towns, European New Towns have been designed with greater concern for
 - (A) social needs
 - (B) financial factors
 - (C) urban congestion
 - (D) the profits of developers and builders
 - (E) the environment
5. The author's tone in discussing "developers, builders, and financial institutions" (lines 25-26) can best be described as
 - (A) critical
 - (B) pedantic
 - (C) evasive
 - (D) captious
 - (E) vitriolic
6. It can be inferred from the passage that the author believes which of the following about suburbs?
 - (A) They are a panacea for urban problems.
 - (B) They will soon be plagued by the same problems that now plague cities.
 - (C) They are poor models for New Towns.
 - (D) They drive up property values in inner cities.
 - (E) They alleviate some, but not all, of America's urban problems.
7. It can be inferred from the passage that the author considers the present American New Town formula to be
 - (A) thoroughly considered
 - (B) insufficiently innovative
 - (C) potentially workable
 - (D) overly restrictive
 - (E) financially sound
8. The author of the passage is primarily concerned with
 - (A) arguing for a change in policy
 - (B) exploring the implications of novel idea
 - (C) comparing and contrasting two manifestations of the same phenomenon
 - (D) proposing a radically new solution to an old problem
 - (E) summarizing recent research on a topic

Passage 98 (13/15)

In reaction to a rigid, overrefined classical curriculum, some educational philosophers have

swung sharply to an espousal of “life experience” as the sole source of learning. Using their narrow interpretation of John Dewey’s theories for support and spouting such phrases as “Teach the child, not the subject,” they demand an end to rigorous study and insist that only through doing can learning take place. While not all adherents to this philosophy would totally eliminate the study of great books, the gradual subordination of literature in the school curriculum reflects their influence.

What is the purpose of literature? Why read if life alone is to be our teacher? James Joyce tells us that the artist reveals the human condition by re-creating life out of life; Aristotle, that art presents universal truths because its form is taken from nature. Thus, consciously or otherwise, great writers extend our understanding of ourselves and our world. We can soar with them to the heights of aspiration or plummet with them to the depths of despair. How much wider is the understanding we gain from reading than from viewing life through the keyhole of our individual experience.

This function of literature, the enlarging of our life sphere, is of major importance in itself. Additionally, however, literature suggests solutions to social problems. The overweening ambitions of political leaders—and their sneering contempt for the law—did not appear for the first time in the writings of Bernstein and Woodward. The problems and behavior of the guilt-ridden did not await the appearance of the bearded psychoanalysts of the nineteenth century.

Federal Judge Learned Hand wrote, “I venture to believe that it is as important to a judge called upon to pass on a question of constitutional law, to have at least a bowing acquaintance with Thucydides, Gibbon, and Carlyle, with Homer, Dante, Shakespeare, and Milton, with Montaigne and Rabelais, with Plato, Bacon, Hume, and Kant, as with the books which have been specifically written on the subject. For in such matters everything turns upon the spirit in which he approaches the questions before him.”

How do we overcome our dissenter? We must start with the field of agreement: the belief that education should serve to improve the individual and society. We must persuade our dissenters that the voices of human experience stretch our human faculties and open us to learning. We must convince them of the unity of life and art. We must prove to them that far from being separate, literature is that part of life that illumines life.

1. The primary purpose of the passage is to
 - (A) list the writers who make up the backbone of a great literature curriculum
 - (B) explain the function of literature
 - (C) advocate the adoption of a new philosophy of education
 - (D) plead for the retention of great literature as a fundamental part of the school curriculum
 - (E) overcome the opposition of Dewey’s followers to the inclusion of contemporary literature in the curriculum
2. It can be inferred from the passage that the author considers those who believe in “‘life experience’ as the sole source of learning” (line 3) to be
 - (A) practical

- (B) progressive
 - (C) misguided
 - (D) inflexible
 - (E) ignorant
3. Based on the information in the passage, with which of the following statements about education would John Dewey be most likely to agree?
- (A) Education should be a continuous reconstruction of living experience, with the child the center of concern.
 - (B) Education is the imparting of knowledge, not the drawing out of what is already in the child.
 - (C) Though rigid, the classical curriculum has served us well for centuries and should be restored.
 - (D) The purpose of education is to correct the inequalities brought about by the rise of civilization.
 - (E) Children should be taught only the skills and knowledge they need to get ahead.
4. The author implies that children who learn exclusively by doing are likely to
- (A) be good problem solvers but poor judges
 - (B) be more guilt-ridden than those who learn both by doing and reading
 - (C) have below-average reading skills
 - (D) believe that art has nothing to do with life
 - (E) have a myopic view of themselves and the world
5. Which of the following best describes the organization of the third paragraph of the passage?
- (A) An idea is reiterated, a new idea is introduced, and two supporting examples are given.
 - (B) The preceding paragraph is summarized and conclusions are drawn.
 - (C) A new idea is introduced, the idea is qualified, and the implications of the idea are analyzed.
 - (D) The main idea of the preceding paragraph is restated, and evidence is given to support it.
 - (E) Two functions of literature are identified, and an example of each is given.
6. The author quotes Judge Learned Hand (lines 32-41 primarily in order to
- (A) call attention to the writing of Thucydides and Carlyle
 - (B) support the point that literature broadens the reader's understanding
 - (C) point out that constitutional law is a part of the great literature of the past
 - (D) show that everyone, including judges, enjoys reading
 - (E) give specific examples of writers who have suggested solutions to social

problems

7. Which of the following could best be substituted for the words “the subject” (line 39) in the quotation from Judge Hand without altering the meaning of the quotation?
- (A) The question of constitutional law before the judge
 - (B) The contempt of political leaders for the law
 - (C) Social problems
 - (D) The liberal arts, specifically history, literature, and philosophy
 - (E) The human condition
8. The passage supplies information to suggest that the author and the educational philosophers mentioned in the first paragraph would agree that
- (A) learning is the key to adaptability in an ever-changing environment
 - (B) the traditional classroom should be transformed into a learning laboratory
 - (C) the purpose of education is to improve society as well as the individual
 - (D) one must know history in order to understand the present and the future
 - (E) the primary aim of education is the transmission of culture
9. It can be inferred from the passage that the author makes which of the following assumptions about his readers?
- (A) They believe that schools should reflect society.
 - (B) They believe that the subject, not the child, should be taught.
 - (C) They favor a return to the classical curriculum.
 - (D) They share his view that the study of great books is essential to education.
 - (E) They believe that only through reading can learning take place.

Passage 99 (14/15)

Methods for typing blood were developed around the turn of the century, about the same time that fingerprints were first used for identification. Only in the last decade or two, however, have scientists begun to believe that genetic markers in blood and other bodily fluids may someday prove as useful in crime detection as fingerprints.

The standard ABO blood typing has long been used as a form of negative identification. Added sophistication came with the discovery of additional subgroups of genetic markers in blood and with the discovery that genetic markers are present not only in blood but also in other bodily fluids, such as perspiration and saliva.

These discoveries were of little use in crime detection, however, because of the circumstances in which police scientists must work. Rather than a plentiful sample of blood freshly drawn from a patient, the crime laboratory is likely to receive only a tiny fleck of dried blood of unknown age from an unknown “donor” on a shirt or a scrap of rag that has spent hours or days exposed to air, high temperature, and other contaminants.

British scientists found a method for identifying genetic markers more precisely in small samples. In this process, called electrophoresis, a sample is placed on a tray containing a gel through which an electrical current is then passed. A trained analyst reads the resulting patterns in the gel to determine the presence of various chemical markers.

Electrophoresis made it possible to identify several thousand subgroups of blood types rather than the twelve known before. However, the equipment and special training required were expensive. In addition, the process could lead to the destruction of evidence. For example, repeated tests of a blood-flecked shirt—one for each marker—led to increasing deterioration of the evidence and the cost of a week or more of laboratory time.

It remained for another British researcher, Brian Wrexall, to demonstrate that simultaneous analyses, using an inexpensive electrophoresis apparatus, could test for ten different genetic markers within a 24-hour period. This development made the study of blood and other fluid samples an even more valuable tool for crime detection.

1. The author of the passage is primarily concerned with describing
 - (A) how advances in crime detection methods have led to new discoveries in science
 - (B) various ways in which crime detection laboratories assist the police
 - (C) the development of new scientific tools for use in crime detection
 - (D) areas of current research in the science of crime detection
 - (E) developments in genetic research and their application to crime detection
2. It can be inferred from the passage that electrophoresis resembles fingerprinting in that both
 - (A) provide a form of negative identification in crime detection
 - (B) were first developed by British scientists
 - (C) may be used to help identify those who were present at the time of a crime
 - (D) were developed by scientists at around the same time
 - (E) must be employed almost immediately after a crime to be effective
3. The author sets off the word “donor” (line 18) with quotation marks in order to
 - (A) emphasize that most of the blood samples received by crime laboratories come from anonymous sources
 - (B) underscore the contrast between the work done in a crime laboratory and that done in a blood bank
 - (C) call attention to the fact that, because of underfunding, crime laboratories are forced to rely on charitable contributions
 - (D) show that the word is being used in a technical, rather than a general, sense
 - (E) indicate that the blood samples received by crime laboratories are not given freely
4. The passage contains information that would answer which of the following questions?

- (A) Is evidence of genetic markers in bodily fluids admissible in court?
- (B) Can electrophoresis be used to identify genetic markers in saliva?
- (C) How many subgroups of blood types are currently identifiable?
- (D) How accurate is the process of electrophoresis?
- (E) How many tests for genetic markers must police scientists run in order to establish the identity of a criminal?
5. According to the passage, all of the following may reduce the usefulness of a fluid sample for crime detection EXCEPT
- (A) the passage of time
- (B) discoloration or staining
- (C) exposure to heat
- (D) the small size of the sample
- (E) exposure to contaminants
6. The passage implies that electrophoresis may help scientists determine
- (A) whether or not a sample of blood could have come from a particular person
- (B) the age and condition of a dried specimen of blood or other bodily fluid
- (C) when and where a crime was probably committed
- (D) the cause of death in homicide cases
- (E) the age, gender, and ethnic background of an unknown criminal suspect
7. According to the passage, Brian Wrexall's refinement of electrophoresis led to
- (A) more accurate test results
- (B) easier availability of fluid samples
- (C) wider applicability of genetic analysis
- (D) increased costs of testing
- (E) more rapid testing
8. Which of the following statements about genetic markers can be inferred from the passage?
- I. They carry an electrical charge.
- II. They cannot be identified through standard ABO blood typing.
- III. They were of no use in crime detection before the invention of electrophoresis.
- (A) I only
- (B) II only
- (C) III only
- (D) II and III only
- (E) I, II, and III

Passage 100 (15/15)

The delegates to the Constitutional Convention were realists. They knew that the greatest battles would take place after the convention, once the Constitution had already been drafted and signed. The delegates had overstepped their bounds. Instead of amending the Articles of Confederation by which the American states had previously been governed, they had proposed an entirely new government. Under these circumstances, the convention was understandably reluctant to submit its work to the Congress for approval.

Instead, the delegates decided to pursue what amounted to a revolutionary course. They declared that ratification of the new Constitution by nine states would be sufficient to establish the new government. In other words, the Constitution was being submitted directly to the people. Not even the Congress, which had called the convention, would be asked to approve its work.

The leaders of the convention shrewdly wished to bypass the state legislatures, which were attached to states' rights and which required in most cases the agreement of two houses. For speedy ratification of the Constitution, the single-chambered, specially elected state ratifying conventions offered the greatest promise of agreement.

Battle lines were quickly drawn. The Federalists, as the supporters of the Constitution were called, had one solid advantage: they came with a concrete proposal. Their opponents, the Antifederalists, came with none. Since the Antifederalists were opposing something with nothing, their objections, though sincere, were basically negative. They stood for a policy of drift while the Federalists were providing clear leadership.

Furthermore, although the Antifederalists claimed to be the democratic group, their opposition to the Constitution did not necessarily spring from a more democratic view of government. Many of the Antifederalists were as distrustful of the common people as their opponents. In New York, for example, Governor George Clinton criticized the people for their fickleness and their tendency to "vibrate from one extreme to another." Elbridge Gerry of Massachusetts, who refused to sign the Constitution, asserted that "the evils we experience flow from the excess of democracy," and John F. Mercer of Maryland professed little faith in his neighbors as voters when he said that "the people cannot know and judge the character of candidates."

1. The author is primarily concerned with
 - (A) contrasting the opposing sides in a battle
 - (B) analyzing the effects of an event
 - (C) urging a reassessment of history
 - (D) criticizing the opponents of a plan
 - (E) describing the background of conflict
2. According to the passage, the delegates to the Constitutional Convention did not submit their work to Congress for approval because
 - (A) they knew that most members of congress would want to broaden the powers of the national government

- (B) it was unclear whether Congress had the legal right to offer or withhold such approval
 - (C) they considered it more democratic to appeal directly to the citizens of the separate states
 - (D) they believed that Congress would not accept the sweeping changes they had proposed
 - (E) Congress was dominated by a powerful group of Antifederalist leaders
3. According to the passage, in contrast to most state legislatures, state ratifying conventions were
- (A) elected
 - (B) unicameral
 - (C) characterized by strong leadership
 - (D) nearly unanimous in their support of the new Constitution
 - (E) opposed to states' rights
4. The author characterizes the leaders of the Constitutional Convention as
- (A) shrewd and visionary
 - (B) liberal and enlightened
 - (C) radical and idealistic
 - (D) clever and pragmatic
 - (E) eloquent and persuasive
5. In stating that the Antifederalists “were opposing something with nothing” (line 28), the author suggests that the Antifederalists
- (A) based most of their arguments on their antidemocratic sentiments
 - (B) lacked leaders who were as articulate as the Federalist leaders
 - (C) were unable to rally significant support for their position among the populace
 - (D) had few reasonable arguments to put forth in support of their position
 - (E) offered no alternative plan of government of their own
6. Which of the following statements about Elbridge Gerry can be inferred from the passage?
- (A) He was a delegate to the Massachusetts state ratifying convention.
 - (B) He was a delegate to the Constitutional Convention.
 - (C) He was the architect of the “policy of drift” (line 30) advocated by the Antifederalists.
 - (D) He claimed to have a more democratic view of government than the Federalists.
 - (E) He was one of the leaders of the Antifederalist Party.
7. The author’s quotation of John F. Mercer (lines 43-45) serves which of the

following functions in the passage?

- (A) It summarizes the last paragraph.
 - (B) It furnishes a concrete example.
 - (C) It articulates the main point of the passage.
 - (D) It clarifies the preceding quotation.
 - (E) It expresses a general conclusion.
8. Which of the following would be the most appropriate title for the passage?
- (A) Divided Leadership at the Constitutional Convention
 - (B) How the Constitution Became Law
 - (C) The U.S. Constitution: Its Strengths and Weaknesses
 - (D) The Battle for Ratification of the Constitution
 - (E) The Views of the Antifederalists on Democracy

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Passage 101 (1/17)

Two recent publications offer different assessment of the career of the famous British nurse Florence Nightingale. A book by Anne Summers seeks to debunk the idealizations and present a reality at odds with Nightingale's heroic reputation. According to Summers, Nightingale's importance during the Crimean War has been exaggerated: not until near the war's end did she become supervisor of the female nurses. Additionally, Summers writes that the contribution of the nurses to the relief of the wounded was at best marginal. The prevailing problems of military medicine were caused by army organizational practices, and the addition of a few nurses to the medical staff could be no more than symbolic. Nightingale's place in the national pantheon, Summers asserts, is largely due to the propagandistic efforts of contemporary newspaper reporters.

By contrast, the editors of a new volume of Nightingale's letters view Nightingale as a person who significantly influenced not only her own age but also subsequent generations. They highlight her ongoing efforts to reform sanitary conditions after the war. For example, when she learned that peacetime living conditions in British barracks were so horrible that the death rate of enlisted men far exceeded that of neighboring civilian populations, she succeeded in persuading the government to establish a Royal Commission on the Health of the Army. She used sums raised through public contributions to found a nurses' training hospital in London. Even in administrative matters, the editors assert, her practical intelligence was formidable: as recently as 1947 the British Army's medical services were still using the cost-accounting system she had devised in the 1860's.

I believe that the evidence of her letters supports continued respect for Nightingale's brilliance and creativity. When counseling a village schoolmaster to encourage children to use their faculties of observation, she sounds like a modern educator. Her insistence on classifying the problems of the needy in order to devise appropriate treatments is similar to the approach

of modern social workers. In sum, although Nightingale may not have achieved all of her goals during the Crimean War, her breadth of vision and ability to realize ambitious projects have earned her an eminent place among the ranks of social pioneers.

73. The passage is primarily concerned with evaluating
- (A) the importance of Florence Nightingale's innovations in the field of nursing
 - (B) contrasting approaches to the writing of historical biography
 - (C) contradictory accounts of Florence Nightingale's historical significance
 - (D) the quality of health care in nineteenth-century England
 - (E) the effect of the Crimean War on developments in the field of health care
74. According to the passage, the editors of Nightingale's letters credit her with contributing to which of the following?
- (A) Improving of the survival rate for soldiers in British Army hospitals during the Crimean War
 - (B) The development of a nurses' training curriculum that was far in advance of its day
 - (C) The increase in the number of women doctors practicing in British Army hospitals
 - (D) Establishment of the first facility for training nurses at a major British university
 - (E) The creation of an organization for monitoring the peacetime living conditions of British soldiers
75. The passage suggests which of the following about Nightingale's relationship with the British public of her day?
- (A) She was highly respected, her projects receiving popular and governmental support.
 - (B) She encountered resistance both from the army establishment and the general public.
 - (C) She was supported by the working classes and opposed by the wealthier classes.
 - (D) She was supported by the military establishment but had to fight the governmental bureaucracy.
 - (E) After initially being received with enthusiasm, she was quickly forgotten.
76. The passage suggests which of the following about sanitary conditions in Britain after the Crimean War?
- (A) While not ideal, they were superior to those in other parts of the world.
 - (B) Compared with conditions before the war, they had deteriorated.
 - (C) They were more advanced in rural areas than in the urban centers.
 - (D) They were worse in military camps than in the neighboring civilian populations.

- (E) They were uniformly crude and unsatisfactory throughout England.
77. Which of the following statements regarding the differing interpretations of Nightingale's importance would the author most likely agree?
- (A) Summers misunderstood both the importance of Nightingale's achievements during the Crimean War and her subsequent influence on British policy.
- (B) The editors of Nightingale's letters made some valid points about her practical achievements, but they still exaggerated her influence on subsequent generations.
- (C) Although Summers' account of Nightingale's role in the Crimean War may be accurate, she ignored evidence of Nightingale's subsequent achievement that suggests that her reputation as an eminent social reformer is well deserved.
- (D) The editors of Nightingale's letters mistakenly propagated the outdated idealization of Nightingale that only impedes attempts to arrive at a balance assessment of her true role.
- (E) The evidence of Nightingale's letters supports Summers' conclusions both about Nightingale's activities and about her influence.
78. Which of the following is an assumption underlying the author's assessment of Nightingale's creativity?
- (A) Educational philosophy in Nightingale's day did not normally emphasize developing children's ability to observe.
- (B) Nightingale was the first to notice the poor living conditions in British military barracks in peacetime.
- (C) No educator before Nightingale had thought to enlist the help of village schoolmasters in introducing new teaching techniques.
- (D) Until Nightingale began her work, there was no concept of organized help for the needy in nineteenth-century Britain.
- (E) The British Army's medical services had no cost-accounting system until Nightingale devised one in the 1860's.
79. In the last paragraph, the author is primarily concerned with
- (A) summarizing the arguments about Nightingale presented in the first two paragraphs
- (B) refuting the view of Nightingale's career presented in the preceding paragraph
- (C) analyzing the weaknesses of the evidence presented elsewhere in the passage
- (D) citing evidence to support a view of Nightingale's career
- (E) correcting a factual error occurring in one of the works under review

Passage 102 (2/17)

A meteor stream is composed of dust particles that have been ejected from a parent comet at a variety of velocities. These particles follow the same orbit as the parent comet, but due to

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

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

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

80. The primary focus of the passage is on which of the following?
- (A) Comparing two scientific theories and contrasting the predictions that each would make concerning a natural phenomenon
 - (B) Describing a new theoretical model and noting that it explains the nature of observations made of a particular natural phenomenon
 - (C) Evaluating the results of a particular scientific experiment and suggesting further areas for research
 - (D) Explaining how two different natural phenomena are related and demonstrating a way to measure them
 - (E) Analyzing recent data derived from observations of an actual phenomenon and constructing a model to explain the data
81. According to the passage, which of the following is an accurate statement concerning meteor streams?
- (A) Meteor streams and comets start out with similar orbits, but only those of meteor streams are perturbed by planetary gravitation.
 - (B) Meteor streams grow as dust particles are attracted by the gravitational fields of comets.
 - (C) Meteor streams are composed of dust particles derived from comets.

- (D) Comets may be composed of several kinds of materials, while meteor streams consist only of large dust particles.
- (E) Once formed, meteor streams hasten the further disintegration of comets.
82. The author states that the research described in the first paragraph was undertaken in order to
- (A) determine the age of an actual meteor stream
- (B) identify the various structural features of meteor streams
- (C) explore the nature of a particularly interesting meteor stream
- (D) test the hypothesis that meteor streams become broader as they age
- (E) show that a computer model could help in explaining actual astronomical data
83. It can be inferred from the passage that which of the following would most probably be observed during the Earth's passage through a meteor stream if the conventional theories mentioned in line 18 were correct?
- (A) Meteor activity would gradually increase to a single, intense peak, and then gradually decline.
- (B) Meteor activity would be steady throughout the period of the meteor shower.
- (C) Meteor activity would rise to a peak at the beginning and at the end of the meteor shower.
- (D) Random bursts of very high meteor activity would be interspersed with periods of very little activity.
- (E) In years in which the Earth passed through only the outer areas of a meteor stream, meteor activity would be absent.
84. According to the passage, why do the dust particles in a meteor stream eventually surround a comet's original orbit?
- (A) They are ejected by the comet at differing velocities.
- (B) Their orbits are uncontrolled by planetary gravitational fields.
- (C) They become part of the meteor stream at different times.
- (D) Their velocity slows over time.
- (E) Their ejection velocity is slower than that of the comet.
85. The passage suggests that which of the following is a prediction concerning meteor streams that can be derived from both the conventional theories mentioned in line 18 and the new computer-derived theory?
- (A) Dust particles in a meteor stream will usually be distributed evenly throughout any cross section of the stream.
- (B) The orbits of most meteor streams should cross the orbit of the Earth at some point and give rise to a meteor shower.
- (C) Over time the distribution of dust in a meteor stream will usually become denser at the outside edges of the stream than at the center.

- (D) Meteor showers caused by older meteor streams should be, on average, longer in duration than those caused by very young meteor streams.
- (E) The individual dust particles in older meteor streams should be, on average, smaller than those that compose younger meteor streams.
86. It can be inferred from the last paragraph of the passage that which of the following must be true of the Earth as it orbits the Sun?
- (A) Most meteor streams it encounters are more than 2,000 years old.
- (B) When passing through a meteor stream, it usually passes near to the stream's center.
- (C) It crosses the Geminid meteor stream once every year.
- (D) It usually takes over a day to cross the actual Geminid meteor stream.
- (E) It accounts for most of the gravitational perturbation affecting the Geminid meteor stream.
87. Which of the following is an assumption underlying the last sentence of the passage?
- (A) In each of the years between 1970 and 1979, the Earth took exactly 19 hours to cross the Geminid meteor stream.
- (B) The comet associated with the Geminid meteor stream has totally disintegrated.
- (C) The Geminid meteor stream should continue to exist for at least 5,000 years.
- (D) The Geminid meteor stream has not broadened as rapidly as the conventional theories would have predicted.
- (E) The computer-model Geminid meteor stream provides an accurate representation of the development of the actual Geminid stream.

Passage 103 (3/17)

The new school of political history that emerged in the 1960's and 1970's sought to go beyond the traditional focus of political historians on leaders and government institutions by examining directly the political practices of ordinary citizens. Like the old approach, however, this new approach excluded women. The very techniques these historians used to uncover mass political behavior in the nineteenth-century United States—quantitative analyses of election returns, for example—were useless in analyzing the political activities of women, who were denied the vote until 1920.

By redefining "political activity," historian Paula Baker has developed a political history that includes women. She concludes that among ordinary citizens, political activism by women in the nineteenth century prefigured trends in twentieth-century politics. Defining "politics" as "any action taken to affect the course of behavior of government or of the community," Baker concludes that, while voting and holding office were restricted to men, women in the nineteenth century organized themselves into societies committed to social issues such as temperance and poverty. In other words, Baker contends, women activists were early

practitioners of nonpartisan, issue-oriented politics and thus were more interested in enlisting lawmakers, regardless of their party affiliation, on behalf of certain issues than in ensuring that one party or another won an election. In the twentieth century, more men drew closer to women's ideas about politics and took up modes of issue-oriented politics that Baker sees women as having pioneered.

131. The primary purpose of the passage is to
- (A) enumerate reason why both traditional scholarly methods and newer scholarly methods have limitations
 - (B) identify a shortcoming in a scholarly approach and describe an alternative approach
 - (C) provide empirical data to support a long-held scholarly assumption
 - (D) compare two scholarly publications on the basis of their authors' backgrounds
 - (E) attempt to provide a partial answer to a long-standing scholarly dilemma
132. The passage suggests which of the following concerning the techniques used by the new political historians described in the first paragraph of the passage?
- (A) They involved the extensive use of the biographies of political party leaders and political theoreticians.
 - (B) They were conceived by political historians who were reacting against the political climates of the 1960s and 1970s.
 - (C) They were of more use in analyzing the positions of United States political parties in the nineteenth century than in analyzing the positions of those in the twentieth century.
 - (D) They were of more use in analyzing the political behavior of nineteenth-century voters than in analyzing the political activities of those who could not vote during that period.
 - (E) They were devised as a means of tracing the influence of nineteenth-century political trends on twentieth-century political trends.
133. It can be inferred that the author of the passage quotes Baker directly in the second paragraph primarily in order to
- (A) clarify a position before providing an alternative of that position
 - (B) differentiate between a novel definition and traditional definitions
 - (C) provide an example of a point agreed on by different generations of scholars
 - (D) provide an example of the prose style of an important historian
 - (E) amplify a definition given in the first paragraph
134. According to the passage, Paula Baker and the new political historians of the 1960's and 1970's shared which of the following?
- (A) A commitment to interest-group politics
 - (B) A disregard for political theory and ideology
 - (C) An interest in the ways in which nineteenth-century politics prefigured

- contemporary politics
- (D) A reliance on such quantitative techniques as the analysis of election returns
- (E) An emphasis on the political involvement of ordinary citizens
135. Which of the following best describes the structure of the first paragraph of the passage?
- (A) Two scholarly approaches are compared, and a shortcoming common to both is identified.
- (B) Two rival schools of thought are contrasted, and a third is alluded to.
- (C) An outmoded scholarly approach is described, and a corrective approach is called for.
- (D) An argument is outlined, and counterarguments are mentioned.
- (E) A historical era is described in terms of its political trends.
136. The information in the passage suggests that a pre-1960's political historian would have been most likely to undertake which of the following studies?
- (A) An analysis of voting trends among women voters of the 1920's
- (B) A study of male voters' gradual ideological shift from party politics to issue-oriented politics
- (C) A biography of an influential nineteenth-century minister of foreign affairs
- (D) An analysis of narratives written by previously unrecognized women activists
- (E) A study of voting trends among naturalized immigrant laborers in a nineteenth-century logging camp

Passage 104 (4/17)

New observations about the age of some globular clusters in our Milky Way galaxy have cast doubt on a long-held theory about how the galaxy was formed. The Milky Way contains about 125 globular clusters (compact groups of anywhere from several tens of thousands to perhaps a million stars) distributed in a roughly spherical halo around the galactic nucleus. The stars in these clusters are believed to have been born during the formation of the galaxy, and so may be considered relics of the original galactic nebula, holding vital clues to the way the formation took place.

The conventional theory of the formation of the galaxy contends that roughly 12 to 13 billion years ago the Milky Way formed over a relatively short time (about 200 million years) when a spherical cloud of gas collapsed under the pressure of its own gravity into a disc surrounded by a halo. Such a rapid formation of the galaxy would mean that all stars in the halo should be very nearly the same age.

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

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

137. The passage is primarily concerned with discussing
- (A) the importance of determining the age of globular clusters in assessing when the Milky Way galaxy was formed
 - (B) recent changes in the procedure used by astronomers to study the formation of the Milky Way galaxy
 - (C) current disputes among astronomers regarding the size and form of the Milky Way galaxy
 - (D) the effect of new discoveries regarding globular clusters on theories about the formation of the Milky Way galaxy
 - (E) the origin, nature, and significance of groups of stars known as globular clusters
138. According to the passage, one way in which Larson’s theory and the conventional theory of the formation of the Milky Way galaxy differs is in their assessment of the
- (A) amount of time it took to form the galaxy
 - (B) size of the galaxy immediately after its formation
 - (C) particular gas involved in the formation of the galaxy
 - (D) importance of the age of globular clusters in determining how the galaxy was formed
 - (E) shape of the halo that formed around the galaxy
139. Which of the following, if true, would be most useful in supporting the conclusions drawn from recent observations about globular clusters?
- (A) There is firm evidence that the absolute age of the Milky Way galaxy is between 10 and 17 billion years.
 - (B) A survey reveals that a galaxy close to the Milky Way galaxy contains globular clusters of ages close to the age of Palomar 12.
 - (C) A mathematical model proves that small gas clouds move in regular patterns.
 - (D) Space probes indicate that the stars in the Milky Way galaxy are composed of several different types of gas.
 - (E) A study of over 1,500 individual stars in the halo of the Milky Way galaxy indicates wide discrepancies in their ages.

140. If Bolte and his colleague are both correct, it can be inferred that the globular cluster Palomar 12 is approximately
- (A) 5 billion years younger than any other cluster in the galaxy
 - (B) the same age as most other clusters in the galaxy
 - (C) 7 billion years younger than another cluster in the galaxy
 - (D) 12 billion years younger than most other clusters in the galaxy
 - (E) 2 billion years younger than most other clusters in the galaxy
141. The passage suggests that Toomre's work complements Larson's theory because it
- (A) specifies more precisely the time frame proposed by Larson
 - (B) subtly alters Larson's theory to make it more plausible
 - (C) supplements Larson's hypothesis with direct astronomical observations
 - (D) provides theoretical support for the ideas suggested by Larson
 - (E) expands Larson's theory to make it more widely applicable
142. Which of the following most accurately states a finding of Bolte's research, as described in the passage?
- (A) The globular clusters in the Milky Way galaxy are 2 billion years older than predicted by the conventional theory.
 - (B) The ages of at least some globular clusters in the Milky Way galaxy differ by at least 4 billion years.
 - (C) One of the globular clusters in the Milky Way galaxy is 5 billion years younger than most others.
 - (D) The globular clusters in the Milky Way galaxy are significantly older than the individual stars in the halo.
 - (E) Most globular clusters in the Milky Way galaxy are between 11 and 15 billion years old.
143. The author of the passage puts the word "renegade" (line 29) in quotation marks most probably in order to
- (A) emphasize the lack of support for the theories in question
 - (B) contrast the controversial quality of the theories in question with the respectable character of their formulators
 - (C) generate skepticism about the theories in question
 - (D) ridicule the scientists who once doubted the theories in question
 - (E) indicate that the theories in question are no longer as unconventional as they once seemed

Passage 105 (5/17)

During the 1960's and 1970's, the primary economic development strategy of local

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

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

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

144. The primary purpose of the passage is to
- (A) advocate more effective strategies for encouraging the development of high-technology enterprises in the United States
 - (B) contrast the incentives for economic development offered by local governments with those offered by the private sector
 - (C) acknowledge and counter adverse criticism of programs being used to stimulate local economic development
 - (D) define and explore promotional efforts used by local governments to attract new industry
 - (E) review and evaluate strategies and programs that have been used to stimulate economic development
145. The passage suggests which of the following about the majority of United States manufacturing industries before the high-technology development era of the 1980's?
- (A) They lost many of their most innovative personnel to small entrepreneurial enterprises.
 - (B) They experienced a major decline in profits during the 1960's and 1970's.
 - (C) They could provide real economic benefits to the areas in which they were located.
 - (D) They employed workers who had no specialized skills.
 - (E) They actively interfered with local entrepreneurial ventures.
146. The tone of the passage suggests that the author is most optimistic about the economic development potential of which of the following groups?

- (A) Local governments
 - (B) High-technology promoters
 - (C) Local entrepreneurs
 - (D) Manufacturing-industry managers
 - (E) Economic development strategists
147. The passage does NOT state which of the following about local entrepreneurs?
- (A) They are found nearly everywhere.
 - (B) They encourage further entrepreneurship.
 - (C) They attract out-of-town investors.
 - (D) They employ local workers.
 - (E) They are established in their communities.
148. The author of the passage mentions which of the following as an advantage of high-technology development?
- (A) It encourages the modernization of existing manufacturing facilities.
 - (B) It promotes healthy competition between rival industries.
 - (C) It encourages the growth of related industries.
 - (D) It takes full advantage of the existing workforce.
 - (E) It does not advantage one local workforce at the expense of another.

Passage 106 (6/17)

Researchers compared the number of tooth fractures in present-day carnivores with tooth fractures in carnivores that lived 36,000 to 10,000 years ago and that were preserved in the Rancho La Brea tar pits in Los Angeles. The breakage frequencies in the extinct species were strikingly higher than those in the present-day species.

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

231. The primary purpose of the passage is to
- (A) present several explanations for a well-known fact
 - (B) suggest alternative method of resolving a debate

- (C) argue in favor of a controversial theory
 - (D) question the methodology used in a study
 - (E) discuss the implications of a research finding
232. The passage suggests that, compared with Pleistocene carnivores in other areas, Pleistocene carnivores in the La Brea area
- (A) included the same species, in approximately the same proportions
 - (B) had a similar frequency of tooth fractures
 - (C) populated the La Brea more densely
 - (D) consumed their preys more thoroughly
 - (E) found it harder to obtain sufficiency prey
233. According to the passage, the researchers believes that the high frequency of tooth breakage in carnivores found at La Brea was caused primarily by
- (A) the aging process in individual carnivores
 - (B) contact between the fossils in the pits
 - (C) poor preservation of the fossils after they were removed from the pits
 - (D) the impact of carnivores' teeth against the bones of their prey
 - (E) the impact of carnivores' teeth against the bones of other carnivores during fights over kills
234. The researchers' conclusion concerning the absence of demographic bias would be most seriously undermined if it were found that
- (A) the older as individual carnivore is, the more likely it is to have a large number of tooth fractures
 - (B) the average age at death of a present-day carnivores is greater than was the average age at death of a Pleistocene carnivore
 - (C) in Pleistocene carnivore species, older individuals consumed carcasses as thoroughly as did younger individuals
 - (D) the methods used to determine animals' ages in fossil samples tend to misidentify many older individuals as younger individuals
 - (E) data concerning the ages of fossil samples cannot provide reliable information about behavioral differences between extinct carnivores and present-day carnivores
235. The passage suggests that if the researchers had not found that two extinct carnivore species were free of tooth breakage, the researchers would have concluded that
- (A) the difference in breakage frequencies could have been the result of damage to the fossil remains in the La Brea pits
 - (B) the fossils in other Pleistocene sites could have higher breakage frequencies than do the fossils in the La Brea pits

- (C) Pleistocene carnivore species probably behaved very similarly to one another with respect to consumption of carcass
- (D) all Pleistocene carnivores species differed behaviorally from present-day carnivore species
- (E) predator densities during the Pleistocene era were extremely high

Passage 107 (7/17)

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

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

236. The primary purpose of the passage is to
- (A) explain and critique the methods used by early statisticians
 - (B) compare and contrast a historical situation with a current-day one
 - (C) describe and explain a historical change
 - (D) discuss historical opposition to an established institution
 - (E) trace the origin of a contemporary controversy
237. Each of the following aspects of nineteenth-century United States censuses is mentioned in the passage EXCEPT the
- (A) year in which data on occupations began to be analyzed by gender
 - (B) year in which specific information began to be collected on individuals in addition to the head of the household
 - (C) year in which overlap between women employed outside the home and women keeping house was first calculated
 - (D) way in which the 1890 census measured women's income levels and educational backgrounds

- (E) way in which household members were counted in the 1840 census
238. It can be inferred from the passage that the 1840 United States census provided a count of which of the following?
- (A) Women who worked exclusively in the home
 - (B) People engaged in nonfarming occupations
 - (C) People engaged in social movements
 - (D) Women engaged in family-run enterprises
 - (E) Men engaged in agriculture
239. The author uses the adjective “simple” in line 5 most probably to emphasize that the
- (A) collection of census information became progressively more difficult throughout the nineteenth-century
 - (B) technology for tabulating census information was rudimentary during the first half of the nineteenth century
 - (C) home-based agricultural economy of the early nineteenth century was easier to analyze than the later industrial economy
 - (D) economic role of women was better defined in the early nineteenth century than in the late nineteenth century
 - (E) information collected by early-nineteen-century censuses was limited in its amount of detail
240. The passage suggests which of the following about the “women’s advocates and women statisticians” mentioned in lines 27-28?
- (A) They wanted to call attention to the lack of pay for women who worked in the home.
 - (B) They believed that previous census information was inadequate and did not reflect certain economic changes in the United States.
 - (C) They had begun to press for changes in census-taking methods as part of their participation in the antislavery movement.
 - (D) They thought that census statistics about women would be more accurate if more women were employed as census officials.
 - (E) They had conducted independent studies that disputed the official statistics provided by previous United States censuses.

Passage 108 (8/17)

The modern multinational corporation is described as having originated when the owner-managers of nineteenth-century British firms carrying on international trade were replaced by teams of salaried managers organized into hierarchies. Increases in the volume of transactions in such firms are commonly believed to have necessitated this structural change. Nineteenth-century inventions like the steamship and the telegraph, by facilitating coordination

of managerial activities, are described as key factors. Sixteenth- and seventeenth-century chartered trading companies, despite the international scope of their activities, are usually considered irrelevant to this discussion: the volume of their transactions is assumed to have been too low and the communications and transport of their day too primitive to make comparisons with modern multinationals interesting.

In reality, however, early trading companies successfully purchased and outfitted ships, built and operated offices and warehouses, manufactured trade goods for use abroad, maintained trading posts and production facilities overseas, procured goods for import, and sold those goods both at home and in other countries. The large volume of transactions associated with these activities seems to have necessitated hierarchical management structures well before the advent of modern communications and transportation. For example, in the Hudson's Bay Company, each far-flung trading outpost was managed by a salaried agent, who carried out the trade with the Native Americans, managed day-to-day operations, and oversaw the post's workers and servants. One chief agent, answerable to the Court of Directors in London through the correspondence committee, was appointed with control over all of the agents on the bay.

The early trading companies did differ strikingly from modern multinationals in many respects. They depended heavily on the national governments of their home countries and thus characteristically acted abroad to promote national interests. Their top managers were typically owners with a substantial minority share, whereas senior managers' holdings in modern multinationals are usually insignificant. They operated in a pre-industrial world, grafting a system of capitalist international trade onto a pre-modern system of artisan and peasant production. Despite these differences, however, early trading companies organized effectively in remarkably modern ways and merit further study as analogues of more modern structures.

241. The author's main point is that

- (A) modern multinationals originated in the sixteenth and seventeenth centuries with the establishment of chartered trading companies
- (B) the success of early chartered trading companies, like that of modern multinationals, depended primarily on their ability to carry out complex operations
- (C) early chartered trading companies should be more seriously considered by scholars studying the origins of modern multinationals
- (D) scholars are quite mistaken concerning the origins of modern multinationals
- (E) the management structures of early chartered trading companies are fundamentally the same as those of modern multinationals

242. According to the passage, early chartered trading companies are usually described as

- (A) irrelevant to a discussion of the origins of the modern multinational corporation
- (B) interesting but ultimately too unusually to be good subjects for economic study

- (C) analogues of nineteenth-century British trading firms
 - (D) rudimentary and very early forms of the modern multinational corporation
 - (E) important national institutions because they existed to further the political aims of the governments of their home countries
243. It can be inferred from the passage that the author would characterize the activities engaged in by early chartered trading companies as being
- (A) complex enough in scope to require a substantial amount of planning and coordination on the part of management
 - (B) too simple to be considered similar to those of a modern multinational corporation
 - (C) as intricate as those carried out by the largest multinational corporations today
 - (D) often unprofitable due to slow communications and unreliable means of transportation
 - (E) hampered by the political demands imposed on them by the governments of their home countries
244. The author lists the various activities of early chartered trading companies in order to
- (A) analyze the various ways in which these activities contributed to changes in management structure in such companies
 - (B) demonstrate that the volume of business transactions of such companies exceeded that of earlier firms
 - (C) refute the view that the volume of business undertaken by such companies was relatively low
 - (D) emphasize the international scope of these companies' operations
 - (E) support the argument that such firms coordinated such activities by using available means of communication and transport
245. With which of the following generalizations regarding management structures would the author of the passage most probably agree?
- (A) Hierarchical management structures are the most efficient management structures possible in a modern context.
 - (B) Firms that routinely have a high volume of business transactions find it necessary to adopt hierarchical management structures.
 - (C) Hierarchical management structures cannot be successfully implemented without modern communications and transportation.
 - (D) Modern multinational firms with a relatively small volume of business transactions usually do not have hierarchically organized management structures.
 - (E) Companies that adopt hierarchical management structures usually do so in order to facilitate expansion into foreign trade.

246. The passage suggests that modern multinationals differ from early chartered trading companies in that
- (A) the top managers of modern multinationals own stock in their own companies rather than simply receiving a salary
 - (B) modern multinationals depend on a system of capitalist international trade rather than on less modern trading systems
 - (C) modern multinationals have operations in a number of different foreign countries rather than merely in one or two
 - (D) the operations of modern multinationals are highly profitable despite the more stringent environmental and safety regulations of modern governments
 - (E) the overseas operations of modern multinationals are not governed by the national interests of their home countries
247. The author mentions the artisan and peasant production systems of early chartered trading companies as an example of
- (A) an area of operations of these companies that was unhampered by rudimentary systems of communications and transport
 - (B) a similarity that allows fruitful comparison of these companies with modern multinationals
 - (C) a positive achievement of these companies in the face of various difficulties
 - (D) a system that could not have emerged in the absence of management hierarchies
 - (E) a characteristic that distinguishes these companies from modern multinationals
248. The passage suggests that one of the reasons that early chartered trading companies deserve comparison with early modern multinationals is
- (A) the degree to which they both depended on new technology
 - (B) the similar nature of their management structures
 - (C) similarities in their top managements' degree of ownership in the company
 - (D) their common dependence on political stability abroad in order to carry on foreign operations
 - (E) their common tendency to revolutionize systems of production

Passage 109 (9/17)

In an unfinished but highly suggestive series of essays, the late Sarah Eisenstein has focused attention on the evolution of working women's values from the turn of the century to the First World War. Eisenstein argues that turn-of-the-century women neither wholly accepted nor rejected what she calls the dominant "ideology of domesticity," but rather took this and other available ideologies—feminism, socialism, trade unionism—and modified or adapted them in light of their own experiences and needs. In thus maintaining that wage-work helped to produce a new "consciousness" among women, Eisenstein to some extent challenges the

recent, controversial proposal by Leslie Tentler that for women the work experience only served to reinforce the attractiveness of the dominant ideology. According to the Tentler, the degrading conditions under which many female wage earners worked made them view the family as a source of power and esteem available nowhere else in their social world. In contrast, Eisenstein's study insists that wage-work had other implications for women's identities and consciousness. Most importantly, her work aims to demonstrate that wage-work enabled women to become aware of themselves as a distinct social group capable of defining their collective circumstance. Eisenstein insists that as a group working-class women were not able to come to collective consciousness of their situation until they began entering the labor force, because domestic work tended to isolate them from one another.

Unfortunately, Eisenstein's unfinished study does not develop these ideas in sufficient depth or detail, offering tantalizing hints rather than an exhaustive analysis. Whatever Eisenstein's overall plan may have been, in its current form her study suffers from the limited nature of the sources she depended on. She uses the speeches and writings of reformers and labor organizers, who she acknowledges were far from representative, as the voice of the typical woman worker. And there is less than adequate attention given to the differing values of immigrant groups that made up a significant proportion of the population under investigation. While raising important questions, Eisenstein's essays do not provide definitive answer, and it remains for others to take up the challenges they offer.

249. The primary purpose of the passage is to
- (A) criticize a scholar's assumptions and methodology
 - (B) evaluate an approach to women's study
 - (C) compare two sociological theories
 - (D) correct a misconception about feminist theory
 - (E) defend an unpopular ideology
250. It can be inferred from the passage that, in Eisenstein's view, working women at the turn of the century had which of the following attitudes toward the dominant ideology of their time?
- (A) They resented the dominant ideology as degrading.
 - (B) They preferred the dominant ideology to other available ideologies.
 - (C) They began to view the dominant ideology more favorably as a result of their experiences in the labor force.
 - (D) They accepted some but not all aspects of the dominant ideology.
 - (E) They believed that the dominant ideology isolated them from one another.
251. Which of the following best describes the organization of the first paragraph of the passage?
- (A) A chronological account of a historical development is presented, and then future developments are predicted.
 - (B) A term is defined according to several different schools of thought, and then a new definition is formulated.

- (C) A theory is presented, an alternative viewpoint is introduced, and then the reasoning behind the initial theory is summarized.
 - (D) A tentative proposal is made, reasons for and against it are weighed, and then a modified version of the proposal is offered.
 - (E) A controversy is described, its historical implications are assessed, and then a compromise is suggested.
252. Which of the following would the author of the passage be most likely to approve as a continuation of Eisenstein's study?
- (A) An oral history of prominent women labor organizers
 - (B) An analysis of letters and diaries written by typical female wage earners at the turn of the century
 - (C) An assessment of what different social and political groups defined as the dominant ideology in the early twentieth century
 - (D) A theoretical study of how socialism and feminism influenced one another at the turn of the century
 - (E) A documentary account of labor's role in the introduction of women into the labor force

Passage 110 (10/17)

Neotropical coastal mangrove forests are usually "zonal," with certain mangrove species found predominantly in the seaward portion of the habitat and other mangrove species on the more landward portions of the coast. The earliest research on mangrove forests produced descriptions of species distribution from shore to land, without exploring the causes of the distributions.

The idea that zonation is caused by plant succession was first expressed by J. H. Davis in a study of Florida mangrove forests. According to Davis' scheme, the shoreline is being extended in a seaward direction because of the "land-building" role of mangroves, which, by trapping sediments over time, extend the shore. As a habitat gradually becomes more inland as the shore extends, the "land-building" species are replaced. This continuous process of accretion and succession would be interrupted only by hurricanes or storm flushings.

Recently the universal application of Davis' succession paradigm has been challenged. It appears that in areas where weak currents and weak tidal energies allow the accumulation of sediments, mangroves will follow land formation and accelerate the rate of soil accretion; succession will proceed according to Davis' scheme. But on stable coastlines, the distribution of mangrove species results in other patterns of zonation; "land building" does not occur.

To find a principle that explains the various distribution patterns, several researchers have looked to salinity and its effects on mangrove. While mangroves can develop in fresh water, they can also thrive in salinities as high as 2.5 times that of seawater. However, those mangrove species found in freshwater habitats do well only in the absence of competition, thus suggesting that salinity tolerance is a critical factor in competitive success among mangrove species. Research suggests that mangroves will normally dominate highly saline regions,

although not because they require salt. Rather, they are metabolically efficient (and hence grow well) in portions of an environment whose high salinity excludes plants adapted to lower salinities. Tides create different degrees of salinity along a coastline. The characteristic mangrove species of each zone should exhibit a higher metabolic efficiency at that salinity than will any potential invader, including other species of mangrove.

253. The primary of the purpose of the passage is to
- (A) refute the idea that the zonation exhibited in mangrove forests is caused by adaptation to salinity
 - (B) describe the pattern of zonation typically found in Florida mangrove forests
 - (C) argue that Davis' succession paradigm cannot be successfully applied to Florida mangrove forests
 - (D) discuss hypotheses that attempt to explain the zonation of coastal mangrove forests
 - (E) establish that plants that do well in saline forest environments require salt to achieve maximum metabolic efficiency
254. According to the passage, the earliest research on mangrove forest produced which of the following?
- (A) Data that implied random patterns of mangrove species distribution
 - (B) Descriptions of species distributions suggesting zonation
 - (C) Descriptions of the development of mangrove forests over time
 - (D) Reclassification of species formerly thought to be identical
 - (E) Data that confirmed the "land-building" role of mangroves
255. It can be inferred from the passage that Davis' paradigm does NOT apply to which of the following?
- (A) The shoreline of Florida mangrove forests first studies by Davis
 - (B) A shoreline in an area with weak currents
 - (C) A shoreline in an area with weak tidal energy
 - (D) A shoreline extended by "land-building" species of mangrove
 - (E) A shoreline in which few sediments can accumulate
256. Information in the passage indicates that the author would most probably regard which of following statements as INCORRECT?
- (A) Coastal mangrove forests are usually zonal.
 - (B) Hurricanes interrupt the process of accretion and succession that extends existing shorelines.
 - (C) Species of plants that thrive in a saline habitat require salt to flourish.
 - (D) Plants with the highest metabolic efficiency in a given habitat tend to exclude other plants from that habitat.
 - (E) Shoreline in areas with weak currents and tides are more likely to be extended

through the process of accumulation of sediment than are shorelines with strong currents and tides.

Passage 111 (11/17)

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

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

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

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

257. According to the passage, all of the following are benefits associated with backward integration EXCEPT:
- (A) improvement in the management of overhead expenses
 - (B) enhancement of profit margins on sales of components
 - (C) simplification of purchasing and marketing operations
 - (D) reliability of a source of necessary components
 - (E) elimination of unnecessary research efforts
258. According to passage, when an assembler buys a firm that makes some important component of the end product that the assembler produces, independent suppliers of the same component may
- (A) withhold technological innovations from the assembler

- (B) experience improved profit margins on sales of their products
 - (C) lower their prices to protect themselves from competition
 - (D) suffer financial difficulties and go out of business
 - (E) stop developing new versions of the component
259. Which of the following best describes the way the last paragraph functions in the context of the passage?
- (A) The last in a series of arguments supporting the central argument of the passage is presented.
 - (B) A viewpoint is presented which qualifies one presented earlier in the passage.
 - (C) Evidence is presented in support of the argument developed in the preceding paragraph.
 - (D) Questions arising from the earlier discussion are identified as points of departure for further study of the topic.
 - (E) A specific example is presented to illustrate the main elements of argument presented in the earlier paragraphs.
260. According to the passage, which of the following relationships between profits and investments in research and development holds true for producers of technologically advanced components?
- (A) Modest investments are required and the profit margins on component sales are low.
 - (B) Modest investments are required but the profit margins on component sales are quite high.
 - (C) Despite the huge investments that are required, the profit margins on components sales are high.
 - (D) Because huge investments are required, the profit margins on component sales are low.
 - (E) Long-term contractual relationships with purchasers of components ensure a high ratio of profits to investment costs.

Passage 112 (12/17)

Homeostasis, an animal's maintenance of certain internal variables within an acceptable range, particularly in extreme physical environments, has long interested biologists. The desert rat and the camel in the most water-deprived environments, and marine vertebrates in an all-water environment, encounter the same regulatory problem: maintaining adequate internal fluid balance.

For desert rats and camels, the problem is conservation of water in an environment where standing water is nonexistent, temperature is high, and humidity is low. Despite these handicaps, desert rats are able to maintain the osmotic pressure of their blood, as well as their total body-water content, at approximately the same levels as other rats. One countermeasure is behavioral: these rats stay in burrows during the hot part of the day, thus avoiding loss of

fluid through panting or sweating, which are regulatory mechanisms for maintaining internal body temperature by evaporative cooling. Also, desert rats' kidneys can excrete a urine having twice as high a salt content as sea water.

Camels, on the other hand, rely more on simple endurance. They cannot store water, and their reliance on an entirely unexceptional kidney results in a rate of water loss through renal function significantly higher than that of desert rats. As a result, camels must tolerate losses in body water of up to thirty percent of their body weight. Nevertheless, camels do rely on a special mechanism to keep water loss within a tolerable range: by seating and panting only when their body temperature exceeds that which would kill a human, they conserve internal water.

Marine vertebrates experience difficulty with their water balance because though there is no shortage of seawater to drink, they must drink a lot of it to maintain their internal fluid balance. But the excess salts from the seawater must be discharged somehow, and the kidneys of most marine vertebrates are unable to excrete a urine in which the salts are more concentrated than in seawater. Most of these animals have special salt-secreting organs outside the kidney that enable them to eliminate excess salt.

261. Which of the following most accurately states the purpose of the passage?
- (A) To compare two different approaches to the study of homeostasis
 - (B) To summarize the findings of several studies regarding organisms' maintenance of internal variables in extreme environments
 - (C) To argue for a particular hypothesis regarding various organisms' conservation of water in desert environments
 - (D) To cite examples of how homeostasis is achieved by various organisms
 - (E) To defend a new theory regarding the maintenance of adequate fluid balance
262. According to the passage, the camel maintains internal fluid balance in which of the following ways?
- I. By behavioral avoidance of exposure to conditions that lead to fluid loss
 - II. By an ability to tolerate high body temperatures
 - III. By reliance on stored internal fluid supplies
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
 - (E) I, II, and III
263. It can be inferred from the passage that some mechanisms that regulate internal body temperature, like sweating and panting, can lead to which of the following?
- (A) A rise in the external body temperature
 - (B) A drop in the body's internal fluid level
 - (C) A decrease in the osmotic pressure of the blood

- (D) A decrease in the amount of renal water loss
 - (E) A decrease in the urine's salt content
264. It can be inferred from the passage that the author characterizes the camel's kidney as "entirely unexceptional" (line 24) primarily to emphasize that it
- (A) functions much as the kidney of a rat functions
 - (B) does not aid the camel in coping with the exceptional water loss resulting from the extreme conditions of its environment
 - (C) does not enable the camel to excrete as much salt as do the kidneys of marine vertebrates
 - (D) is similar in structure to the kidneys of most mammals living in water-deprived environments
 - (E) requires the help of other organs in eliminating excess salt

Passage 113 (13/17)

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

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

265. The passage suggests that combing and carding differ from weaving in that combing and carding are
- (A) low-skill jobs performed by primarily by women employees
 - (B) low-skill jobs that were not performed in the home
 - (C) low-skill jobs performed by both male and female employees
 - (D) high-skill jobs performed outside the home
 - (E) high-skill jobs performed by both male and female employees
266. Which of the following, if true, would most weaken the explanation provided by the human capital theory for women's concentration in certain occupations in

seventeenth-century Florence?

- (A) Women were unlikely to work outside the home even in occupations whose house were flexible enough to allow women to accommodate domestic tasks as well as paid labor.
- (B) Parents were less likely to teach occupational skills to their daughters than they were to their sons.
- (C) Women's participation in the Florentine paid labor force grew steadily throughout the sixteenth and seventeenth centuries.
- (D) The vast majority of female weavers in the Florentine wool industry had children.
- (E) Few women worked as weavers in the Florentine silk industry, which was devoted to making cloths that required a high degree of skill to produce.

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

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

Passage 114 (14/17)

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

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

268. Which of the following best describes the content of the passage?
- (A) A chronology of the development of different methods for mapping Native Americans
 - (B) A discussion of how the mapmaking techniques of Native Americans differed from those of Europeans
 - (C) An argument concerning the present-day uses to which historical maps of Native American lands are put
 - (D) An argument concerning the nature of information contained in maps of Native American lands
 - (E) A proposal for improving the accuracy of maps of Native American lands
269. The passage mentions each of the following as a factor affecting current maps of Native American lands EXCEPT
- (A) United States government policy
 - (B) non-Native Americans' perspective on Native Americans
 - (C) origins of the information utilized to produce the maps
 - (D) changes in ways that tribal lands are used
 - (E) the reason for producing the maps
270. The passage suggests which of the following about most existing maps of Native American lands?
- (A) They do not record the migrations of Native American tribes.
 - (B) They have been preserved primarily because of their connection with treaties involving land transfers.
 - (C) They tend to reflect archaeological evidence that has become outdated.
 - (D) They tend to be less accurate when they are based on oral reports than when they are based on written documents.
 - (E) They are not based primarily on the mapmakers' firsthand observations of Native American lands.
271. All of the following are examples of the type of evidence used in creating "Most existing maps" (line 7-8) EXCEPT
- (A) a nineteenth-century government report on population distribution of a particular tribe
 - (B) taped conversations with people who lived on Native American tribal lands in the early twentieth century
 - (C) aerial photographs of geological features of lands inhabited by Native Americans
 - (D) findings from a recently excavated site once inhabited by a certain Native American people
 - (E) a journal kept by a non-Native American explorer who traveled in Native American territory in the early nineteenth century

Passage 115 (15/17)

(This passage was written in 1984.)

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

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

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

272. Which of the following best describes the relationship of the first paragraph to the passage as a whole?
- (A) The first paragraph introduces a general thesis that is elaborated on in detail elsewhere in the passage.
 - (B) The first paragraph presents a concrete instance of a problem that is discussed elsewhere in the passage.
 - (C) The first paragraph describes a traditional process that is contrasted unfavorably with a newer process described elsewhere in the passage.
 - (D) The first paragraph presents a dramatic example of the potential of a process that is described elsewhere in the passage.
 - (E) The first paragraph describes a historic incident that served as the catalyst for developments described elsewhere in the passage.

273. According the passage, one of the ways in which analog recording systems differ from digital recording systems is that analog systems
- (A) can be used to reduce background noise in old recordings
 - (B) record the original sound as a continuous waveform
 - (C) distort the original sound somewhat
 - (D) can avoid introducing extraneous and nonmusical sounds
 - (E) can reconstruct the original waveform with little loss in quality
274. Which of the following statements about the numbers by which sound is represented in a digital system can be inferred from the passage?
- (A) They describe the time interval between successive sounds in a passage of music.
 - (B) They model large changes in the amplitude of the initial sound with relatively poor precision.
 - (C) They are slightly altered each time they are read by the playback apparatus.
 - (D) They are not readily altered by distortion and noise accumulated as the digital signal is stored and manipulated.
 - (E) They are stored in the recording medium in small groups that can be read simultaneously by the playback apparatus.
275. Which of the following can be inferred from the passage about the digital approach to the processing of sound?
- (A) It was developed in competition with wax-cylinder recording technology.
 - (B) It has resulted in the first distortion-free playback system.
 - (C) It has been extensively applied to nonmusical sounds.
 - (D) It cannot yet process music originally recorded on analog equipment.
 - (E) It is not yet capable of reprocessing old recordings in a completely distortion-free manner.

Passage 116 (16/17)

The function of capital markets is to facilitate an exchange of funds among all participants, and yet in practice we find that certain participants are not on a par with others. Members of society have varying degrees of market strength in terms of information they bring to a transaction, as well as of purchasing power and creditworthiness, as defined by lenders.

For example, within minority communities, capital markets do not properly fulfill their functions; they do not provide access to the aggregate flow of funds in the United States. The financial system does not generate the credit or investment vehicles needed for underwriting economic development in minority areas. The problem underlying this dysfunction is found in a rationing mechanism affecting both the available alternatives for investment and the amount of financial resources. This creates a distributive mechanism penalizing members of minority groups because of their socioeconomic differences from others. The existing system expresses

definite socially based investment preferences that result from the previous allocation of income and that influence the allocation of resources for the present and future. The system tends to increase the inequality of income distribution. And, in the United States economy, a greater inequality of income distribution leads to a greater concentration of capital in certain types of investment.

Most traditional financial-market analysis studies ignore financial markets' deficiencies in allocation because of analysts' inherent preferences for the simple model of perfect competition. Conventional financial analysis pays limited attention to issues of market structure and dynamics, relative costs of information, and problems of income distribution. Market participants are viewed as acting as entirely independent and homogeneous individuals with perfect foresight about capital-market behavior. Also, it is assumed that each individual in the community at large has the same access to the market and the same opportunity to transact and to express the preference appropriate to his or her individual interest. Moreover, it is assumed that transaction costs for various types of financial instruments (stocks, bonds, etc.) are equally known and equally divided among all community members.

276. The main point made by the passage is that

- (A) financial markets provide for an optimum allocation of resources among all competing participants by balancing supply and demand
- (B) the allocation of financial resources takes place among separate individual participants, each of whom has access to the market
- (C) the existence of certain factors adversely affecting members of minority groups shows that financial markets do not function as conventional theory says they function
- (D) investments in minority communities can be made by the use of various alternative financial instruments, such as stocks and bonds
- (E) since transaction costs for stocks, bonds, and other financial instruments are not equally apportioned among all minority-group members, the financial market is subject to criticism

277. The passage states that traditional studies of the financial market overlook imbalances in the allocation of financial resources because

- (A) an optimum allocation of resources is the final result of competition among participants
- (B) those performing the studies choose an oversimplified description of the influences on competition
- (C) such imbalances do not appear in the statistics usually compiled to measure the market's behavior
- (D) the analysts who study the market are unwilling to accept criticism of their methods as biased
- (E) socioeconomic difference form the basis of a rationing mechanism that puts minority groups at a disadvantage

278. The author's main point is argued by

- (A) giving examples that support a conventional generalization
 - (B) showing that the view opposite to the author's is self-contradictory
 - (C) criticizing the presuppositions of a proposed plan
 - (D) showing that omissions in a theoretical description make it inapplicable in certain cases
 - (E) demonstrating that an alternative hypothesis more closely fits the data
279. A difference in which of the following would be an example of inequality in transaction costs as alluded to in lines 40-43?
- (A) Maximum amounts of loans extended by a bank to businesses in different areas
 - (B) Fees charged to large and small investors for purchasing stocks
 - (C) Prices of similar goods offered in large and small stores in an area
 - (D) Stipends paid to different attorneys for preparing legal suits for damages
 - (E) Exchange rates in dollars for currencies of different countries
280. Which of the following can be inferred about minority communities on the basis of the passage?
- (A) They provide a significant portion of the funds that become available for investment in the financial market.
 - (B) They are penalized by the tax system, which increases the inequality of the distribution of income between investors and wage earners.
 - (C) They do not receive the share of the amount of funds available for investment that would be expected according to traditional financial-market analysis.
 - (D) They are not granted governmental subsidies to assist in underwriting the cost of economic development.
 - (E) They provide the same access to alternative sources of credit to finance businesses as do majority communities.
281. According to the passage, a questionable assumption of the conventional theory about the operation of financial markets is that
- (A) creditworthiness as determined by lenders is a factor determining market access
 - (B) market structure and market dynamics depend on income distribution
 - (C) a scarcity of alternative sources of funds would result from taking socioeconomic factors into consideration
 - (D) those who engage in financial-market transactions are perfectly well informed about the market
 - (E) inequalities in income distribution are increased by the functioning of the financial market
282. According to the passage, analysts have conventionally tended to view those who participate in financial market as