

SECTION II

Time—35 minutes

24 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. The city's center for disease control reports that the rabies epidemic is more serious now than it was two years ago: 2 years ago less than 25 percent of the local raccoon population was infected, whereas today the infection has spread to more than 50 percent of the raccoon population. However, the newspaper reports that whereas two years ago 32 cases of rabid raccoons were confirmed during a 12-month period, in the past 12 months only 18 cases of rabid raccoons were confirmed.

Which one of the following, if true, most helps to resolve the apparent discrepancy between the two reports?

- (A) The number of cases of rabies in wild animals other than raccoons has increased in the past 12 months.
- (B) A significant proportion of the raccoon population succumbed to rabies in the year before last.
- (C) The symptoms of distemper, another disease to which raccoons are susceptible, are virtually identical to those of rabies.
- (D) Since the outbreak of the epidemic, raccoons, which are normally nocturnal, have increasingly been seen during daylight hours.
- (E) The number of confirmed cases of rabid raccoons in neighboring cities has also decreased over the past year.

2. Recently, reviewers of patent applications decided against granting a patent to a university for a genetically engineered mouse developed for laboratory use in studying cancer. The reviewers argued that the mouse was a new variety of animal and that rules governing the granting of patents specifically disallow patents for new animal varieties.

Which one of the following, if true, most weakens the patent reviewers' argument?

- (A) The restrictions the patent reviewers cited pertain only to domesticated farm animals.
- (B) The university's application for a patent for the genetically engineered mouse was the first such patent application made by the university.
- (C) The patent reviewers had reached the same decision on all previous patent requests for new animal varieties.
- (D) The patent reviewers had in the past approved patents for genetically engineered plant varieties.
- (E) The patent reviewers had previously decided against granting patents for new animal varieties that were developed through conventional breeding programs rather than through genetic engineering.

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Questions 3–4

Although water in deep aquifers does not contain disease-causing bacteria, when public water supplies are drawn from deep aquifers, chlorine is often added to the water as a disinfectant because contamination can occur as a result of flaws in pipes or storage tanks. Of 50 municipalities that all pumped water from the same deep aquifer, 30 chlorinated their water and 20 did not. The water in all of the municipalities met the regional government's standards for cleanliness, yet the water supplied by the 20 municipalities that did not chlorinate had less bacterial contamination than the water supplied by the municipalities that added chlorine.

3. Which one of the following can properly be concluded from the information given above?
 - (A) A municipality's initial decision whether or not to use chlorine is based on the amount of bacterial contamination in the water source.
 - (B) Water in deep aquifers does not contain any bacteria of any kind.
 - (C) Where accessible, deep aquifers are the best choice as a source for a municipal water supply.
 - (D) The regional government's standards allow some bacteria in municipal water supplies.
 - (E) Chlorine is the least effective disinfecting agent.
4. Which one of the following, if true, most helps explain the difference in bacterial contamination in the two groups of municipalities?
 - (A) Chlorine is considered by some experts to be dangerous to human health, even in the small concentrations used in municipal water supplies.
 - (B) When municipalities decide not to chlorinate their water supplies, it is usually because their citizens have voiced objections to the taste and smell of chlorine.
 - (C) The municipalities that did not add chlorine to their water supplies also did not add any of the other available water disinfectants, which are more expensive than chlorine.
 - (D) Other agents commonly added to public water supplies, such as fluoride and sodium hydroxide, were not used by any of the 50 municipalities.
 - (E) Municipalities that do not chlorinate their water supplies are subject to stricter regulation by the regional government in regard to pipes and water tanks than are municipalities that use chlorine.

5. The population of songbirds throughout England has decreased in recent years. Many people explain this decrease as the result of an increase during the same period in the population of magpies, which eat the eggs and chicks of songbirds.

Which one of the following, if true, argues most strongly against the explanation reported in the passage?

- (A) Official records of the population of birds in England have been kept for only the past 30 years.
 - (B) The number of eggs laid yearly by a female songbird varies widely according to the songbird's species.
 - (C) Although the overall population of magpies has increased, in most areas of England in which the songbird population has decreased, the number of magpies has remained stable.
 - (D) The population of magpies has increased because farmers no longer shoot or trap magpies to any great extent, though farmers still consider magpies to be pests.
 - (E) Although magpies eat the eggs and chicks of songbirds, magpies' diets consist of a wide variety of other foods as well.
6. The introduction of symbols for numbers is an event lost in prehistory, but the earliest known number symbols, in the form of simple grooves and scratches on bones and stones, date back 20,000 years or more. Nevertheless, since it was not until 5,500 years ago that systematic methods for writing numerals were invented, it was only then that any sort of computation became possible.
- Which one of the following is an assumption on which the argument relies?
- (A) Grooves and scratches found on bones and stones were all made by people, and none resulted from natural processes.
 - (B) Some kinds of surfaces upon which numeric symbols could have been made in the period before 5,500 years ago were not used for that purpose.
 - (C) Grooves and scratches inscribed on bones and stones do not date back to the time of the earliest people.
 - (D) Computation of any sort required a systematic method for writing numerals.
 - (E) Systematic methods for writing numerals were invented only because the need for computation arose.

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7. Politician: Now that we are finally cleaning up the industrial pollution in the bay, we must start making the bay more accessible to the public for recreational purposes.

Reporter: But if we increase public access to the bay, it will soon become polluted again.

Politician: Not true. The public did not have access to the bay, and it got polluted. Therefore, if and when the public is given access to the bay, it will not get polluted.

Which one of the following most closely parallels the flawed pattern of reasoning in the politician's reply to the reporter?

- (A) If there had been a full moon last night, the tide would be higher than usual today. Since the tide is no higher than usual, there must not have been a full moon last night.
 - (B) The detective said that whoever stole the money would be spending it conspicuously by now. Jones is spending money conspicuously, so he must be the thief.
 - (C) When prisoners convicted of especially violent crimes were kept in solitary confinement, violence in the prisons increased. Therefore, violence in the prisons will not increase if such prisoners are allowed to mix with fellow prisoners.
 - (D) To get a driver's license, one must pass a written test. Smith passed the written test, so she must have gotten a driver's license.
 - (E) In order to like abstract art, you have to understand it. Therefore, in order to understand abstract art, you have to like it.
8. Because learned patterns of behavior, such as the association of a green light with "go" or the expectation that switches will flip up for "on," become deeply ingrained, designers should make allowances for that fact, in order not to produce machines that are inefficient or dangerous.
- In which one of the following situations is the principle expressed most clearly violated?
- (A) Manufacturers have refused to change the standard order of letters on the typewriter keyboard even though some people who have never learned to type find this arrangement of letters bewildering.
 - (B) Government regulations require that crucial instruments in airplane cockpits be placed in exactly the same array in all commercial aircraft.
 - (C) Automobile manufacturers generally design for all of their automobiles a square or oblong ignition key and a round or oval luggage compartment key.
 - (D) The only traffic signs that are triangular in shape are "yield" signs.
 - (E) On some tape recorders the "start" button is red and the "stop" button is yellow.

9. From 1973 to 1989 total energy use in this country increased less than 10 percent. However, the use of electrical energy in this country during this same period grew by more than 50 percent, as did the gross national product—the total value of all goods and services produced in the nation.

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

- (A) Most of the energy used in this country in 1989 was electrical energy.
 - (B) From 1973 to 1989 there was a decline in the use of energy other than electrical energy in this country.
 - (C) From 1973 to 1989 there was an increase in the proportion of energy use in this country that consisted of electrical energy use.
 - (D) In 1989 electrical energy constituted a larger proportion of the energy used to produce the gross national product than did any other form of energy.
 - (E) In 1973 the electrical energy that was produced constituted a smaller proportion of the gross national product than did all other forms of energy combined.
10. A fundamental illusion in robotics is the belief that improvements in robots will liberate humanity from "hazardous and demeaning work." Engineers are designing only those types of robots that can be properly maintained with the least expensive, least skilled human labor possible. Therefore, robots will not eliminate demeaning work—only substitute one type of demeaning work for another.

The reasoning in the argument is most vulnerable to the criticism that it

- (A) ignores the consideration that in a competitive business environment some jobs might be eliminated if robots are not used in the manufacturing process
- (B) assumes what it sets out to prove, that robots create demeaning work
- (C) does not specify whether or not the engineers who design robots consider their work demeaning
- (D) attempts to support its conclusion by an appeal to the emotion of fear, which is often experienced by people faced with the prospect of losing their jobs to robots
- (E) fails to address the possibility that the amount of demeaning work eliminated by robots might be significantly greater than the amount they create

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11. If the needle on an industrial sewing machine becomes badly worn, the article being sewn can be ruined. In traditional apparel factories, the people who operate the sewing machines monitor the needles and replace those that begin to wear out. Industrial sewing operations are becoming increasingly automated, however, and it would be inefficient for a factory to hire people for the sole purpose of monitoring needles. Therefore a sophisticated new acoustic device that detects wear in sewing machine needles is expected to become standard equipment in the automated apparel factories of the future.

Which one of the following is most strongly supported by the information above?

- (A) In automated apparel factories, items will be ruined by faulty needles less frequently than happens in traditional apparel factories.
- (B) In the automated apparel factories of the future, each employee will perform only one type of task.
- (C) Traditional apparel factories do not use any automated equipment.
- (D) The needles of industrial sewing machines wear out at unpredictable rates.
- (E) As sewing machine needles become worn, the noise they make becomes increasingly loud.

Questions 12–13

Alexander: The chemical waste dump outside our town should be cleaned up immediately. Admittedly, it will be very costly to convert that site into woodland, but we have a pressing obligation to redress the harm we have done to local forests and wildlife.

Teresa: But our town's first priority is the health of its people. So even if putting the dump there was environmentally disastrous, we should not spend our resources on correcting it unless it presents a significant health hazard to people. If it does, then we only need to remove that hazard.

12. Teresa's statement most closely conforms to which one of the following principles?
- (A) Environmental destruction should be redressed only if it is in the economic interest of the community to do so.
 - (B) Resources should be allocated only to satisfy goals that have the highest priority.
 - (C) No expense should be spared in protecting the community's health.
 - (D) Environmental hazards that pose slight health risks to people should be rectified if the technology is available to do so.
 - (E) It is the community as a whole that should evaluate the importance of eliminating various perceived threats to public health.
13. Which one of the following is the point at issue between Alexander and Teresa?
- (A) whether the maintenance of a chemical waste dump inflicts significant damage on forests and wildlife
 - (B) whether it is extremely costly to clean up a chemical waste dump in order to replace it by a woodland
 - (C) whether the public should be consulted in determining the public health risk posed by a chemical waste dump
 - (D) whether the town has an obligation to redress damage to local forests and wildlife if that damage poses no significant health hazard to people
 - (E) whether destroying forests and wildlife in order to establish a chemical waste dump amounts to an environmental disaster

14. In 1980, Country A had a per capita gross domestic product (GDP) that was \$5,000 higher than that of the European Economic Community. By 1990, the difference, when adjusted for inflation, had increased to \$6,000. Since a rising per capita GDP indicates a rising average standard of living, the average standard of living in Country A must have risen between 1980 and 1990.

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

- (A) Between 1980 and 1990, Country A and the European Economic Community experienced the same percentage increase in population.
 - (B) Between 1980 and 1990, the average standard of living in the European Economic Community fell.
 - (C) Some member countries of the European Economic Community had, during the 1980s, a higher average standard of living than Country A.
 - (D) The per capita GDP of the European Economic Community was not lower by more than \$1,000 in 1990 than it had been in 1980.
 - (E) In 1990, no member country of the European Economic Community had a per capita GDP higher than that of Country A.
15. Municipal officials originally estimated that it would be six months before municipal road crews could complete repaving a stretch of road. The officials presumed that private contractors could not finish any sooner. However, when the job was assigned to a private contractor, it was completed in just 28 days.

Which one of the following, if true, does most to resolve the discrepancy between the time estimated for completion of the repaving job, and the actual time taken by the private contractor?

- (A) Road repaving work can only be done in the summer months of June, July, and August.
- (B) The labor union contract for road crews employed by both municipal agencies and private contractors stipulates that employees can work only eight hours a day, five days a week, before being paid overtime.
- (C) Many road-crew workers for private contractors have previously worked for municipal road crews, and vice versa.
- (D) Private contractors typically assign 25 workers to each road-repaving job site, whereas the number assigned to municipal road crews is usually 30.
- (E) Municipal agencies must conduct a lengthy bidding process to procure supplies after repaving work is ordered and before they can actually start work, whereas private contractors can obtain supplies readily as needed.

16. Researchers in South Australia estimate changes in shark populations inhabiting local waters by monitoring what is termed the "catch per unit effort" (CPUE). The CPUE for any species of shark is the number of those sharks that commercial shark-fishing boats catch per hour for each kilometer of gill net set out in the water. Since 1973 the CPUE for a particular species of shark has remained fairly constant. Therefore, the population of that species in the waters around South Australia must be at approximately its 1973 level.

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

- (A) The waters around South Australia are the only area in the world where that particular species of shark is found.
- (B) The sharks that are the most profitable to catch are those that tend to remain in the same area of ocean year after year and not migrate far from where they were born.
- (C) A significant threat to shark populations, in addition to commercial shark fishing, is "incidental mortality" that results from catching sharks in nets intended for other fish.
- (D) Most of the quotas designed to protect shark populations limit the tonnage of sharks that can be taken and not the number of individual sharks.
- (E) Since 1980 commercial shark-fishing boats have used sophisticated electronic equipment that enables them to locate sharks with greater accuracy.

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Questions 17–18

Winston: The Public Transportation Authority (PTA) cannot fulfill its mandate to operate without a budget deficit unless it eliminates service during late-night periods of low ridership. Since the fares collected during these periods are less than the cost of providing the service, these cuts would reduce the deficit and should be made. Transit law prohibits unauthorized fare increases, and fare-increase authorization would take two years.

Ping: Such service cuts might cost the PTA more in lost fares than they would save in costs, for the PTA would lose those riders who leave home during the day but must return late at night. Thus the PTA would lose two fares, while realizing cost savings for only one leg of such trips.

17. The relationship of Ping's response to Winston's argument is that Ping's response
 - (A) carefully redefines a term used in Winston's argument
 - (B) questions Winston's proposal by raising considerations not addressed by Winston
 - (C) supplies a premise that could have been used as part of the support for Winston's argument
 - (D) introduces detailed statistical evidence that is more persuasive than that offered by Winston
 - (E) proposes a solution to the PTA's dilemma by contradicting Winston's conclusion
18. Which one of the following, if true, most strongly supports Ping's conclusion?
 - (A) Over 23 percent of the round trips made by PTA riders are either initiated or else completed during late-night periods.
 - (B) Reliable survey results show that over 43 percent of the PTA's riders oppose any cut in PTA services.
 - (C) The last time the PTA petitioned for a 15 percent fare increase, the petition was denied.
 - (D) The PTA's budget deficit is 40 percent larger this year than it was last year.
 - (E) The PTA's bus drivers recently won a new contract that guarantees them a significant cash bonus each time they work the late-night shifts.
19. The Volunteers for Literacy Program would benefit if Dolores takes Victor's place as director, since Dolores is far more skillful than Victor is at securing the kind of financial support the program needs and Dolores does not have Victor's propensity for alienating the program's most dedicated volunteers.

The pattern of reasoning in the argument above is most closely paralleled in which one of the following?

 - (A) It would be more convenient for Dominique to take a bus to school than to take the subway, since the bus stops closer to her house than does the subway and, unlike the subway, the bus goes directly to the school.
 - (B) Joshua's interest would be better served by taking the bus to get to his parent's house rather than by taking an airplane, since his primary concern is to travel as cheaply as possible and taking the bus is less expensive than going by airplane.
 - (C) Belinda will get to the concert more quickly by subway than by taxi, since the concert takes place on a Friday evening and on Friday evenings traffic near the concert hall is exceptionally heavy.
 - (D) Anita would benefit financially by taking the train to work rather than driving her car, since when she drives she has to pay parking fees and the daily fee for parking a car is higher than a round-trip train ticket.
 - (E) It would be to Fred's advantage to exchange his bus tickets for train tickets, since he needs to arrive at his meeting before any of the other participants and if he goes by bus at least one of the other participants will arrive first.

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20. Students from outside the province of Markland, who in any given academic year pay twice as much tuition each as do students from Markland, had traditionally accounted for at least two-thirds of the enrollment at Central Markland College. Over the past 10 years academic standards at the college have risen, and the proportion of students who are not Marklanders has dropped to around 40 percent.

Which one of the following can be properly inferred from the statements above?

- (A) If it had not been for the high tuition paid by students from outside Markland, the college could not have improved its academic standards over the past 10 years.
 - (B) If academic standards had not risen over the past 10 years, students who are not Marklanders would still account for at least two-thirds of the college's enrollment.
 - (C) Over the past 10 years, the number of students from Markland increased and the number of students from outside Markland decreased.
 - (D) Over the past 10 years, academic standards at Central Markland College have risen by more than academic standards at any other college in Markland.
 - (E) If the college's per capita revenue from tuition has remained the same, tuition fees have increased over the past 10 years.
21. Several years ago, as a measure to reduce the population of gypsy moths, which depend on oak leaves for food, entomologists introduced into many oak forests a species of fungus that is poisonous to gypsy moth caterpillars. Since then, the population of both caterpillars and adult moths has significantly declined in those areas. Entomologists have concluded that the decline is attributable to the presence of the poisonous fungus.

Which one of the following, if true, most strongly supports the conclusion drawn by the entomologists?

- (A) A strain of gypsy moth whose caterpillars are unaffected by the fungus has increased its share of the total gypsy moth population.
- (B) The fungus that was introduced to control the gypsy moth population is poisonous to few insect species other than the gypsy moth.
- (C) An increase in numbers of both gypsy moth caterpillars and gypsy moth adults followed a drop in the number of some of the species that prey on the moths.
- (D) In the past several years, air pollution and acid rain have been responsible for a substantial decline in oak tree populations.
- (E) The current decline in the gypsy moth population in forests where the fungus was introduced is no greater than a decline that occurred concurrently in other forests.

22. Director of personnel: Ms. Tours has formally requested a salary adjustment on the grounds that she was denied merit raises to which she was entitled. Since such grounds provide a possible basis for adjustments, an official response is required. Ms. Tours presents compelling evidence that her job performance has been both excellent in itself and markedly superior to that of others in her department who were awarded merit raises. Her complaint that she was treated unfairly thus appears justified. Nevertheless, her request should be denied. To raise Ms. Tours's salary because of her complaint would jeopardize the integrity of the firm's merit-based reward system by sending the message that employees can get their salaries raised if they just complain enough.

The personnel director's reasoning is most vulnerable to criticism on the grounds that it

- (A) fails to consider the possibility that Ms. Tours's complaint could be handled on an unofficial basis
- (B) attempts to undermine the persuasiveness of Ms. Tours's evidence by characterizing it as "mere complaining"
- (C) sidesteps the issue of whether superior job performance is a suitable basis for awarding salary increases
- (D) ignores the possibility that some of the people who did receive merit increases were not entitled to them
- (E) overlooks the implications for the integrity of the firm's merit-based reward system of denying Ms. Tours's request

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23. S: People who are old enough to fight for their country are old enough to vote for the people who make decisions about war and peace. This government clearly regards 17 year olds as old enough to fight, so it should acknowledge their right to vote.
- T: Your argument is a good one only to the extent that fighting and voting are the same kind of activity. Fighting well requires strength, muscular coordination, and in a modern army instant and automatic response to orders. Performed responsibly, voting, unlike fighting, is essentially a deliberative activity requiring reasoning power and knowledge of both history and human nature.

T responds to S's argument by

- (A) citing evidence overlooked by S that would have supported S's conclusion
- (B) calling into question S's understanding of the concept of rights
- (C) showing that S has ignored the distinction between having a right to do something and having an obligation to do that thing
- (D) challenging the truth of a claim on which S's conclusion is based
- (E) arguing for a conclusion opposite to the one drawn by S

24. The role of the Uplandian supreme court is to protect all human rights against abuses of government power. Since the constitution of Uplandia is not explicit about all human rights, the supreme court must sometimes resort to principles outside the explicit provisions of the constitution in justifying its decisions. However, human rights will be subject to the whim of whoever holds judicial power unless the supreme court is bound to adhere to a single objective standard, namely, the constitution. Therefore, nothing but the explicit provisions of the constitution can be used to justify the court's decisions. Since these conclusions are inconsistent with each other, it cannot be true that the role of the Uplandian supreme court is to protect all human rights against abuses of government power.

The reasoning that leads to the conclusion that the first sentence in the passage is false is flawed because the argument

- (A) ignores data that offer reasonable support for a general claim and focuses on a single example that argues against that claim
- (B) seeks to defend a view on the grounds that the view is widely held and that decisions based on that view are often accepted as correct
- (C) rejects a claim as false on the grounds that those who make that claim could profit if that claim is accepted by others
- (D) makes an unwarranted assumption that what is true of each member of a group taken separately is also true of the group as a whole
- (E) concludes that a particular premise is false when it is equally possible for that premise to be true and some other premise false

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.