

SECTION I

Time—35 minutes

25 Questions

Directions: The questions in this section are based on the reasoning contained in brief statements or passages. For some questions, more than one of the choices could conceivably answer the question. However, you are to choose the best answer; that is, the response that most accurately and completely answers the question. You should not make assumptions that are by commonsense standards implausible, superfluous, or incompatible with the passage. After you have chosen the best answer, blacken the corresponding space on your answer sheet.

1. French divers recently found a large cave along the coast of the Mediterranean Sea. The cave is accessible only through an underwater tunnel. The interior of the cave is completely filled with seawater and contains numerous large stalagmites, which are stony pillars that form when drops of water fall repeatedly on a single spot on a cave floor, leaving behind mineral deposits that accumulate over time.

The information above most strongly supports which one of the following?

- (A) The Mediterranean Sea was at a higher level in the past than it is now.
 - (B) The water level within the cave is higher now than it once was.
 - (C) The French divers were the first people who knew that the tunnel leading to the cave existed.
 - (D) There was once an entrance to the cave besides the underwater tunnel.
 - (E) Seawater in the Mediterranean has a lower mineral content now than it had when the stalagmites were being formed.
2. A director of the Rexx Pharmaceutical Company argued that the development costs for new vaccines that the health department has requested should be subsidized by the government, since the marketing of vaccines promised to be less profitable than the marketing of any other pharmaceutical product. In support of this claim the director argued that sales of vaccines are likely to be lower since each vaccine is administered to a patient only once, whereas medicines that combat diseases and chronic illnesses are administered many times to each patient.

Which one of the following, if true, most weakens the support offered by the company director for the claim concerning the marketing of vaccines?

- (A) Vaccines are administered to many more people than are most other pharmaceutical products.
- (B) Many of the diseases that vaccines are designed to prevent can be successfully treated by medicines.
- (C) Pharmaceutical companies occasionally market products that are neither medicines nor vaccines.
- (D) Pharmaceutical companies other than the Rexx Pharmaceutical Company produce vaccines.
- (E) The cost of administering a vaccine is rarely borne by the pharmaceutical company that manufactures that vaccine.

3. Manager: Our new computer network, the purpose of which is to increase productivity, can be installed during the day, which would disrupt our employees' work, or else at night, which would entail much higher installation charges. Since saving money is important, we should have the network installed during the day.

The manager's argument assumes which one of the following?

- (A) The monetary value of the network equipment would not exceed the cost of having the equipment installed at night.
- (B) The monetary value of any productivity lost during a daytime installation would be less than the difference between daytime and nighttime installation costs.
- (C) A daytime installation would be completed by no larger a crew and would take the crew no more time than would a nighttime installation.
- (D) Once the network has been installed, most of the company's employees will be able to use it immediately to increase their productivity.
- (E) Most of the company's employees would be able to work productively while a daytime installation is in progress.

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4. An ingredient in marijuana known as THC has been found to inactivate herpes viruses in experiments. In previous experiments researchers found that inactivated herpes viruses can convert healthy cells into cancer cells. It can be concluded that the use of marijuana can cause cancer.

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

- (A) Several teams of scientists performed the various experiments and all of the teams had similar results.
 - (B) The carcinogenic effect of THC could be neutralized by the other ingredients found in marijuana.
 - (C) When THC kills herpes viruses it weakens the immune system, and it might thus diminish the body's ability to fight other viruses, including viruses linked to cancers.
 - (D) If chemists modify the structure of THC, THC can be safely incorporated into medications to prevent herpes.
 - (E) To lessen the undesirable side effects of chemotherapy, the use of marijuana has been recommended for cancer patients who are free of the herpes virus.
5. Archaeologist: A large corporation has recently offered to provide funding to restore an archaeological site and to construct facilities to make the site readily accessible to the general public. The restoration will conform to the best current theories about how the site appeared at the height of the ancient civilization that occupied it. This offer should be rejected, however, because many parts of the site contain unexamined evidence.

Which one of the following principles, if valid, justifies the archaeologist's argument?

- (A) The ownership of archaeological sites should not be under the control of business interests.
- (B) Any restoration of an archaeological site should represent only the most ancient period of that site's history.
- (C) No one should make judgments about what constitutes the height of another civilization.
- (D) Only those with a true concern for an archaeological site's history should be involved in the restoration of that site.
- (E) The risk of losing evidence relevant to possible future theories should outweigh any advantages of displaying the results of theories already developed.

6. Besides laying eggs in her own nest, any female wood duck will lay an egg in the nest of another female wood duck if she sees the other duck leaving her nest. Under natural nesting conditions, this parasitic behavior is relatively rare because the ducks' nests are well hidden. However, when people put up nesting boxes to help the ducks breed, they actually undercut the ducks' reproductive efforts. These nesting boxes become so crowded with extra eggs that few, if any, of the eggs in those boxes hatch.

The statements above, if true, most strongly support which one of the following?

- (A) Female wood ducks will establish nests in nest boxes only when natural nesting sites are not available.
 - (B) Nesting female wood ducks who often see other female wood ducks are the most successful in their breeding efforts.
 - (C) The nesting boxes for wood ducks have less space for eggs than do natural nesting sites.
 - (D) The nesting boxes would be more effective in helping wood ducks breed if they were less visible to other wood ducks than they currently are.
 - (E) Nesting boxes are needed to supplement the natural nesting sites of wood ducks because of the destruction of much of the ducks' habitat.
7. The crux of creativity resides in the ability to manufacture variation on a theme. If we look at the history of science, for instance, we see that every idea is built upon a thousand related ideas. Careful analysis leads us to understand that what we choose to call a new theme or a new discovery is itself always and without exception some sort of variation, on a deep level, of previous themes.

If all of the statements in the passage are true, each of the following must also be true EXCEPT:

- (A) A lack of ability to manufacture a variation on a previous theme connotes a lack of creativity.
- (B) No scientific idea is entirely independent of all other ideas.
- (C) Careful analysis of a specific variation can reveal previous themes of which it is a variation.
- (D) All great scientific discoverers have been able to manufacture a variation on a theme.
- (E) Some new scientific discoveries do not represent, on a deep level, a variation on previous themes.

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8. Millions of female bats rear their pups in Bracken Cave. Although the mothers all leave the cave nightly, on their return each mother is almost always swiftly reunited with her own pup. Since the bats' calls are their only means of finding one another, and a bat pup cannot distinguish the call of its mother from that of any other adult bat, it is clear that each mother bat can recognize the call of her pup.

The argument seeks to do which one of the following?

- (A) derive a general conclusion about all members of a group from facts known about representative members of that group
 - (B) establish the validity of one explanation for a phenomenon by excluding alternative explanations
 - (C) support, by describing a suitable mechanism, the hypothesis that a certain phenomenon can occur
 - (D) conclude that members of two groups are likely to share a certain ability because of other characteristics they share
 - (E) demonstrate that a general rule applies in a particular case
9. Someone who gets sick from eating a meal will often develop a strong distaste for the one food in the meal that had the most distinctive flavor, whether or not that food caused the sickness. This phenomenon explains why children are especially likely to develop strong aversions to some foods.

Which one of the following, if true, provides the strongest support for the explanation?

- (A) Children are more likely than adults to be given meals composed of foods lacking especially distinctive flavors.
- (B) Children are less likely than adults to see a connection between their health and the foods they eat.
- (C) Children tend to have more acute taste and to become sick more often than adults do.
- (D) Children typically recover more slowly than adults do from sickness caused by food.
- (E) Children are more likely than are adults to refuse to eat unfamiliar foods.

10. Premiums for automobile accident insurance are often higher for red cars than for cars of other colors. To justify these higher charges, insurance companies claim that, overall, a greater percentage of red cars are involved in accidents than are cars of any other color. If this claim is true, then lives could undoubtedly be saved by banning red cars from the roads altogether.

The reasoning in the argument is flawed because the argument

- (A) accepts without question that insurance companies have the right to charge higher premiums for higher-risk clients
 - (B) fails to consider whether red cars cost the same to repair as cars of other colors
 - (C) ignores the possibility that drivers who drive recklessly have a preference for red cars
 - (D) does not specify precisely what percentage of red cars are involved in accidents
 - (E) makes an unsupported assumption that every automobile accident results in some loss of life
11. A certain credit-card company awards its customers bonus points for using its credit card. Customers can use accumulated points in the purchase of brand name merchandise by mail at prices lower than the manufacturers' suggested retail prices. At any given time, therefore, customers who purchase merchandise using the bonus points spend less than they would spend if they purchased the same merchandise in retail stores.

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

- (A) The merchandise that can be ordered by mail using the bonus points is not offered at lower prices by other credit-card companies that award bonus points.
- (B) The bonus points cannot be used by the credit-card customers in the purchase of brand name merchandise that is not available for purchase in retail stores.
- (C) The credit-card company does not require its customers to accumulate a large number of bonus points before becoming eligible to order merchandise at prices lower than the manufacturers' suggested retail price.
- (D) The amount credit-card customers pay for shipping the merchandise ordered by mail does not increase the amount customers spend to an amount greater than they would spend if they purchased the same merchandise in retail stores.
- (E) The merchandise available to the company's credit-card customers using the bonus points is frequently sold in retail stores at prices that are higher than the manufacturers' suggested retail prices.

12. It is probably not true that colic in infants is caused by the inability of those infants to tolerate certain antibodies found in cow's milk, since it is often the case that symptoms of colic are shown by infants that are fed breast milk exclusively.

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

- (A) A study involving 500 sets of twins has found that if one infant has colic, its twin will probably also have colic.
- (B) Symptoms of colic generally disappear as infants grow older, whether the infants have been fed breast milk exclusively or have been fed infant formula containing cow's milk.
- (C) In a study of 5,000 infants who were fed only infant formula containing cow's milk, over 4,000 of the infants never displayed any symptoms of colic.
- (D) When mothers of infants that are fed only breast milk eliminate cow's milk and all products made from cow's milk from their own diets, any colic symptoms that their infants have manifested quickly disappear.
- (E) Infants that are fed breast milk develop mature digestive systems at an earlier age than do those that are fed infant formulas, and infants with mature digestive systems are better able to tolerate certain proteins and antibodies found in cow's milk.

Questions 13–14

Yolanda: Gaining access to computers without authorization and manipulating the data and programs they contain is comparable to joyriding in stolen cars; both involve breaking into private property and treating it recklessly. Joyriding, however, is the more dangerous crime because it physically endangers people, whereas only intellectual property is harmed in the case of computer crimes.

Arjun: I disagree! For example, unauthorized use of medical records systems in hospitals could damage data systems on which human lives depend, and therefore computer crimes also cause physical harm to people.

13. An issue in dispute between Yolanda and Arjun is
- (A) whether joyriding physically endangers human lives
 - (B) whether the unauthorized manipulation of computer data involves damage to private property
 - (C) whether damage to physical property is more criminal than damage to intellectual property
 - (D) whether the unauthorized use of computers is as dangerous to people as is joyriding
 - (E) whether treating private property recklessly is ever a dangerous crime
14. The reasoning in Arjun's response is flawed because he
- (A) fails to maintain a distinction made in Yolanda's argument
 - (B) denies Yolanda's conclusion without providing evidence against it
 - (C) relies on the actuality of a phenomenon that he has only shown to be possible
 - (D) mistakes something that leads to his conclusion for something that is necessary for his conclusion
 - (E) uses as evidence a phenomenon that is inconsistent with his own conclusion

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15. A report of a government survey concluded that Center City was among the ten cities in the nation with the highest dropout rate from its schools. The survey data were obtained by asking all city residents over the age of 19 whether they were high school graduates and computing the proportion who were not. A city school official objected that the result did not seem accurate according to the schools' figures.

The school official can most properly criticize the reasoning by which the survey report reached its result for failure to do which one of the following?

- (A) take into account instances of respondents' dropping out that occurred before the respondents reached high school
 - (B) ask residents whether they had completed their high school work in fewer than the usual number of years
 - (C) distinguish between residents who had attended the city's schools and those who had received their schooling elsewhere
 - (D) predict the effect of the information contained in the report on future high school dropout rates for the city
 - (E) consider whether a diploma from the city's high schools signaled the same level of achievement over time
16. Brown dwarfs—dim red stars that are too cool to burn hydrogen—are very similar in appearance to red dwarf stars, which are just hot enough to burn hydrogen. Stars, when first formed, contain substantial amounts of the element lithium. All stars but the coolest of the brown dwarfs are hot enough to destroy lithium completely by converting it to helium. Accordingly, any star found that contains no lithium is not one of these coolest brown dwarfs.

The argument depends on assuming which one of the following?

- (A) None of the coolest brown dwarfs has ever been hot enough to destroy lithium.
- (B) Most stars that are too cool to burn hydrogen are too cool to destroy lithium completely.
- (C) Brown dwarfs that are not hot enough to destroy lithium are hot enough to destroy helium.
- (D) Most stars, when first formed, contain roughly the same percentage of lithium.
- (E) No stars are more similar in appearance to red dwarfs than are brown dwarfs.

17. Whenever a company loses a major product-liability lawsuit, the value of the company's stocks falls significantly within hours after the announcement. Cotoy has long been involved in a major product-liability lawsuit, and its stocks fell significantly in value today. Therefore, we can be sure that an unfavorable judgment against Cotoy in that lawsuit was announced earlier today.

Which one of the following contains flawed reasoning that most closely parallels that in the argument above?

- (A) Whenever a business treats its customers discourteously, its customers begin to shop elsewhere. Shopwell wants to keep all of its customers; therefore, its employees will never treat customers discourteously.
- (B) Whenever the large airlines decrease fares, the financial stability of smaller competing airlines is adversely affected. Therefore, the smaller competing airlines' financial stability must be seriously threatened when the large airlines announce a large price decrease.
- (C) Whenever a country shows a lack of leadership on international issues, respect for the country's policies begins to decline. Therefore, to gain respect for its policies, a country should show leadership on international issues.
- (D) Whenever an entering student at Cashman College wins the Performance Fellowship, he or she receives \$10,000. Therefore, Eula, a student who has enrolled at Cashman, must have won the Performance Fellowship, because she just received \$10,000 from the college.
- (E) Whenever a company advertises its products effectively, the company's sales increase. Oroco's sales have not increased; therefore, it is likely that the company did not advertise its products effectively.

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18. In recent years the climate has been generally cool in northern Asia. But during periods when the average daily temperature and humidity in northern Asia were slightly higher than their normal levels the yields of most crops grown there increased significantly. In the next century, the increased average daily temperature and humidity attained during those periods are expected to become the norm. Yet scientists predict that the yearly yields of most of the region's crops will decrease during the next century.

Which one of the following, if true, most helps to resolve the apparent paradox in the information above?

- (A) Crop yields in southern Asia are expected to remain constant even after the average daily temperature and humidity there increase from recent levels.
 - (B) Any increases in temperature and humidity would be accompanied by higher levels of atmospheric carbon dioxide, which is vital to plant respiration.
 - (C) The climate in northern Asia has generally been too cool and dry in recent years for populations of many crop insect pests to become established.
 - (D) In many parts of Asia, the increased annual precipitation that would result from warmer and wetter climates would cause most edible plant species to flourish.
 - (E) The recent climate of northern Asia prevents many crops from being farmed there during the winter.
19. No one in the French department to which Professor Alban belongs is allowed to teach more than one introductory level class in any one term. Moreover, the only language classes being taught next term are advanced ones. So it is untrue that both of the French classes Professor Alban will be teaching next term will be introductory level classes.
- The pattern of reasoning displayed in the argument above is most closely paralleled by that in which one of the following arguments?
- (A) The Morrison Building will be fully occupied by May and since if a building is occupied by May the new tax rates apply to it, the Morrison Building will be taxed according to the new rates.
 - (B) The revised tax code does not apply at all to buildings built before 1900, and only the first section of the revised code applies to buildings built between 1900 and 1920, so the revised code does not apply to the Norton Building, since it was built in 1873.
 - (C) All property on Overton Road will be reassessed for tax purposes by the end of the year and the Elnor Company headquarters is on Overton Road, so Elnor's property taxes will be higher next year.
 - (D) New buildings that include public space are exempt from city taxes for two years and all new buildings in the city's Alton district are exempt for five years, so the building with the large public space that was recently completed in Alton will not be subject to city taxes next year.
 - (E) Since according to recent statute, a building that is exempt from property taxes is charged for city water at a special rate, and hospitals are exempt from property taxes, Founder's Hospital will be charged for city water at the special rate.

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Questions 20–21

Some people have been promoting a new herbal mixture as a remedy for the common cold. The mixture contains, among other things, extracts of the plants purple coneflower and goldenseal. A cold sufferer, skeptical of the claim that the mixture is an effective cold remedy, argued, “Suppose that the mixture were an effective cold remedy. Since most people with colds wish to recover quickly, it follows that almost everybody with a cold would be using it. Therefore, since there are many people who have colds but do not use the mixture, it is obviously not effective.”

20. Each of the following is an assumption required by the skeptical cold sufferer’s argument EXCEPT:
- (A) Enough of the mixture is produced to provide the required doses to almost everybody with a cold.
 - (B) The mixture does not have side effects severe enough to make many people who have colds avoid using it.
 - (C) The mixture is powerful enough to prevent almost everybody who uses it from contracting any further colds.
 - (D) The mixture is widely enough known that almost everybody with a cold is aware of it.
 - (E) There are no effective cold remedies available that many people who have colds prefer to the mixture.
21. Which one of the following most accurately describes the method of reasoning the cold sufferer uses to reach the conclusion of the argument?
- (A) finding a claim to be false on the grounds that it would if true have consequences that are false
 - (B) accepting a claim on the basis of public opinion of the claim
 - (C) showing that conditions necessary to establish the truth of a claim are met
 - (D) basing a generalization on a representative group of instances
 - (E) showing that a measure claimed to be effective in achieving a certain effect would actually make achieving the effect more difficult

22. To hold criminals responsible for their crimes involves a failure to recognize that criminal actions, like all actions, are ultimately products of the environment that forged the agent’s character. It is not criminals but people in the law-abiding majority who by their actions do most to create and maintain this environment. Therefore, it is law-abiding people whose actions, and nothing else, make them alone truly responsible for crime.

The reasoning in the argument is most vulnerable to criticism on the grounds that

- (A) it exploits an ambiguity in the term “environment” by treating two different meanings of the word as though they were equivalent
- (B) it fails to distinguish between actions that are socially acceptable and actions that are socially unacceptable
- (C) the way it distinguishes criminal from crimes implicitly denies that someone becomes a criminal solely in virtue of having committed a crime
- (D) its conclusion is a generalization of statistical evidence drawn from only a small minority of the population
- (E) its conclusion contradicts an implicit principle on which an earlier part of the argument is based

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23. Chronic back pain is usually caused by a herniated or degenerated spinal disk. In most cases the disk will have been damaged years before chronic pain develops, and in fact an estimated one in five people over the age of 30 has a herniated or degenerated disk that shows no chronic symptoms. If chronic pain later develops in such a case, it is generally brought about by a deterioration of the abdominal and spinal muscles caused by insufficient exercise.

The statements above, if true, most strongly support which one of the following?

- (A) Four out of five people over the age of 30 can be sure they will never develop chronic back pain.
- (B) People who exercise their abdominal and spinal muscles regularly are sure to be free from chronic back pain.
- (C) Patients rarely suffer even mild and fleeting back pain at the time that a spinal disk first becomes herniated or degenerated.
- (D) Doctors can accurately predict which people who do not have chronic back pain will develop it in the future.
- (E) There is a strategy that can be effective in delaying or preventing the onset of pain from a currently asymptomatic herniated or degenerated spinal disk.

24. Each December 31 in Country Q, a tally is made of the country's total available coal supplies—that is, the total amount of coal that has been mined throughout the country but not consumed. In 1991 that amount was considerably lower than it had been in 1990. Furthermore, Country Q has not imported or exported coal since 1970.

If the statements above are true, which one of the following must also be true on the basis of them?

- (A) In Country Q, more coal was mined in 1990 than was mined in 1991.
- (B) In Country Q, the amount of coal consumed in 1991 was greater than the amount of coal mined in 1991.
- (C) In Country Q, the amount of coal consumed in 1990 was greater than the amount of coal consumed in 1991.
- (D) In Country Q, the amount of coal consumed in 1991 was greater than the amount of coal consumed in 1990.
- (E) In Country Q, more coal was consumed during the first half of 1991 than was consumed during the first half of 1990.

25. Tom: Employers complain that people graduating from high school too often lack the vocational skills required for full-time employment. Therefore, since these skills are best acquired on the job, we should require high school students to work at part-time jobs so that they acquire the skills needed for today's job market.

Mary: There are already too few part-time jobs for students who want to work, and simply requiring students to work will not create jobs for them.

Which one of the following most accurately describes how Mary's response is related to Tom's argument?

- (A) It analyzes an undesirable result of undertaking the course of action that Tom recommends.
- (B) It argues that Tom has mistaken an unavoidable trend for an avoidable one.
- (C) It provides information that is inconsistent with an explicitly stated premise in Tom's argument.
- (D) It presents a consideration that undercuts an assumption on which Tom's argument depends.
- (E) It defends an alternative solution to the problem that Tom describes.

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY.
DO NOT WORK ON ANY OTHER SECTION IN THE TEST.