

SECTION I

Time—35 minutes

20 Questions

Directions: Each group of questions in this section is based on a set of conditions. In answering some of the questions, it may be useful to draw a rough diagram. Choose the response that most accurately and completely answers each question and blacken the corresponding space on your answer sheet.

Questions 1–6

Meena has six colored pencils—green, maroon, orange, red, white, and yellow. She sketches a drawing using exactly five of the six pencils, one pencil at a time. The following conditions must hold:

No pencil is used more than once.

Either the maroon or the yellow pencil is not used.

The red pencil is used at some time before the green.

The red pencil is used at some time before either the orange or the yellow, but not before both.

The green pencil is used at some time before either the maroon or the white, but not before both.

1. Which one of the following could be an accurate list of the pencils used, from first to fifth?
(A) orange, green, red, maroon, yellow
(B) red, green, orange, white, maroon
(C) red, orange, maroon, white, green
(D) white, red, orange, green, maroon
(E) white, yellow, orange, green, red

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2. Which one of the following could be true?
- (A) The maroon pencil is used first, whereas the white is used second.
 - (B) The white pencil is used first, whereas the green is used second.
 - (C) The yellow pencil is used first, whereas the orange is used second.
 - (D) The yellow pencil is used first, whereas the orange is used fourth.
 - (E) The yellow pencil is used fourth, whereas the maroon is used fifth.
3. Which one of the following CANNOT be the color of the fifth pencil used?
- (A) green
 - (B) maroon
 - (C) orange
 - (D) white
 - (E) yellow
4. Which one of the following could be an accurate list of the pencils used, from first to fifth?
- (A) maroon, green, white, red, orange
 - (B) maroon, red, green, white, yellow
 - (C) red, green, orange, white, yellow
 - (D) red, white, orange, green, maroon
 - (E) white, red, maroon, green, orange
5. Which one of the following CANNOT be the color of the third pencil used?
- (A) green
 - (B) maroon
 - (C) red
 - (D) white
 - (E) yellow
6. Suppose that the condition that either the maroon or the yellow pencil is not used no longer holds. If all other conditions remain in effect, then which one of the following could be an accurate list of the pencils used, from first to fifth?
- (A) maroon, red, green, orange, yellow
 - (B) maroon, yellow, red, green, white
 - (C) orange, green, red, yellow, maroon
 - (D) orange, red, maroon, green, white
 - (E) white, red, green, maroon, yellow

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Questions 7–12

A bird sanctuary contains birds of at least two of the following six kinds—kingfishers, mynas, peacocks, robins, sparrows, and woodpeckers. No other kinds of birds are in the sanctuary. The following conditions must hold:

Woodpeckers are not in the sanctuary if mynas are.

Peacocks are not in the sanctuary if robins are.

Either robins or woodpeckers, but not both, are in the sanctuary.

Woodpeckers are in the sanctuary if kingfishers, sparrows, or both are in the sanctuary.

7. Which one of the following could be a complete and accurate list of the kinds of birds in the sanctuary?
- (A) kingfishers, mynas
 - (B) peacocks, woodpeckers
 - (C) kingfishers, robins, sparrows
 - (D) mynas, peacocks, robins
 - (E) mynas, peacocks, sparrows

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8. What is the maximum number of the kinds of birds that could be in the sanctuary?
- (A) two
 - (B) three
 - (C) four
 - (D) five
 - (E) six
9. If both kingfishers and sparrows are in the sanctuary, then each of the following could be true EXCEPT:
- (A) Exactly three kinds of birds are in the sanctuary.
 - (B) Exactly four kinds of birds are in the sanctuary.
 - (C) There are peacocks in the sanctuary.
 - (D) There are robins in the sanctuary.
 - (E) There are woodpeckers in the sanctuary.
10. If there are no kingfishers in the sanctuary, then which one of the following must be true?
- (A) There are no sparrows in the sanctuary.
 - (B) There are no woodpeckers in the sanctuary.
 - (C) There are peacocks in the sanctuary.
 - (D) At least three kinds of birds are in the sanctuary.
 - (E) At most three kinds of birds are in the sanctuary.
11. If there are no robins in the sanctuary, then which one of the following is a kind of bird that CANNOT be in the sanctuary?
- (A) kingfishers
 - (B) mynas
 - (C) peacocks
 - (D) sparrows
 - (E) woodpeckers
12. If peacocks are in the sanctuary, then which one of the following must be true?
- (A) Exactly two kinds of birds are in the sanctuary.
 - (B) Exactly three kinds of birds are in the sanctuary.
 - (C) Exactly four kinds of birds are in the sanctuary.
 - (D) There are no kingfishers in the sanctuary.
 - (E) There are no mynas in the sanctuary.

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Questions 13–16

Last year, seven stores—Faroj’s Appliances, Good Buy, Intelligent Office, LANs for Less, Networks Unlimited, Silicon Village, and Uptown Computing—each sold exactly 100, 200, 300, 400, or 500 computers, consistent with the following conditions:

Good Buy sold exactly the same number of computers as Networks Unlimited did.

Intelligent Office sold exactly the same number of computers as Uptown Computing did.

Neither Feroj’s Appliances nor Silicon Village sold exactly the same number of computers as any other store.

LANs for Less sold more computers than Uptown Computing did.

Intelligent Office sold more computers than Good Buy did.

13. Which one of the following could be an accurate matching of the stores to the exact number of computers each sold last year?
- (A) Feroj’s Appliances: 100
Good Buy: 200
Intelligent Office: 300
LANs for Less: 400
Networks Unlimited: 200
Silicon Village: 500
Uptown Computing: 300
- (B) Feroj’s Appliances: 100
Good Buy: 200
Intelligent Office: 400
LANs for Less: 300
Networks Unlimited: 200
Silicon Village: 500
Uptown Computing: 400
- (C) Feroj’s Appliances: 500
Good Buy: 200
Intelligent Office: 300
LANs for Less: 400
Networks Unlimited: 500
Silicon Village: 100
Uptown Computing: 300
- (D) Feroj’s Appliances: 500
Good Buy: 300
Intelligent Office: 200
LANs for Less: 400
Networks Unlimited: 300
Silicon Village: 100
Uptown Computing: 200
- (E) Feroj’s Appliances: 500
Good Buy: 300
Intelligent Office: 400
LANs for Less: 200
Networks Unlimited: 300
Silicon Village: 500
Uptown Computing: 100

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14. Which one of the following stores CANNOT have sold exactly 400 computers last year?
- (A) Faroj's Appliances
 - (B) Good Buy
 - (C) Intelligent Office
 - (D) Silicon Village
 - (E) Uptown Computing
15. Which one of the following stores CANNOT have sold exactly 200 computers last year?
- (A) Faroj's Appliances
 - (B) Good Buy
 - (C) Intelligent Office
 - (D) LANs for Less
 - (E) Silicon Village

16. Which one of the following must be true?
- (A) Faroj's Appliances sold more computers last year than Good Buy did.
 - (B) Intelligent Office sold more computers last year than Silicon Village did.
 - (C) LANs for Less sold more computers last year than Faroj's Appliances did.
 - (D) Silicon Village sold more computers last year than Good Buy did.
 - (E) Uptown Computing sold more computers last year than Networks Unlimited did.

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Questions 17–20

Arbutus College owns exactly four houses that it leases to faculty or students. Of these houses, no two are exactly the same distance from Arbutus’s campus, and each house is either a student house (occupied entirely by students) or a faculty house (occupied entirely by faculty). The lease length for each house is one, two, or three semesters. The following conditions must hold:

No student house has a three-semester lease.

At least two houses each have longer leases than does the house closest to campus.

Every student house (if there are any) is farther from campus than any faculty house (if there are any).

17. Which one of the following could be a complete and accurate list of the leases of the student houses, ordered from the student house closest to campus to the student house farthest from campus?
- (A) one semester, one semester
 - (B) two semesters, three semesters
 - (C) one semester, two semesters, one semester
 - (D) one semester, two semesters, two semesters, one semester
 - (E) one semester, two semesters, three semesters, two semesters

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18. If the house farthest from campus has a lease longer than that of each of the other houses, then which one of the following could be true?
- (A) Each faculty house has a two-semester lease.
 - (B) Exactly two houses each have a one-semester lease.
 - (C) Exactly three houses each have a two-semester lease.
 - (D) None of the houses has a one-semester lease.
 - (E) None of the houses has a two-semester lease.
19. What is the maximum number of houses that could all be student houses with two-semester leases?
- (A) zero
 - (B) one
 - (C) two
 - (D) three
 - (E) four
20. Which one of the following must be true of the two houses that are neither the house farthest from campus nor the house closest to campus?
- (A) At least one of them has a lease the same length as that of the house closest to campus.
 - (B) At least one of them has a lease longer than that of the house closest to campus.
 - (C) At least one of them has a lease shorter than three semesters.
 - (D) Neither of them is a student house.
 - (E) Both of them are student houses.

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.

SECTION II

Time—35 minutes

23 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. Jay: The development of a plain writing style in seventeenth-century England was mainly due to an increase in the literacy rate. To reach moderately educated readers, writers simplified their style.

Chandra: No, the pivotal factor was the increasing interest in science among the most highly educated people; a complex, artificial style, however beautiful, interfered with the presentation of scientific facts.

Jay's and Chandra's comments indicate that they disagree about

- (A) whether the quality of written works in seventeenth-century England increased or decreased as a result of the development of a plain writing style
- (B) the extent of the changes in writing style that took place in seventeenth-century England
- (C) whether there was an increase in the percentage of people who were able to read in England during the seventeenth century
- (D) how widespread the dissemination of scientific knowledge in seventeenth-century England was
- (E) what was the primary cause of the development of a plain writing style in seventeenth-century England

2. On the nights immediately following the mysterious Tunguska event, which destroyed a tract of Siberian wilderness in 1908, eyewitnesses reported seeing noctilucent clouds—brilliant night-visible clouds made up of ice particles that form rarely and only at very high altitudes. Recently, noctilucent clouds have been observed on the nights following launches of rockets that release large amounts of water vapor into the upper atmosphere. This shows that it was a comet impact and not the impact of an asteroid that caused the destruction in Siberia.

The argument depends on assuming which one of the following?

- (A) Comets but not asteroids release large amounts of water vapor into the upper atmosphere when they collide with Earth.
- (B) Noctilucent clouds are visible for many consecutive nights following the release of water vapor into the upper atmosphere.
- (C) Comets collide with Earth more frequently than asteroids do.
- (D) Eyewitnesses have reported seeing noctilucent clouds after asteroids have collided with Earth.
- (E) The fact that noctilucent clouds are made of ice particles in the upper atmosphere was only recently discovered.

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3. Children in the first six standards of school who are publicly singled out for enthusiastic praise by their teachers show marked improvement in their schoolwork. But students in higher standards tend to react negatively to such praise, and their academic performance tends to decline as a result.

Which one of the following most helps to explain the differing reactions described above?

- (A) Younger children respond more to the tone of voice with which criticism is offered than to its explicit content.
- (B) Older students are less concerned with the approval of teachers than with the details of the criticisms and suggestions the teachers make.
- (C) Older students are more likely than younger students to believe that there are better indicators of their academic performance than the grades they earn in class.
- (D) Older students believe that their teachers' praise will inspire the disapproval of their peers, to which they have a greater aversion than do younger students.
- (E) Younger students are more concerned with public appearance than are older students.

4. Bunty: The primary job of police officers is keeping the peace. Since their subsidiary jobs, such as controlling traffic, hinder their performance of the primary one, people other than police officers should be hired to perform the subsidiary jobs.

Naina: To perform their primary job well, police officers must have the trust of citizens. They gain that trust by performing their subsidiary jobs, which are the only functions most citizens see them fulfill.

Bunty and Naina disagree with each other about

- (A) whether the primary job of police officers is keeping the peace
- (B) whether the subsidiary jobs police officers perform enable them to perform their primary job effectively
- (C) whether police officers need to win the trust of law-abiding citizens in order to keep the peace effectively
- (D) whether police officers are performing their primary jobs as well as they should be
- (E) whether police officers can effectively gain the trust of citizens

5. Any organization must consider changing its basic structure if there is a dramatic change in its size. Doubling or tripling in size can lead to inefficiency and mismanagement, which restructuring often alleviates. Experience further shows that the more dramatic the change in size, the more fundamental the restructuring needs to be. Therefore, any organization must consider changing its basic structure once it is 20 years old.

The argument's conclusion follows logically if which one of the following is assumed?

- (A) No organization that has remained the same size for 20 years is efficient.
- (B) Any organization that has been restructured is prepared to double or triple in size.
- (C) No organization that has not changed in size needs restructuring.
- (D) Any organization that has existed for 20 years has undergone a dramatic change in size.
- (E) No organization that has not been restructured is as efficient as any organization that has been restructured.

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6. If deep-sea divers ascend too rapidly from ocean depths, the decreasing pressure causes nitrogen to be released as gas bubbles in the blood. This condition is known as “the bends.” Sea snakes, who, like humans, breathe air that contributes nitrogen to the blood, are nevertheless able to make extremely rapid ascents and descents in ocean waters without suffering from the bends.

Which one of the following, if true, contributes most to an explanation of the difference described between humans and sea snakes?

- (A) Sea snakes, unlike humans, can excrete nitrogen from their blood into the sea by means of extremely small blood vessels beneath their skin.
 - (B) Human deep-sea divers are trained to make several stops on ascending from deep water in order to adjust to decreasing pressure gradually, whereas sea snakes ascend from ocean depths without stopping.
 - (C) The lung of the sea snake extends from its head to its tail and, when inflated, occupies about 10 percent of the volume of the sea snake’s body.
 - (D) A rapid release of bubbles of nitrogen gas into the blood inhibits circulation and can deprive organs of the blood they need to function.
 - (E) The rapidity with which sea snakes are able to descend or ascend in ocean water is partially determined by the degree of buoyancy permitted by the inflation of the sea snake’s lung.
7. Knowledge in all fields is expanding and Ph.D. students take longer than ever before—sometimes eight years—to complete degree requirements. Yet, instead of agreeing that the longer period is needed, some noted scholars are recommending that Ph.D. programs reduce their requirements and have students finish within three years.

Which one of the following, if true, would most contribute to a justification of the noted scholars’ recommendation?

- (A) Quality of research matters more than quantity, even though, on average, the more time a Ph.D. student spends on research, the greater the quantity of research produced.
- (B) Some unusually talented Ph.D. students already complete all Ph.D. requirements within three years.
- (C) For at least the last 50 years, no researcher has been able to be conversant with any more than a small fraction of the existing knowledge within any given field.
- (D) Many outstanding scholars in the past have achieved great things in their fields without ever having a Ph.D. or equivalent degree.
- (E) The most important objectives of Ph.D. programs can be adequately fulfilled with the reduced requirements recommended.

8. Loggerhead turtles are an endangered species. Aquarium officials presumably know and are concerned about the declining number of wild loggerheads. Nevertheless, aquariums keep loggerheads and display them. These turtles are being kept in captivity and are thus prevented from adding to the population of wild turtles.

Each of the following, if true, contributes to an explanation of why aquarium officials keep loggerheads in captivity EXCEPT:

- (A) The adult loggerheads in captivity are too severely injured to survive in the wild.
- (B) The baby loggerheads in captivity are hatchlings too weak to survive in the wild.
- (C) The population of loggerheads in captivity has declined slightly over the last 20 years.
- (D) The captive loggerheads are used to help educate the public about the needs of wild loggerheads so that the public will take greater care not to harm them.
- (E) The captive loggerheads are bred, and their offspring are released into the wild, which helps increase the number of wild turtles.

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9. Politician: Members of the national legislature have received a very large number of phone calls and letters from people wanting to express their opinions about the new bill before the legislature, which would increase the current tax on bidis and cigarettes by one rupee per pack to pay for new antismoking advertisements. Since a great majority of these people expressed opposition to the bill, it is clear that the public overwhelmingly opposes this tax increase.

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

- (A) People who do not smoke bidis or cigarettes but work in tobacco-related industries are just as likely as smokers to oppose a bidi and cigarette tax.
 - (B) Increasing the tax on bidis and cigarettes by one rupee per pack would reduce bidi and cigarette consumption so that total revenue from such taxes would not increase.
 - (C) People who feel strongly about a particular bill are more likely to express their opinions to a legislator by phone than by letter.
 - (D) Most antismoking advertisements are currently paid for by private organizations rather than being funded by taxes paid to the government.
 - (E) People who oppose a tax bill are far more likely to contact a legislator to express their opinions than are those who do not oppose the bill.
10. Anju: The Adkjos corporation does not fund social programs. Therefore, although Adkjos does make fine products, it is not socially responsible.

Sanjeev: That doesn't mean that Adkjos is not socially responsible. If a business offers good pay and benefits to its employees, and fine service and value to customers, it is socially responsible. Adkjos does those things.

On the basis of their statements, Anju and Sanjeev are committed to disagreeing about which one of the following?

- (A) To be socially responsible, it is not enough for a company to make fine products.
- (B) Socially responsible companies offer better pay than companies that are not socially responsible.
- (C) Not all companies that make fine products fund social programs.
- (D) Funding social programs is required for a business to be socially responsible.
- (E) Adkjos treats its employees and customers well.

11. Two crucial claims of relativity theory can be directly confirmed. Utilizing elementary particles in high-energy accelerators, we can demonstrate that at high velocities objects are subject to time dilation and an increase in mass. However, a third claim of the theory, the Lorentz contraction thesis, which is connected to the other two, is not directly confirmable. But the fact that the theory in general is supported by experimental results indirectly confirms the contraction thesis.

Which one of the following most accurately expresses the principle underlying the reasoning above?

- (A) A thesis that is related to other theses can be indirectly confirmed by the direct verification of the others.
- (B) The theses of a physical theory that cannot be confirmed by observable phenomena can only be confirmed indirectly.
- (C) One must confirm all the theses of a theory before accepting the theory generally.
- (D) Any theory that is not inconsistent with experimental results is acceptable.
- (E) A thesis that is not directly confirmable should be counted as confirmed only when the theory of which it is part is supported by experimental results.

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12. Exposure to a large dose of something that causes bodily damage—such as excessive heat, poison, or nuclear radiation—is of course harmful to an organism. But, surprisingly, exposure to small doses of such stressors has been shown to extend life span in various species, including fruit flies, protozoans, worms, and rodents.

Which one of the following, if true, most helps to explain the surprising phenomenon described above?

- (A) In most of the species in which exposure to small doses of stressors increases longevity, the increase is so small that it is barely measurable.
 - (B) Exposure to small doses of stressors stimulates an organism's natural repair mechanisms to fix any damage caused by the stressors as well as some unrelated damage.
 - (C) Exposure to a given dose of a poison or other stressor may cause more serious damage to some members of a species than to others.
 - (D) Repeated exposure to a stressor is much more likely than a single exposure to cause permanent damage to an organism.
 - (E) Even a substance that is extremely toxic will not harm an organism if the organism is exposed to only an extremely small quantity of the substance.
13. Most people prefer to hire people they know. Thus it is difficult for people without business contacts to find good jobs. The only way to help such people find jobs is through nonfinancial incentives to change employers' behavior.

Which one of the following most accurately describes the role played in the argument by the claim that most people prefer to hire people they know?

- (A) It is cited as an explanation of why employers never hire those whom they do not know.
- (B) It is cited as an example of the general principle that nonfinancial incentives to change employers' behavior are necessary.
- (C) It is a conclusion for which the only support offered is that there is a need for nonfinancial incentives to change employers' behavior.
- (D) It is a hypothesis to which the claim that people without business contacts have difficulty in finding good jobs is offered as an objection.
- (E) It is a premise offered in support of the claim that people without business contacts have difficulty in finding good jobs.

14. An energy company proposes placing 250 giant turbines into the Gulf Stream to generate electricity for North America. Some Europeans worry, however, about the potential threat to their climate. Without the warming effects of the Gulf Stream, much of Europe would be as cold as Labrador and the Yukon, areas at the same latitude that are unaffected by warming currents. However, their concern is unwarranted: the company claims that 250 turbines would slow the Gulf Stream about 1 percent, which is not enough to affect the European climate.

Which one of the following most accurately describes a flaw in the reasoning of the argument?

- (A) The argument relies on an authority that may be biased.
- (B) The argument presumes, without providing justification, that latitude and temperature are linked.
- (C) The argument takes for granted that Europe's climate is more important than meeting the energy needs of North America.
- (D) The argument ignores the potential threat to marine life posed by placing turbines in the ocean.
- (E) The conclusion of the argument contradicts at least one of its premises.

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15. Like airplane accidents, most accidents in medical care result from human error, particularly failures in communication, leadership, and decision making. Following the introduction of standard procedures governing these three areas, the airline industry succeeded in significantly reducing the number and severity of accidents. Since airplane flights and health care delivery both require the cooperation of groups of people with diverse knowledge and skills, the medical care community should adopt a similar set of procedures in order to reduce errors.

Which one of the following is a technique of reasoning used in the argument?

- (A) defending a general principle by presenting two separate successful applications of that principle
 - (B) justifying the introduction of a set of procedures by outlining undesirable results in an analogous situation in which those procedures were not followed
 - (C) attempting to undermine a generalization by providing a counterexample to that generalization
 - (D) arguing for taking a course of action based on results of taking such action in an analogous situation
 - (E) providing examples in order to show that two seemingly dissimilar situations are in fact the same
16. In a certain democratic country the legislature passed a new tax law over the principled objections of the parliamentary opposition. Some opposition leaders broke the new law by refusing to pay the new tax. They defended their lawbreaking by citing the historical precedent in the country of activists' having to break laws in winning for women the right to vote.

Which one of the following, if true, most weakens the opposition leaders' argument in defense of their actions?

- (A) Although they had principled objections to the new law, the opposition leaders derived a personal monetary benefit from breaking the law.
- (B) The activists fought for equality of the sexes, a principle easier to define than the goal pursued by the opposition leaders.
- (C) The opposition leaders, unlike the activists, were part of the democratic process that they are defying.
- (D) The opposition leaders, unlike the activists, broke the law in a way that did not directly lead to public confrontations with law enforcement personnel.
- (E) The opposition leaders, unlike the activists, fought for a return to an earlier state of affairs.

17. Small species, such as fathead minnows and waterfleas, can be used to uncover the quantity of toxic chemicals being dumped into rivers and streams. Under new rules issued in a certain country, these "indicator" species will be used to test the effluent pouring out of sewage treatment plants and factories among the country's waterways. If many of these animals die as a result of the test, the country is going to require that pollution levels be reduced. The new rules will apply to about 450 of the 2,000 factories and sewage treatment plants that legally discharge into the country's rivers and streams.

Which one of the following can be inferred from the passage above?

- (A) Under the new rules, certain small species will be introduced into water samples taken from 2,000 sites around the country.
- (B) If, after the test, the country does not require that pollution levels be reduced, then few or none of the individuals of the indicator species died as a result of the test.
- (C) If few individuals of the indicator species die during the test period, the country will not take action on water pollution.
- (D) In the country in question, there are 1,550 factories and sewage treatment plants that discharge pollutants illegally.
- (E) Under the new rules, 450 factories and sewage treatment plants will not be permitted to discharge into the country's rivers and streams.

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18. Aesthetician: Zahib’s rejection of contemporary literature’s aesthetic value depends on his claim that today’s writing generally fails to grapple seriously enough with life’s deepest ethical questions—whereas great books, he maintains, present profound moral lessons and “the stuff of conscience.” But what resounding moral lesson does Vikram Seth’s *A Suitable Boy* or Devaki Nandan Khatri’s *Chandrakanta* impart? People read these two great novels because they are engaging, even thrilling, stories. The absence of a profound moral lesson in no way detracts from the aesthetic value of a novel.

The aesthetician criticizes Zahib’s position by arguing that it depends on the questionable premise that

- (A) a novel that presents a profound moral lesson can have aesthetic value
 - (B) today’s writing generally fails to confront deep ethical questions
 - (C) for a literary work to have aesthetic value it must present a profound ethical message
 - (D) only novels that have aesthetic value fail to present profound moral lessons
 - (E) there is no distinction between engaging stories and profound moral lessons
19. Paternalism is the practice by some governments of imposing regulations meant to promote their citizens’ own good regardless of whether the citizens consent to those regulations. However, many members of free societies disapprove when individual freedom is curtailed for the sake of what the government deems to be the citizens’ own good. They generally believe that they, not the government, know what activities are in their best interest.
- If the statements above are true, which one of the following must also be true?
- (A) The good of citizens is usually not advanced by the practice of paternalism.
 - (B) The goals of free societies and the goals of their citizens always conflict.
 - (C) No truly free societies have governments that practice paternalism.
 - (D) In free societies, many of a government’s citizens disapprove of their government’s acts of paternalism.
 - (E) In free societies, many of a government’s citizens know what activities are in their own best interests better than their government does.

20. Historian: Concern with achievement and power surged dramatically in the latter part of the eighteenth century, which is around the time that the Industrial Revolution began in Europe. So, it is clear that this surge in concern with achievement and power was a result of the Industrial Revolution.

The reasoning in the argument is flawed because

- (A) it fails to adequately take into account that the beginning of the Industrial Revolution in Europe cannot be located with any great precision
 - (B) it fails to consider that there was some concern with achievement and power before the Industrial Revolution
 - (C) increasing concern with achievement and power may very well have been a cause of the Industrial Revolution
 - (D) there may very well have been surges in concern with achievement and power at times other than during the Industrial Revolution
 - (E) it ignores the fact that the Industrial Revolution did not reach its full maturity until the nineteenth century
21. Many famous painters employ preliminary sketches before embarking on the final version of their work. Yet frequently these preliminary sketches are beautiful and accomplished works of art in their own right. Museums with small budgets will display these preliminary works instead of what the artists consider to be their finished works of art.
- Which one of the following propositions is best illustrated by the situation described above?
- (A) Artists are not the best judges of the value of their own work.
 - (B) Museums with small budgets cannot be as interesting as those with large budgets.
 - (C) A finished work of art cannot be produced without the execution of a high-quality preliminary sketch.
 - (D) Artifacts may have uses different from those intended by their creators.
 - (E) Artists’ preliminary sketches are as beautiful as the final versions of their work.

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22. In a recent experiment, half the subjects were expert chess players; the other half had never played. First, the subjects were shown chessboards at various stages of actual games for ten seconds. Each expert was able to recall the positions of the pieces at least twice as well as any nonplayer. Second, the subjects were shown chessboards with the pieces randomly arranged, again for ten seconds. In this case the experts recalled the positions only marginally better, on average, than did the nonplayers.

Which one of the following is most strongly supported by the results of the experiment?

- (A) People who play chess have better memories than people who do not play chess.
- (B) People who play chess do not have better memories than people who do not play chess.
- (C) People remember information better when they can organize it according to rules that they know.
- (D) An expert is more likely than a nonexpert to attempt to assimilate new information according to known rules and principles.
- (E) Ten seconds is not long enough to memorize random information.

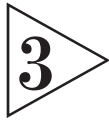
23. Professor: Different countries have different economic systems, but all economic systems have prosperity as their primary goal. Because people all want the same thing, there cannot be radical disagreement among people from different economic systems about practical economic matters. Thus all apparent disagreement in practical economic issues is illusory.

Which one of the following most accurately describes a reasoning error in the professor's argument?

- (A) The argument contradicts itself about whether there are in fact differences between economic systems in different countries.
- (B) The argument bases a general conclusion about economic systems on one example of such a system, which there is reason to think is atypical.
- (C) The argument depends on using the key term "economic system" in two incompatible senses.
- (D) The argument fails to justify its presumption that the source of all apparent disagreement in practical economic issues can be discovered.
- (E) The argument ignores the possibility that groups of people may share the same goal but not agree about how best to achieve that goal.

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.



SECTION III

Time—35 minutes

24 Questions

Directions: Each set of questions in this section is based on a single passage or a pair of passages. The questions are to be answered on the basis of what is stated or implied in the passage or pair of passages. For some of the 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, and blacken the corresponding space on your answer sheet.

The effects of the introduction of language upon human behavior are easily surmised. Language allowed rules for proper behavior to be communicated to children by precept and enforced among adults by gossip. Effective responses to different circumstances were usually guaranteed by traditional rules of behavior, and frictions were minimized because everyone knew what to expect of others in all ordinary situations. Such knowledge minimized quarrels, maximized effective cooperation, and allowed an increasingly complex division of labor among large numbers of individuals who spoke the same language. Language, however, also makes it easier to improve our behavioral responses when experience disappoints expectation. It helps us to move to and fro in imagined time, remembering useful things from the past and planning what to do in the future.

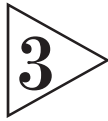
Language is so powerful and pervasive in human lives that it seems right to say that our ancestors became fully human only when they began to use language and to act not on the basis of sensory stimuli alone but in accordance with plans and hopes and verbally formulated ideas about themselves and everything around them. Once the face-to-face verbal coordination of most everyday behavior had been achieved, major subsequent landmarks of human history depended principally on improvements in communication that allowed messages to travel farther and more accurately across time and distance than spoken words ordinarily do.

Networks of messages, delivered in verbal form, supplemented by gesture, and sometimes solemnized by ritual, created and sustained local human communities. Eventually an increasing number of these primary communities came to be incorporated into larger communication networks centered in cities and sustaining what we call civilizations. As compared to primary communities, civilizations were tumultuous and unstable social structures, but they were also more powerful, exerting control over the natural environment and coordinating the actions of larger numbers of persons partly by obedience to commands, and partly by negotiated, more or less voluntary, exchanges of goods and services. Ever since the first civilizations arose, civilized social complexity has tended to spread, until in our own time almost all humankind is caught up in a single global system, furiously exchanging messages and upsetting traditional ways of life almost everywhere.

The details of how small roving bands with only sporadic outside contacts evolved into today's unified world cannot be fully known. However, an imaginative historian can hope to discern major landmarks in the civilizing process by focusing on breakthroughs in communication that altered the range and flow of messages among human populations, thereby accelerating the propagation of novelties and meeting human needs and wants better than before.

1. Which one of the following most accurately expresses the main point of the passage?
 - (A) The pace of modern communication has upset traditional ways of life throughout the world.
 - (B) Our ancestors became fully human only when they began to use language to move to and fro in imagined time.
 - (C) The power of human communication will inevitably overcome traditional ways of life and create a single global system.
 - (D) The details of the history of language cannot be fully known, but the behavioral effects of the introduction of language are easily surmised.
 - (E) The development of human civilization was fundamentally dependent on language and communication.
2. According to the passage, one way in which urban civilizations coordinate the behavior of large numbers of people more powerfully than primary communities can is through
 - (A) gossip
 - (B) ritual
 - (C) police power
 - (D) negotiated transactions
 - (E) division of labor

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3. By “imagined time” (line 16) the author most likely means
- (A) contrary-to-fact situations
 - (B) time prior to historical records
 - (C) the time of legends and myths
 - (D) mental representations of the past and future
 - (E) occasions when experience disappoints expectation
4. All of the following meet the author’s standard for identifying major landmarks of human history EXCEPT:
- (A) the development of ornamental calligraphy
 - (B) the development of the alphabet
 - (C) the invention of the printing press
 - (D) the development of the Internet
 - (E) the invention of radio
5. Each of the following is mentioned in the passage as something that the use of language does EXCEPT:
- (A) making possible the planning and organization of human endeavors
 - (B) enabling societies to exert control over the natural environment
 - (C) fostering the development of literature and the arts
 - (D) both supporting and upsetting traditional ways of life
 - (E) helping humans better achieve their needs and wants
6. The passage suggests that all of the following are elements of civilization EXCEPT:
- (A) the coordination of people’s everyday behavior
 - (B) a single global language
 - (C) control over nature
 - (D) urbanization
 - (E) social complexity
7. By the term “primary communities” (line 36) the author probably means
- (A) local groups dependent on direct verbal communication
 - (B) any groups of individuals speaking the same language
 - (C) voluntary associations for the exchange of goods and services
 - (D) the cities at the core of particular urban civilizations
 - (E) the first urban civilizations to develop

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The following are two essays on the daguerreotype, a precursor of photography, in which images are produced on a silver-covered copper plate.

Passage A

Though daguerreotypy and photography are obviously more closely related than daguerreotypy and painting, and though we do speak of them together, it is not mere pedantry to insist that the daguerreotype is not a photograph. The daguerreotype, like any art form, demands its own critical vocabulary, its own way of being seen and appreciated. For one thing, it had many inherent restrictions that would not have affected the painter or photographer.

- (5) The daguerreotypist had to arrange a composition that would retain its authority when reduced to about 3 inches (7.62 cm) square, the most common plate size, and had to understand the nature of light and shadow on this highly polished silver plate at various distances from a lens. The length of the exposure in the daguerreotype necessitated the sitter's being quite still for some minutes, though this was eventually reduced to many seconds. Metal clamps were invented to hold the sitter's pose, and children were often tied in place; a stiff unnatural pose is one of the most common defects found in daguerreotypes, the blurred child another. The daguerreotypist had to rely on lighting, posing, composition, and a personal rapport with the sitter in order to overcome these potential problems. Still, those who witnessed the beauty of the form lamented its passing.

Passage B

In March 1839, Samuel Morse wrote that Daguerre's own daguerreotypes were "Rembrandt perfected." He understood what Daguerre had wrought, which was a beautiful leap, not of science, but of technology; here, for the first time, was art immaculately born of chemistry. The beauty of the daguerreotype was a compound of awe and delight. Other writers expressed their astonishment in terms that were quite uniform: "enchanting," "exquisitely perfect," "a piece of fairy work." Such fancy rhetoric is the expression of the unique thrill of seeing a brilliant and novel art form for the first time. And yet a great deal of this original pleasure remains for us today.

- Here in my hand is a daguerreotype. It is not famous, and it cannot be reproduced. The plate, as if it were a jewel, is enclosed in a case stamped with scrollwork. The image inside is the size of one's palm. Unlike any but the smallest paintings, it is an intimate art, meant only for one person at a time. Unfolding the case, one has on the left a rectangle of purple velvet, bordered with embossed gold leaves. The right-hand panel, seen straight on, is baffling: here is a small mirror in which one sees only part of one's face, superimposed onto three ghostlike shapes, gray-negative faces with blank eyes atop the shape of some sort of clothing. But turn the mirror slightly and three



- (55) full characters blaze out at you—a woman, man, and child. They are not merely an amalgam of mercury and silver on a copper surface, but a trace of life frozen forever in the sharpest detail of light and shadow.
8. Each passage provides information sufficient to answer which one of the following questions?
- (A) Roughly how much did it cost to produce a daguerreotype?
- (B) What prevented the widespread use of daguerreotypes for purposes other than portraiture?
- (C) Roughly how large was the typical daguerreotype?
- (D) When did photography on paper supersede daguerreotypy?
- (E) What were some words used by viewers upon experiencing daguerreotypes for the first time?
9. Passage A, but not passage B, argues that
- (A) the daguerreotype is not a photograph
- (B) the daguerreotype is an exquisite art form
- (C) the daguerreotype is the most precise form of pictorial art
- (D) daguerreotypes are commonplace and usually imperfect
- (E) daguerreotypes are complex, elaborate, and expensive
10. Which one of the following most accurately describes how passage B relates to the statement in passage A that the daguerreotype demands its own way of being seen and appreciated?
- (A) Passage B was written as a direct response to this statement.
- (B) Passage B provides information that could be used to undermine this statement.
- (C) Passage B presents an attitude suggesting disagreement with this statement.
- (D) Passage B provides an example that illustrates this statement.
- (E) Passage B provides the historical context necessary to understand this statement.

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11. Which one of the following pairs of lectures is most analogous to passage A and passage B in terms of how these two passages stand in relation to each other?
- (A) Lecture 1 includes an evaluation of a particular pantomime performance; lecture 2 includes an argument regarding the ways in which pantomime may have influenced other art forms.
 - (B) Lecture 1 includes an argument that pantomime is truly an art form; lecture 2 includes a classification of different types of pantomime performances.
 - (C) Lecture 1 includes a discussion of how pantomime developed out of other related performing arts; lecture 2 includes information about how pantomime has been discussed in literature.
 - (D) Lecture 1 includes a conjecture about why pantomime is no longer performed very often; lecture 2 includes an argument that pantomimists rarely achieve high levels of skill in their art.
 - (E) Lecture 1 includes information about the difficulties that pantomimists face in practicing their art; lecture 2 includes a description of a particular pantomime performance.

12. It can be inferred that the authors of both passages believe which one of the following?
- (A) The daguerreotype should not be considered a type of photograph.
 - (B) There is no compelling reason for daguerreotypy not to be practiced today.
 - (C) Though there are striking exceptions, most daguerreotypes are aesthetically unremarkable.
 - (D) Daguerreotypy was not useful for creating landscapes.
 - (E) The demise of daguerreotypy represents a significant aesthetic loss.

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- A commission appointed by the government of the Canadian province of Ontario offered recommendations to assist judges and lawyers in recognizing language or actions that may cause some participants to feel excluded and therefore disenfranchised during court proceedings. One area of focus was the use of courtroom interpreters for people who are not fluent speakers of English or French. Although the Supreme Court of Canada had given explicit direction in 1994 concerning an accused person's right to interpreter assistance, many participants in the Canadian legal system still had concerns about the use of interpreters. In response to these concerns, the commission emphasized that all those involved in proceedings must understand the role of the interpreter. With this objective in mind, the commission stressed that all parties involved in legal proceedings must be made aware of the nature of interpretation.
- (5) In order for judges and lawyers to make effective use of an interpreter in the courtroom, they must understand when an interpreter is necessary, appreciate the time required for interpretation, and develop an awareness of the nature of culturally informed interpretation as contrasted with mere literal interpretation. For example, uninformed judges and lawyers often expect interpreters to translate what is said word for word. In practice, however, this type of translation frequently fails to convey culturally specific meaning accurately and effectively, and is sometimes simply impossible because each language is structurally unique. One interpreter interviewed by the commission explained that while one language may use a word or short phrase to express a particular idea, others have no similarly concise equivalent, requiring the interpreter to use long descriptions of ideas in one language that can be expressed briefly in another. Many interpreters find that in the courtroom, uninformed judges and lawyers may suspect an interpreter of embellishing if the interpreter takes a long time to explain a point.
- (10) Canadian law insists on impartiality in interpretation services. Parties to proceedings, relatives and friends of such parties, or persons otherwise close to the events giving rise to an accusation are ordinarily viewed as inappropriate interpreters in criminal proceedings. However, because some linguistic-minority communities, such as aboriginal communities, are small, in practice, court participants often know the court interpreter. In many cases, prior acquaintance does not matter and may be unavoidable. But to ensure fair proceedings, a defendant, victim, or other witness must fully understand the interpreter's role and be able to object to an interpreter whom he or she does not trust to be impartial. To these ends, the commission recommended that judges make clear in open court that the interpreter is a neutral professional, employed by the court to translate what is being said; that a defendant or any witness may object to a potentially biased interpreter; and that a defendant or an interpreter may request clarification at any time.
- (15)
- (20)
- (25)
- (30)
- (35)
- (40)
- (45)
- (50)
- (55)
- (60)

13. Which one of the following most accurately states the main point of the passage?
- (A) According to a commission in Ontario, the accuracy of courtroom translations can never really be guaranteed, and so judicial fairness can only be ensured by assigning this role to professional interpreters.
- (B) A commission in Ontario has found that impartiality in interpretation services is not fully achievable in certain kinds of communities, so it is vital that all participants in courtroom proceedings held in such communities be able to reject interpreters they believe to be biased.
- (C) An Ontario commission has advised that in order to ensure fairness in court proceedings, the role of the courtroom interpreter must be clearly defined and all courtroom participants must understand the nature of that role.
- (D) An Ontario commission recommends that because existing judicial guidelines for the use of courtroom interpreters do not adequately ensure the impartiality guaranteed by Canadian law for members of small linguistic communities, these guidelines must be amplified so as to accommodate the needs of such communities.
- (E) An Ontario commission has determined that ensuring fair and equitable treatment for all citizens in all judicial proceedings is impossible unless interpreters are neutral professionals with no bias for or against any of the people involved in the case.
14. According to the passage, the inadequacy of word-for-word translations in legal proceedings involving interpreters
- (A) is a limitation of which some lawyers and judges are unaware
- (B) is less noticeable to interpreters than to other participants in legal proceedings
- (C) makes some courtroom participants feel disenfranchised
- (D) makes fair and impartial trials impossible to achieve
- (E) results in needlessly lengthy embellishments on the part of interpreters

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15. By “inappropriate interpreters” (lines 46–47) the author most likely is referring to interpreters
- (A) who tend to elicit the suspicion that they are embellishing rather than merely interpreting
 - (B) without previous experience or training as courtroom translators
 - (C) who have little understanding of the Canadian legal system
 - (D) who are non-native speakers of the language they interpret
 - (E) with a lesser likelihood of being impartial than is ordinarily regarded as desirable
16. With which one of the following statements concerning impartiality in interpretation services would the author be most likely to agree?
- (A) In court cases involving members of small linguistic communities, certain factors that are conducive to accurate and effective interpretation also make complete impartiality of the interpreter more difficult to ensure.
 - (B) The recognition of the need for impartiality in interpretation services was the primary reason for the formation of the Ontario commission.
 - (C) Because skill in providing a truly accurate translation is dependent on a sensitive awareness of the original speaker’s culture, the goals of impartiality and accuracy in translation are irreconcilable.
 - (D) The need for impartiality in translation services is more likely to be satisfied by an alteration of the attitudes and beliefs of judges and lawyers than by an alteration of courtroom procedure.
 - (E) Only if witnesses and defendants are free to appoint their own courtroom interpreters can the need for impartiality in interpretation services be satisfied.
17. According to the passage, the situation in which a courtroom interpreter is acquainted with other participants in courtroom proceedings
- (A) is more of a problem in civil cases than in criminal cases
 - (B) constitutes evidence that the Ontario commission’s recommendations are inadequate
 - (C) does not always affect the fairness of the proceedings negatively
 - (D) is inconsistent with standards of impartiality demanded by Canadian law
 - (E) often leads interpreters to embellish the testimony they are translating
18. The author mentions the fact that ideas expressed concisely in one language may take much longer to express in another language (lines 32–38) primarily in order to
- (A) indicate why some judges and lawyers may harbor doubts about the accuracy of certain courtroom translations
 - (B) emphasize why translations in a judicial context cannot convey the culturally specific meaning of the testimony being interpreted
 - (C) stress the lack of awareness of cultures and languages other than English and French on the part of many judges and lawyers
 - (D) illustrate why it is often difficult to find a competent interpreter
 - (E) explain why an interpreter’s translation of courtroom testimony may be considerably briefer than the original testimony
19. The passage most strongly suggests which one of the following about the role of courtroom interpreters?
- (A) The importance of this role is underestimated by most judges and lawyers.
 - (B) A precise understanding of this role is only likely to be useful to people in small communities.
 - (C) This role can never be occupied by someone who is personally acquainted with the participants in courtroom proceedings.
 - (D) The person playing this role is most likely to achieve his or her legal purpose if everyone involved understands the nature of the role.
 - (E) This role cannot be satisfactorily filled by someone who is unaware of the Ontario commission’s definition of the role.

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For biologists, the term “eye” describes any light-sensitive organ consisting of more than one cell.

Although most animals have eyes, eye structures vary widely. The compound eyes of insects and other

- (5) arthropods, for example, have an architecture strikingly different from the single-lens eyes of vertebrates and mollusks. Until recently, most biologists believed that all the different kinds of eyes evolved independently from as many as forty
- (10) ancestral prototypes, and not from a single ancestral prototype eye.

Traditional means of tracking the evolutionary development of eyes included examinations of internal eye structures, which tended to support the

(15) multiple origin theory despite some anomalies such as the resemblance between mammals’ eyes and the eyes of the nautilus mollusk—animals that are not closely related. Proponents of the multiple origin theory dismissed such examples as textbook cases of

(20) evolutionary convergence: the idea that even strikingly different prototype eyes could evolve into kinds of eyes remarkably similar to each other.

In support of their theory, these biologists point to the fact that different species inhabiting the same

(25) environment frequently have very different eye structures from one another. This lack of correlation between eye structures and physical environments has provided what is perhaps the strongest support for the multiple origin theory. Adherents of the theory argue

(30) that if eyes originated from a single ancestral prototype, then there should be similarity in the patterns of eye evolution in species that evolved under the same environmental conditions. The inability of biologists to identify such evolutionary patterns is

(35) arguably the primary reason for this theory’s widespread acceptance.

In 1993, however, a crucial link was discovered: a control gene that activates the many genes needed for complete eye formation in fruit flies. Analogues to

(40) this gene have since been identified in many organisms, including earthworms, mice, and humans, and are expected to exist in all eye-bearing organisms. Researchers discovered that inserting the control gene present in mice into fruit flies results in the formation

(45) of functional fruit fly eyes. This suggests that the control genes in mice and in fruit flies are interchangeable and hence evolved from a single, common ancestral gene. The same may be true of all of these control genes, which would argue

(50) convincingly against the multiple origin theory and call for a reevaluation of the evidence that seemed to support the theory. For example, the lack of correlation between eye structures and physical environments may have resulted from the advantage

(55) bestowed by eyes. The survival value of sight is perhaps so great that even variations in eyes that might be less than optimal for some individuals in a particular environment are sufficiently advantageous that they allow the individuals to survive and

(60) propagate the variation, thus facilitating the proliferation of variations in eyes even in the absence of an environmental difference.

20. The author mentions that biologists accepted which one of the following as evidence for the theory that eyes evolved from multiple origins?

- (A) the lack of fossil evidence of a common ancestor for all eye-bearing species
- (B) the lack of correlation between eye structures and physical environments
- (C) the lack of correlation between physical environments and control genes for eye development
- (D) the resemblance between the eyes of mammals and the nautilus mollusk, species that are not closely related
- (E) the obvious evolutionary advantage bestowed by some kinds of eyes as compared with others

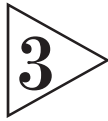
21. The primary purpose of the passage is to

- (A) distinguish between two theories and explain the theoretical basis for each of those theories
- (B) argue that a particular discovery provides insufficient evidence for the rejection of a particular widely accepted theory
- (C) explain how a particular piece of evidence challenges a particular theory that has been widely accepted
- (D) provide grounds for a reexamination of the assumptions underlying a recent challenge to a commonly held theory
- (E) suggest some practical implications of a particular theoretical finding that conflicts with a particular commonly held theory

22. The passage provides the strongest support for the inference that the author’s attitude regarding the discovery of a control gene responsible for activating eye formation in fruit flies can be accurately described as

- (A) concern that biologists have accepted the single origin theory without carefully evaluating the assumptions it is based on
- (B) concern that biologists may have prematurely abandoned the multiple origin theory
- (C) confidence that the discovery will imminently lead to the complete abandonment of the multiple origin theory
- (D) optimism that its discovery might foster a reevaluation of the assumptions biologists utilize when researching evolution in general
- (E) anticipation that the discovery will foster further efforts to determine whether all varieties of eyes have evolved from a single ancestral prototype eye

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23. According to the author, control genes have been found that
- (A) determine how each species' characteristic eye structure will differ from that of other species
 - (B) probably occur in all animals but only activate eye formation in just a few
 - (C) may be interchangeable among mice, fruit flies, and humans without causing members of those species to develop eyes that are atypical for their species
 - (D) regulate specific aspects of eye evolution in certain species, suggesting that those species need not be assumed to stem from a common ancestor
 - (E) activate eye formation in species including humans and mice, and this helps explain how evolutionary convergence occurs
24. Proponents of the multiple origin theory would likely regard the relationship between the development of human eyes and the development of the eyes of the nautilus mollusk as most analogous to which one of the following?
- (A) Traditional Italian pizza is very similar in form and ingredients to a traditional Southern French food, which, like Italian pizza, has its origins in earlier Mediterranean cultures.
 - (B) Mexican traditional cuisine uses round, flat tortillas made from corn or wheat, and traditional cuisines of India use tortilla-like flat, round bread made from wheat flour, even though the Mexican and Indian cultures have no traditional connection with each other.
 - (C) Yogurt is superficially unlike cheese, although both are made almost entirely of milk and both are traditional ingredients in Middle Eastern and European cuisines.
 - (D) Mozzarella cheese is traditionally made from cow's milk in the United States, even though Italian mozzarella, which is the original model for the US version and has almost the same flavor, color, and texture, is traditionally made from buffalo's milk.
 - (E) The culinary use of corn—a vegetable that was originally available only to various Native American cultures—has spread to many cultures throughout the world, some of which are very distant and different from one another.

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.

SECTION IV

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. Journalist: Many people working on difficult problems in mathematics report going to sleep without a solution, but upon awaking discover they have a solution in mind. This phenomenon occurs among all age groups past infancy.

Which one of the following is most strongly supported by the journalist's statements?

- (A) Everyone's mind works unconsciously on difficult problems while sleeping.
- (B) Certain types of mathematical problems cannot be solved while one is consciously seeking a solution.
- (C) Being well rested is a necessary condition for finding a solution to a difficult problem.
- (D) Consciously seeking a solution is not the only mental process by which one can solve a mathematical problem.
- (E) The ability to carry out mental processing gradually develops during infancy.
2. Over the past few decades dozens of people have claimed to have sighted the Yeti in the Himalayas. This provides strong evidence that the creature exists.
- The reasoning in the argument is questionable because the argument fails to
- (A) take into account similar sightings in mountains other than the Himalayas
- (B) consider alternative explanations for the reported sightings
- (C) consider the absence of photographs of the Yeti
- (D) evaluate historical evidence for the existence of the Yeti
- (E) account for why most people still do not believe in the Yeti

3. Migraines are caused by changes in certain blood vessels of the brain that result in a local disturbance in the action of a specific nerve-activating chemical. Two migraine remedies, drug K and drug L, have exactly the same restorative effects on the local action of this chemical, but L also disrupts the action of several other chemicals in the brain that govern mental activity and the body's metabolism.

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

- (A) Treatment with L is likely to be slower-acting in its effect on a migraine than is treatment with K.
- (B) Neither treatment with L nor treatment with K is likely to have a significant effect on the symptoms of a migraine.
- (C) People whose migraines are treated with L are more likely to experience relief from pain than are people whose migraines are treated with K.
- (D) People whose migraines are treated with L are likely to experience a wider range of effects beyond the cessation of migraines than are people whose migraines are treated with K.
- (E) K, unlike L, should be administered immediately after the onset of a migraine.

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4. Advertisement: The new Reflex computer represents a conceptual advance. Unlike traditional computers, the Reflex has a built-in monitoring function that continuously checks all other computer operations and lets you know if they are malfunctioning in any way, thus preventing the loss of data. With the Reflex, therefore, you'll never lose data again!

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

- (A) The monitoring function can always determine the cause of the Reflex's malfunctioning.
 - (B) The Reflex computer continues to process data while it is warning of a malfunction.
 - (C) The monitoring function provides suggestions on how to prevent future malfunctions.
 - (D) The monitoring function of the Reflex does not reduce the computer's speed.
 - (E) The monitoring function of the Reflex is not subject to frequent unpredictable malfunctioning.
5. Editorialist: Research reveals that patients of hospital cardiac units in which doctors perform many aggressive, high-tech procedures are less likely to be alive a month after leaving the hospital than are patients of hospital cardiac units that rely almost exclusively on standard treatments. This indicates that aggressive, high-tech treatments of cardiac disease are less effective than standard treatments.

Which one of the following, if true, most weakens the editorialist's argument?

- (A) Some cardiac patients have lived for many years after receiving aggressive, high-tech treatments.
- (B) Hospitals that have high rates of long-term survival for cardiac patients do not always have high rates of long-term survival for other patients.
- (C) All cardiac patients have access to hospitals in which relatively large numbers of aggressive, high-tech procedures are performed.
- (D) Patients with the most-severe cardiac problems tend to receive treatment at hospitals where many aggressive, high-tech treatments are performed.
- (E) Doctors who do not perform aggressive, high-tech procedures tend to place much emphasis on the prevention of cardiac problems through healthy lifestyle choices.

6. Economist: When people save their money instead of spending it, that money is not being used to make the purchases of goods and services that help businesses remain profitable. Because these purchases are needed to generate tax revenues that can be used for government-funded scientific research, it is clear that industrial growth, which relies on the application of this government-funded research, will falter if the global political climate begins to make people anxious or cautious.

Which one of the following is an assumption required by the economist's argument?

- (A) People become less inclined to spend their money on goods and services when the global political climate makes them anxious or cautious.
- (B) The purpose of scientific research that is funded by tax money is to lend itself to applications that will sustain industrial growth.
- (C) People are often made anxious and cautious by the global political climate.
- (D) The scientific research that is currently funded by the government will no longer take place if tax revenues decrease.
- (E) People who are more inclined to spend than to save their money are neither cautious nor anxious.

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7. Until recently, endosulfan was one of the most widely used pesticides. Some others—toxaphene, dieldrin, and chlordane—were banned or restricted in many countries in the 1980s but linger in the environment. All four have a weak effect individually in increasing estrogen levels in women. Scientists have found, however, that their potential to cause health hazards increases dramatically when the chemicals are combined. For example, a mixture of endosulfan and dieldrin had 160 to 1,600 times more estrogen-boosting potency than either chemical did individually. Increased estrogen is associated with an increased cancer risk in women.

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

- (A) Pesticides that boost estrogen levels are more dangerous than others.
- (B) Any two pesticides in combination pose greater health risks than do the same pesticides uncombined.
- (C) Because of its hazards when combined with other chemicals, endosulfan is more dangerous than most other pesticides.
- (D) If certain pesticides combine in the environment, they may constitute greatly increased human health hazards.
- (E) Banning endosulfan worldwide in the 1980s would have had no effect on worldwide cancer rates.
8. Columnist: In a recent article an economist argues that corporations have no responsibility to society beyond obeying the law and maximizing profit for shareholders. But in a different article the same economist endorses the view that corporations ought to make financial contributions to social programs in the communities in which they are located. Thus the economist is caught in a contradiction.

The columnist's argument is questionable because it fails to rule out the possibility that

- (A) corporations make nonfinancial contributions to social programs within their local communities
- (B) many shareholders of corporations are in favor of their corporations making contributions to community social programs
- (C) social programs have an economic effect on a community and are therefore part of the domain of economists
- (D) financial contributions to community social programs improve a corporation's image in a way that improves its profitability
- (E) a corporation's making financial contributions to community social programs violates no laws

9. While conditions on Mars are no longer favorable for the evolution of life, scientists point out that in many ways Mars resembles portions of Antarctica, which do manage to support colonies of microbes. But these organisms require liquid water, as do all forms of life. And if there is liquid water on Mars at all, it is only seasonal and in small amounts.

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

- (A) If there is no life on Mars, then there is no liquid water on Mars.
- (B) It is unreasonable to suppose that Mars has ever supported any forms of life.
- (C) If there are colonies of microbes in Antarctica, then there are colonies of microbes on Mars.
- (D) If there is life on Mars, then there is liquid water on Mars.
- (E) If there is liquid water on Mars, then there are colonies of microbes on Mars.
10. Politician: The cohesion of a society depends on its members' accepting a set of basic principles. When these principles are routinely called into question, the society begins to erode. Any society, therefore, that allows schools to present the society's set of basic principles as simply one of several alternatives, with the suggestion that students may choose which to accept on the basis of the principles' worth, is inviting its own demise.

Which one of the following would, if true, most strengthen the politician's argument?

- (A) Given the chance to assess the merits of the principles governing their societies, individuals will rarely find those principles acceptable.
- (B) One cannot evaluate a set of political principles without having first established criteria of evaluation.
- (C) Some flourishing societies do not encourage questioning of their most basic principles.
- (D) Children are more likely than adults to question the wisdom of those who founded and shaped a society.
- (E) Unless people believe that they have freely chosen to adopt the principles that govern their societies, they will tend to repudiate these principles.

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11. Economist: In general, several apprentices working together produce about the same amount in an hour as a single more highly trained worker. Hence the more highly trained worker can usually command several times the hourly wage of an apprentice. Thus if the apprentice wage is increased, the hourly wages of more highly trained workers will generally rise by a proportionate amount. Therefore the reason that more highly trained workers favor an increased apprentice wage is that it would increase their own wages.

The economist's reasoning is flawed because the economist takes for granted that

- (A) if a policy change that people support would work in their favor, that is why they support it
- (B) if one event causes another event, then the first event occurs whenever the second event occurs
- (C) an increase in the apprentice wage would result in an increase in the wages of all better-paid workers
- (D) the wages of highly trained workers will usually not increase unless the apprentice wage increases
- (E) an increase in the apprentice wage would benefit only highly trained workers
12. Oxygenated petrol, although it reduces pollution, causes frequent stalling in poorly maintained automobiles. However, in laboratory tests of automobiles that had been driven 100,000 kilometers, those that had regularly used oxygenated petrol stalled less than those that had regularly used nonoxygenated petrol.
- Which one of the following, if true, most helps to explain the results of the laboratory tests described above?
- (A) The adverse effects from oxygenated petrol can be distinguished from mechanical engine problems in the laboratory tests.
- (B) Automobile owners who pay a high price for oxygenated petrol have less money for automobile maintenance than do automobile owners who buy the less expensive nonoxygenated petrol.
- (C) Drivers whose automobiles regularly exhibit adverse effects from oxygenated petrol generally cease to notice the adverse effects by the time their automobiles have been driven 100,000 kilometers.
- (D) In conducting the tests, the laboratory used each type of petrol on each type of engine.
- (E) Automobile owners who regularly use oxygenated petrol get more frequent engine maintenance because of the adverse effects from the petrol.

13. It has been hypothesized that dinosaurs became extinct simply because they grew too large and slow to function effectively as predators, but this cannot be right. If that hypothesis were correct, then small dinosaurs would have survived even though their large counterparts died off. But it is an undisputed fact that all dinosaurs—even very small ones—became extinct.

The argument above proceeds by

- (A) stating a hypothesis and then supporting it by means of an example
- (B) introducing a hypothesis and then questioning the accuracy of the data on which it is based
- (C) refuting a hypothesis by showing that one of the consequences suggested by that hypothesis is false
- (D) disputing a hypothesis by offering a plausible competing explanation
- (E) refuting a hypothesis by showing that it is impossible to produce evidence to the contrary
14. If, when the twenty-third century arrives, the history of the Mughal Empire is better known than that of our time, it will be because of our enthusiasm for electronically stored digital files. The contents of most digital media vanish long before words written on high-quality paper would, and they become obsolete and unusable even sooner due to rapid technological innovation. While information written on paper can be read directly, access to digital information is doubly indirect: the sequence of digits representing the information must be retrieved, and then that sequence must be decoded by the appropriate software.
- Which one of the following statements most accurately expresses the main conclusion of the argument?
- (A) The obsolescence brought about by ongoing technological innovation will make historical research increasingly difficult in the future.
- (B) Information written on paper is more readily accessible than the contents of digital documents.
- (C) Historically important records from the present era may be lost because of the medium in which they are stored.
- (D) Digitally stored information is particularly vulnerable because of the two-step process required to retrieve it.
- (E) Historians in the future may know more about the Mughal Empire than about the twenty-first century.

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15. Patel: It is often thought that direct experience, unlike language and culture, can always serve as common ground for communication among human beings. But people from different cultures inhabit different sensory worlds. Because selective screening of sensory data admits some perceptions while filtering out others, one person's experience, perceived through one set of culturally patterned sensory screens, is quite different from what anyone from another culture would experience when encountering the same sensory data.

Which one of the following is an assumption required by Patel's argument?

- (A) No two people from different cultures have the same sensory screens.
 - (B) No two people from different cultures ever encounter the same sensory data.
 - (C) Two people who have different perceptions of the same event must be from different cultures.
 - (D) Two people from the same culture sometimes have different sensory screens.
 - (E) The experience of one person is quite different from the experience of any other person.
16. If the country's income taxes are decreased, the country's economy will not be strengthened, because many of the country's public employees would become unemployed, thereby further weakening the country's economy.

The pattern of reasoning in the argument above is most similar to that in which one of the following arguments?

- (A) Tax incentives will lure new businesses to the region, thereby increasing the region's employment, but even if no tax incentives are offered, employment in the region is likely to increase.
- (B) A slight increase in employment will not increase confidence in the current government, because people are aware that any increase in employment is likely to be temporary.
- (C) An increase in interest rates will not increase the number of jobs, because increased interest rates will put many companies out of business, and this result will decrease the number of jobs.
- (D) If both government spending and income taxes are decreased, growth in private businesses might occur, because people will have more money to invest, but decreases in both spending and taxes are unlikely.
- (E) A decrease in taxes on businesses will strengthen the economy because it will encourage businesses to expand employment opportunities, even though many workers will not qualify for the new opportunities.

17. Historian: The only evidence we have for claims about the past exists in the present. How things actually occurred is beyond our knowledge. Historians construct coherent stories that explain the available evidence and why the present is as it is. Such stories about the past, however, do not need to be true to be good history; they need only explain the evidence about the past and what we know about the present better than do rival accounts.

Which one of the following judgments conforms most closely to the historian's position?

- (A) It is likely that the 1857 War of Independence did not actually occur in the way we think it did.
- (B) It is not necessary to know what actually occurred during the 1857 War of Independence to write a good history of it.
- (C) An account of the 1857 War of Independence that is true is better as history than one that is not true but better explains the evidence.
- (D) An account that helps explain the available evidence concerning the 1857 War of Independence is no better than one that helps explain why the present is as it is.
- (E) It is not possible to write a good history of the 1857 War of Independence without studying rival accounts.

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18. University administrator: Saying that writing cannot be taught is as silly as saying that playing the violin cannot be taught. Of course writing can be taught. Writing classes have been taught at this university ever since it was founded.

The reasoning in the university administrator's argument is flawed in that the argument

- (A) relies on using a key term in two different senses
 - (B) rests entirely on a weak analogy
 - (C) generalizes on the basis of mere speculation
 - (D) treats a view with contempt instead of offering evidence against it
 - (E) takes for granted that those who can teach one thing can teach another
19. Any ornamental garden has both plants and structural elements such as rocks and fences. Because the plants constantly change with growth and decay, it is difficult to keep a proper balance in the garden between the plants and the structures. Balance can be achieved only with careful planning, and even when established, balance has to be constantly maintained by pruning and thinning.

Which one of the following most accurately expresses the main conclusion of the argument?

- (A) It is difficult to keep a proper balance in a garden between structures and plants.
- (B) The proper balance in a garden between structures and plants is best achieved and maintained by careful planning.
- (C) The reason why it is difficult to keep a proper balance in a garden between structures and plants is that the plants constantly change with growth and decay.
- (D) It is difficult to constantly maintain the balance in a garden between structures and plants by pruning and thinning.
- (E) Without careful planning and maintenance, the balance in a garden between structures and plants constantly changes with growth and decay.

20. A dog who is emotionally indifferent and not securely attached to its human companion neither whimpers when the human leaves the room nor looks up to acknowledge the human's return. Some dogs do not whimper when their human companions leave them at kennels. These dogs, therefore, are emotionally indifferent and not securely attached to their human companions.

The flawed pattern of reasoning in the argument above is most similar to that in which one of the following?

- (A) A happy person is neither bitter nor depressed. Some successful people are bitter. These people, therefore, are not happy.
 - (B) Creative people do not fear attempting to solve new problems and do not confine their thinking to solutions other people propose. Neena is not afraid of trying to solve new problems. Therefore, Neena is a creative person.
 - (C) If a dolphin is well cared for, then it is easily trained. Some dolphins are not well cared for. These dolphins, therefore, are not easily trained.
 - (D) At the bookstore's anniversary sale all novels are being sold at a discount. This travel guide is being sold at the bookstore but not at a discount. Therefore, the bookstore's anniversary sale has not begun yet.
 - (E) If new jobs are created, the unemployment rate will decrease. New jobs are being created by both new industries and rejuvenated older industries. Therefore, the unemployment rate will decrease.
21. Old rose varieties have less vibrant colors than modern rose varieties, but are superior in fragrance. This situation has arisen because the modern rose varieties were developed to meet customer demand and marketed mainly through catalogs: colors, but not fragrances, can be photographed.

Which one of the following, if true, most strengthens the support for the causal claim made above?

- (A) People in earlier times were interested in the fragrances of roses as well as their colors.
- (B) Breeding roses to enhance one trait often has unanticipated consequences for other traits.
- (C) Old rose varieties are becoming increasingly popular as people discover their fragrances.
- (D) People in earlier times would have found the vibrant colors of modern roses too harsh.
- (E) State-of-the-art photographic equipment makes possible unprecedentedly accurate color reproductions of roses.

22. Analyst: The increasing complexity of computers may lead those who pursue a career in computer programming to think that job security and higher wages can be attained by becoming more specialized as the field becomes more complex. Even though specialists earn higher wages than generalists within computer programming, this move is ill-advised because one risks specializing in a technology that will become obsolete. Consider the plight of people who used to repair eight-track tape players.

Which one of the following, if true, most weakens the analyst's argument?

- (A) Many other careers will soon offer greater job security and higher wages than computer programming.
- (B) Some current computer technologies will not become obsolete within the lifetimes of anyone now pursuing a career in computer programming.
- (C) The average wages earned by generalists within computer programming will never be as high as the average wages earned by specialists within computer programming.
- (D) The current technological knowledge of most specialists within computer programming could also be applied to many technologies that will replace present ones.
- (E) The technological complexity of computers may eventually grow less rapidly than at present.

23. Any great ape can learn to recognize its reflection in a mirror. Any animal that recognizes its reflection in a mirror has a sense of self. An animal has a sense of the minds of others only if it possesses a sense of self.

Which one of the following follows logically from the information above?

- (A) Before a great ape develops a sense of the minds of others, it must learn to recognize its reflection.
- (B) All great apes have the ability to develop a sense of the minds of others.
- (C) Any animal that does not recognize its reflection in a mirror does not have a sense of self.
- (D) If an animal is not a great ape it is not capable of developing a sense of the minds of others.
- (E) Any animal that is incapable of developing a sense of self is not a great ape.

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24. Incumbent politicians tend to win elections in times of economic prosperity and lose during recessions. Knowing this, incumbents have an incentive to boost the economy temporarily by cutting taxes and raising government spending several months before an election. Thus, in democratic nations, upcoming elections may be a major cause of short-term economic expansions.

Each of the following, if true, strengthens the argument EXCEPT:

- (A) Politicians in democratic nations sometimes cut taxes and raise government spending in the months following an election.
- (B) In democratic nations, short-term economic expansions more often start within the six months preceding a national election than within the six months following one.
- (C) Cutting taxes several months before an election is an effective means for incumbent politicians to boost the economy temporarily.
- (D) In democratic nations, incumbent politicians have more control than anyone else over decisions about when taxes will be cut and government spending raised.
- (E) Raising government spending several months before an election is an effective means for incumbent politicians to boost the economy temporarily.

25. Some educators have had remarkable success with an unusual approach to science education. For example, a physics lesson on the properties of waves might begin by plucking guitar strings. After observing the strings vibrate, students would begin to apply names to the phenomena they had witnessed, such as frequency and amplitude. Only after fully understanding these real-life concepts would they begin to apply abstract terms and equations to the phenomena.

Which one of the following principles is best illustrated by the example above?

- (A) Students will understand abstract terms only if they are applicable to phenomena they have observed.
- (B) Science education is most successful when it emphasizes observation and experiment rather than mathematical calculation.
- (C) Students are unable to form abstract concepts concerning phenomena until they become familiar with these phenomena.
- (D) Students learn best when teachers appeal to the interests of their students.
- (E) Familiarity with phenomena facilitates the learning of more formal treatments of these phenomena.

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.

Please remain seated until all test books and answer sheets have been collected and checked.

NO TEST MATERIAL ON THIS PAGE.

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ANSWER KEY

SECTION I

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|------|-------|-------|
| 1. D | 8. C | 15. D |
| 2. D | 9. D | 16. E |
| 3. A | 10. E | 17. D |
| 4. D | 11. B | 18. B |
| 5. C | 12. E | 19. D |
| 6. E | 13. A | 20. B |
| 7. B | 14. B | |

SECTION II

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|------|-------|-------|-------|
| 1. E | 8. C | 15. D | 22. C |
| 2. A | 9. E | 16. C | 23. E |
| 3. D | 10. D | 17. B | |
| 4. B | 11. A | 18. C | |
| 5. D | 12. B | 19. D | |
| 6. A | 13. E | 20. C | |
| 7. E | 14. A | 21. D | |

SECTION III

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|------|-------|-------|-------|
| 1. E | 8. C | 15. E | 22. E |
| 2. D | 9. A | 16. A | 23. C |
| 3. D | 10. D | 17. C | 24. B |
| 4. A | 11. E | 18. A | |
| 5. C | 12. E | 19. D | |
| 6. B | 13. C | 20. B | |
| 7. A | 14. A | 21. C | |

SECTION IV

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|------|-------|-------|-------|
| 1. D | 8. D | 15. A | 22. D |
| 2. B | 9. D | 16. C | 23. E |
| 3. D | 10. A | 17. B | 24. A |
| 4. E | 11. A | 18. A | 25. E |
| 5. D | 12. E | 19. A | |
| 6. A | 13. C | 20. B | |
| 7. D | 14. C | 21. B | |

