

## SECTION—I

Time—35 minutes

27 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 questions, more than one of the choices could conceivably answer the question. However, you are to choose the best answer; that is, choose the response that most accurately and completely answers the question and mark that response on your answer sheet.

*The following passage was written in the mid-1990s.*

- Evidence that the earth's atmosphere has warmed has become quite compelling, in part because it has been reinforced recently by the development of accurate profiles of average annual temperatures throughout the last 1,000 years. These data, inferred from studies of geological patterns and samples of ice deposits, tree rings, and coral growth layers, indicate that the recent increase in average temperature—a rise of about one half of a degree Celsius over the last 100 years—is unprecedented in the previous 1,000 years. At the same time, other recent studies have strengthened the controversial link between this increase and the “greenhouse effect.” Proponents of the greenhouse effect claim that the increase was caused by elevated levels in the atmosphere of certain gases that prevent heat from radiating back into space.

- Early models charting the greenhouse effect were somewhat inconsistent with observed data; they estimated that the increase in the earth's atmospheric temperature over recent decades should have been higher than the increase observed in actuality, which led opponents to question the validity of the greenhouse theory. But new methods have enabled scientists to gauge the effect of greenhouse gases more accurately by taking into account an important factor that earlier studies overlooked: airborne sulfates. Sulfates from natural sources such as volcanoes as well as from human technological sources tend to counteract the heating effect of greenhouse gases by reflecting solar energy back into space. Taking into account the varying levels of airborne sulfates indicated by the concentration of sulfates in successive ages of glacial ice, these scientists have calculated theoretical temperatures for recent decades that are consistent with observed temperatures.

- Another question for proponents of the greenhouse theory comes from scientists who have attempted to tie changes in the earth's atmospheric temperature to variations in solar energy. From observations of cycles in several types of solar phenomena, these scientists have developed models that chart variations in the sun's heating effects, and the models do show a strong decade-by-decade correspondence between solar activity and atmospheric temperature fluctuations. But the models cannot account for the entirety of the recent rise in atmospheric temperature. While researchers have found that the average annual atmospheric temperature fluctuates from one year to the next, its temperature over the long term has been relatively

- (50) stable—deviations from the long-term average atmospheric temperature have inevitably reverted to this average, or equilibrium, temperature. But the current rise in temperature surpasses the most extreme fluctuations in temperature consistent with the models based on variations in solar energy. In light of all this, it seems reasonable to conclude that changes in the earth's atmosphere have raised its equilibrium temperature, and that greenhouse gases represent the best explanation of that shift.
- (55)

1. Which one of the following most accurately states the main point of the passage?
- (A) Though many accept the theory that the greenhouse effect is causing the recent global warming, that theory is somewhat questionable in light of recent data concerning sulfates and solar cycles.
- (B) Scientific models of the effects of greenhouse gases, modified to incorporate the effects of airborne sulfates, are important because they predict that the earth's average temperature will continue to rise.
- (C) New scientific evidence shows that the earth's equilibrium temperature has been rising in a way that is consistent with the greenhouse theory, but that the increase has been less than this theory originally estimated.
- (D) Recent scientific data and calculations support the claims that the earth's atmosphere is becoming warmer and that the greenhouse effect is a major cause of this warming trend.
- (E) The greenhouse theory is a reasonable explanation of a recent upward trend in the earth's atmospheric temperatures only if it is combined with the solar-fluctuation theory.

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2. Which one of the following most accurately describes the relation between the argumentation in the second paragraph and that in the third paragraph?
- (A) Two complementary theories that the author compares in the second paragraph are then contrasted in the third paragraph, where the first theory is ultimately rejected in favor of the second.
  - (B) A theory that the author shows to be problematic in the second paragraph is tentatively rejected in the third paragraph in light of compelling evidence that runs counter to the theory.
  - (C) A theory that the author discusses in the second paragraph is tentatively accepted after weighing additional considerations in the third paragraph.
  - (D) A theory that the author proposes and defends in the second paragraph is substantially revised in the third paragraph in response to new findings.
  - (E) A theory whose validity is questioned by the author in the second paragraph is shown in the third paragraph to be consistent with observed data.
3. Which one of the following is mentioned in the passage?
- (A) the way in which sulfates in the earth's atmosphere produce an effect on temperatures
  - (B) that airborne sulfates are the main greenhouse gases
  - (C) the usual duration of one cycle of varying solar energy output
  - (D) predictions as to the effects of global warming on glacial ice
  - (E) an example of a technological source of airborne sulfates
4. It can be reasonably inferred from the passage that the author considers which one of the following most crucial in judging the success of a model developed to explain the global warming trend of the previous 100 years?
- (A) a strong correspondence between the model's calculated average global temperatures in the last few years and data from actual temperature observations
  - (B) that the model predicts an increase in the earth's temperature on the basis of a simple explanatory framework
  - (C) the extent to which the model has been revised in light of experimental findings
  - (D) a close fit between the warming mechanisms postulated by the theory and those that are generally acknowledged to be able to raise atmospheric temperatures
  - (E) a long-term match between the model's estimated changes in the earth's temperature and data indicating the actual temperatures that have occurred
5. Which one of the following most accurately states the author's primary purpose in lines 26–35?
- (A) to provide an example of a set of observations that has been predicted by a theory
  - (B) to argue that a new theory will need to be formulated in order to accommodate certain recent findings
  - (C) to demonstrate the degree to which a previously accepted theory fails to account for observed phenomena
  - (D) to show that a certain theory that was previously in doubt can be defended in light of additional data
  - (E) to propose a way of resolving a dispute between proponents of two competing theories

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When interviewing witnesses to a crime, police interviewers seek to maximize the amount of information that a cooperating eyewitness can give them so that they can generate leads to follow, confirm or disconfirm alibis, and so forth. One method for eliciting information over and above what a cooperative witness might otherwise provide is the cognitive interview.

- (5)
- (10) Developed by psychologists and adopted by police forces around the world, the cognitive interview combines cognitive techniques known to improve recall, such as multiple retrieval attempts, with communication strategies developed by social psychologists, such as conversation-management skills and techniques for building rapport between interviewer and interviewee. The general consensus is that this package has proven successful in increasing the number of details recalled by witnesses, with little impact on the number of incorrect details reported (neither increasing nor decreasing overall accuracy). However, a problem associated with the cognitive interview is that it is a complex procedure, requiring substantial training to learn and a long time to conduct. Because of this complexity, not all officers receive this training, and even trained officers often deviate from the procedures specified in the cognitive interview training.

- (15)
- (20)
- (25)
- An alternative to the cognitive interview is hypnosis. Indeed, hypnotic investigative interviewing was a precursor to the cognitive interview. However, even though the techniques involved are much less complex, the evidence suggests that overall accuracy, as determined by the proportion of correct to incorrect responses, is not generally improved with hypnosis; in fact, sometimes it may deteriorate. Hypnosis may also give rise to a "false confidence" effect, whereby witnesses are more confident in their reports generally, including reports of incorrect information. There are other practical difficulties, most notably that not all witnesses are susceptible to hypnosis.

- (30)
- (35)
- (40)
- (45)
- (50)
- (55)
- (60)
- For police interviewers, the ideal method for eliciting additional information from an eyewitness would be one that requires no special training for the interviewer, that can be applied to the entire population of potential witnesses, and that has a positive effect on correct memory reports, with no corresponding increase in false details reported. Research suggests that such a method may in fact be available. Encouraging eyewitnesses to close their eyes during recall attempts is a technique that is common to both hypnosis and the cognitive interview. Recent studies demonstrate that instructed eye-closure can benefit recall for both visual and auditory materials, for events witnessed on video, and for events witnessed through live interactions. These studies indicate an improvement over hypnotic interviewing, with no problems of participant dropout because of lack of hypnotic susceptibility. More significantly, instructed eye-closure by itself appears to improve witness recall to a degree equivalent to that demonstrated by the cognitive interview. And the benefits of eye-closure are achieved with no increase in errors, no specialist training, and no greater complexity of interviewing technique.

6. Which one of the following most accurately expresses the main point of the passage?

- (A) For police interviewers, the ideal interview procedure would be one that is simple to apply, universally applicable, and reliably successful at eliciting accurate information.
- (B) Interviewing witnesses is a crucial component of law enforcement, but all existing interview procedures require some trade-off between reliability and practicality.
- (C) Instructing witnesses to close their eyes during memory-recall tasks is a technique common to both hypnosis and the cognitive interview.
- (D) Though difficult to implement on a large scale, the cognitive interview is the most effective procedure police officers can use when questioning an eyewitness.
- (E) Instructed eye-closure improves witness recall without sacrificing practicality or reliability, making it an ideal interview technique for police interviewers.

7. According to the passage, each of the following is true of the instructed eye-closure technique EXCEPT:

- (A) It requires less training than the cognitive interview.
- (B) Studies have shown that it can benefit recall for events witnessed on video.
- (C) It does not lead to an increase in erroneous memory reports.
- (D) It may give rise to a "false confidence" effect.
- (E) It is common to both hypnotic interviewing and the cognitive interview.

8. The author refers to "alibis" (first sentence of the passage) primarily in order to

- (A) highlight a positive contribution made by psychological research
- (B) exemplify the kind of information police interviewers seek to elicit from suspects
- (C) point to a use to which an effective interview procedure might be put
- (D) contrast the concerns of police officers with those of psychologists
- (E) illustrate the complexity of the cognitive interview

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9. The author would be most likely to agree with which one of the following statements?
- (A) There is reason to worry that the cognitive interview is less effective if police interviewers deviate from the procedures specified in the training.
  - (B) An interviewer's success at eliciting valuable information from a witness derives largely from the interviewer's ability to establish a rapport with the witness.
  - (C) Though it suffers from significant drawbacks, hypnotic interviewing has an advantage over other investigative interviewing procedures in that its effective use requires essentially no training.
  - (D) When interviewing witnesses, police interviewers may need to use different techniques depending on whether the desired information is visual or auditory in nature.
  - (E) An increase in the complexity of an interview procedure will usually result in a decrease in the reliability of the information obtained.
10. It can be inferred from the passage that the use of hypnotic interviewing most likely has which one of the following consequences?
- (A) Interviews yield more inaccurate information than accurate information.
  - (B) Interviewers are overly confident that complex interview procedures have been followed correctly.
  - (C) Interviewers are not able to detect attempts by a witness to intentionally deceive the interviewer.
  - (D) Interviewers are not able to accurately assess the reliability of a witness's memory reports by asking the witness how sure he or she is concerning those reports.
  - (E) Interviewees become less susceptible to hypnosis over the course of the interview process, resulting in a steady decrease in the amount of information they are able to provide.
11. Which one of the following describes a relationship that is most analogous to the one that holds between the cognitive interview and instructed eye-closure, as described in the passage?
- (A) Studies show that individuals who frequently engage in light exercise enjoy significant health benefits, but equivalent health benefits are enjoyed by those who engage in more strenuous exercise on a less frequent basis.
  - (B) Reduced consumption of saturated fat combined with an increased consumption of fiber has been shown to produce significant health benefits, but equivalent health benefits have been produced by an increase in fiber consumption alone.
  - (C) Consumption of moderate amounts of caffeine has been linked to positive health benefits, but excessive caffeine consumption has been shown to elevate blood pressure.
  - (D) Research has shown that a new vitamin supplement can produce dramatic benefits in women, but data is inconclusive regarding men.
  - (E) Studies suggest that diet and exercise produce observable health benefits, but less significant benefits can be achieved through exercise alone.
12. The author would be most likely to agree with which one of the following statements?
- (A) If all witnesses were susceptible to hypnosis, hypnotic interviewing would be the best procedure for maximizing the amount of accurate information obtained from cooperative witnesses.
  - (B) Even if police forces had the time and resources to train all of their officers in the cognitive interview, the complexity of the procedure would still pose problems for its use.
  - (C) Instructed eye-closure should be adopted as an investigative interviewing technique only if police forces lack the resources required to implement the cognitive interview.
  - (D) Interview procedures that are easy to learn are likely to yield a greater amount of accurate information than interview procedures that are more difficult to learn.
  - (E) The more information a cooperative witness provides when interviewed, the more likely it is that the witness is experiencing a "false confidence" effect.

**Passage A**

In a 1978 lecture titled "The Detective Story," Jorge Luis Borges observes that, "The detective novel has created a special type of reader," and adds, "If Poe created the detective story, he subsequently created the reader of detective fiction." For Borges, this "special type of reader" confronts literature with such "incredulity and suspicions" that he or she might read any narrative as a detective story. Borges's interest in this particular genre, of course, inspired a good deal of his own fiction, but his account also draws our attention to an insight into the general nature of literature.

- (5) Literature, according to Borges, is "an aesthetic event" that "requires the conjunction of reader and text," and what the detective story highlights, he suggests, is the way in which the reader forms the conditions of possibility for this "aesthetic event." Borges imagines that the participation of the reader is not extrinsic to but instead essential to the literary text. Thus, what unites works belonging to the same genre is the way those works are read, rather than, say, a set of formal elements found within the works.

**Passage B**

One can, if one wants, define genres of fiction as sets of texts sharing certain thematic similarities, but the taxonomic difficulties of such an approach are notorious. The problem of "borderline cases"—especially in science fiction—arises so often that the definition fails to demarcate genres entirely. A more fruitful way to characterize the distinction between genres is to view it as a distinction between reading protocols: between ways of reading, responding to sentences, and making various sentences and various texts make sense. We are free to read any text by any reading protocol we wish. But the texts most central to a genre are those texts that were clearly written to exploit a particular protocol—texts that yield a particularly rich reading experience when read according to one protocol rather than another.

- (30) Our major critical effort must therefore be an exploration of the specific workings of many of the individual rhetorical configurations that contour, exploit, or even create a specific reading protocol. Here—to give an example outside of fiction—is a general description of one aspect of the reading protocols associated with poetry: with poetry, we tend to pay more attention to the sound of the words than we do with prose. Therefore we look for rhetorical figures that exploit, among other things, the phonic aspects of the words making up the text. With science fiction, much of the significance of the story will manifest itself in the alternative workings of the world in which the characters maneuver. Therefore we will pay particular attention to the rhetorical figures by which differences between our world and the world of the story are suggested.

13. Both passages are concerned with answering which one of the following questions?
- (A) Can works of fiction that belong to a popular genre have literary value?
  - (B) Who created the genre of detective fiction?
  - (C) What determines whether a work of fiction belongs to a particular genre rather than another?
  - (D) What is an author's role in determining the genre to which a story written by the author belongs?
  - (E) What does science fiction have in common with detective fiction?
14. The authors of the passages would be most likely to agree with which one of the following statements?
- (A) Short works of fiction are easier to categorize by genre than longer works.
  - (B) The first works of detective fiction and science fiction were written as artistic exercises, rather than as entertainment.
  - (C) There is no scholarly value in attempting to demarcate the boundaries of a genre of fiction.
  - (D) Genre stories are typically of literary value in proportion to the degree to which they defy the conventions of the genre to which they belong.
  - (E) Two works of fiction could have very similar plots, characters, and settings and yet belong to different genres.
15. Which one of the following most accurately describes the stance expressed by the author of passage A toward Borges's view?
- (A) complete agreement
  - (B) reluctant acceptance
  - (C) cautious neutrality
  - (D) strong skepticism
  - (E) outright rejection

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16. Which one of the following is true about the argumentative structures of the two passages?
- (A) Passage A moves from the specific to the general, whereas passage B moves from the general to the specific.
  - (B) Passage A begins with a discussion of a competing view, whereas passage B builds up to such a discussion.
  - (C) Both passages respond to a series of counterexamples to their main thesis.
  - (D) Both passages open with a description of an apparent contradiction that they then attempt to resolve.
  - (E) Both passages explore the implications of a thought experiment described at the outset.
17. The author of passage B would be most likely to agree with which one of the following?
- (A) Fictional works that were not written to exploit the reading protocol of a particular genre are sometimes borderline cases of that genre.
  - (B) Readers' expectations regarding a particular fictional work are not essential to its genre classification.
  - (C) Thematic similarities constitute the most useful basis for demarcating genres of fiction.
  - (D) The interpretation of a sentence that appears in a fictional work does not depend on the genre to which the work belongs.
  - (E) Every work of fiction of a given genre must include the themes and other content elements that are shared by the central works of that genre.
18. Borges and the author of passage B would be most likely to agree with which one of the following statements?
- (A) The genre of fiction to which a story belongs is fully determined by the author's intention.
  - (B) Any science fiction story could be read as if it were a detective story.
  - (C) Every work of fiction unambiguously belongs to some particular genre or other.
  - (D) Some rhetorical figures appear in poetry that never appear in prose fiction.
  - (E) A story cannot be truly enjoyed unless the reader knows to which genre it is supposed to belong.
19. Which one of the following is an application of a principle underlying passage B to the view of detective fiction ascribed to Borges in passage A?
- (A) A story in the genre of detective fiction cannot include any supernatural characters or events.
  - (B) Stories in the genre of detective fiction portray crimes that inevitably reflect the social anxieties of the time in which they were written.
  - (C) Stories in the genre of detective fiction employ rhetorical figures designed to encourage readers' suspicions about characters and events in the story.
  - (D) A story in the genre of detective fiction must involve the unraveling of a puzzle, the solution to which is discovered by the reader along with the protagonist of the story.
  - (E) The reading protocols associated with detective fiction are too universally applicable to constitute a well defined literary genre.

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It might reasonably have been expected that the adoption of cooking by early humans would not have led to any changes in human digestive anatomy. After all, cooking makes food easier to eat, which means

(5) that no special adaptations are required to process cooked food. However, current evidence suggests that humans today are capable of living on raw food only under unusual circumstances, such as a relatively sedentary lifestyle in a well supported urban

(10) environment. Important theoretical obstacles to living on raw food in the wild today include both the low digestibility of much raw plant food, and the toughness of much raw meat. These points suggest that humans are so evolutionarily constrained to eating foods that

(15) are digestible and easily chewed that cooking is normally obligatory. Furthermore, the widespread assumption that cooking could not have had any impact on biological evolution because its practice is too recent appears to be wrong. (Various European

(20) and Middle Eastern sites that go back more than 250,000 years contain extensive evidence of hominid use of fire and apparent "earth ovens.") The implication is that the adoption of cooked food created opportunities for humans to use diets of high caloric density more

(25) efficiently. Selection for such efficiency, we suggest, led to an inability to survive on raw-food diets in the wild.

Important questions therefore arise concerning what limits the ability of humans to utilize raw food.

(30) The principal effect of cooking considered to date has been a reduction in tooth and jaw size over evolutionary time. Human tooth and jaw size show signs of decreasing approximately 100,000 years ago; we suggest that this was a consequence of eating cooked

(35) food. Subsequent population variation in the extent and timing of dental reduction is broadly explicable by regional variation in the times when improvements in cooking technology were adopted. It is also possible that the earliest impact of cooking was the reduction

(40) of *Homo ergaster* approximately 1.9 million years ago. If so, the decrease in tooth and jaw size that started around 100,000 years ago may prove to result from later modifications in cooking technique, such as the

(45) adoption of boiling.

The evolution of soft parts of the digestive system is harder to reconstruct because they leave no fossil record. Human digestive anatomy differs from that of the other great apes in ways that have traditionally

(50) been explained as adaptations to a high raw-meat diet. Differences include the smaller gut volume, longer small intestine, and smaller colon. All such features are essentially adaptations to a diet of relatively high caloric density, however, and may therefore be at least

(55) as well explained by the adoption of cooking as by eating raw meat. Testing between the cooking and raw-meat models for understanding human digestive anatomy is therefore warranted.

20. Which one of the following most accurately states the main point of the passage?
- (A) Important questions about why humans are unable to survive on raw food are unresolved by current science.
- (B) Current evidence suggests that human beings are biologically adapted to the ingestion of cooked rather than raw food.
- (C) The reduction of human tooth and jaw size over evolutionary time strongly suggests that humans underwent a change in their dietary habits.
- (D) For at least 250,000 years, humans have been eating a diet that heavily features cooked food.
- (E) No special biological adaptations were necessary for humans to eat cooked food, since cooking makes food easier to eat.
21. The authors would be most likely to agree with which one of the following statements?
- (A) Small teeth and jaws limit the ability of humans to routinely utilize raw food.
- (B) Because of its reliance on plants in its diet, *Homo ergaster* had a smaller intestinal volume than modern humans do.
- (C) Early humans did not utilize plants for food prior to the adoption of cooking.
- (D) The properties of the human digestive anatomy are primarily the result of adaptation to a high-meat diet.
- (E) The human digestive anatomy has changed little over evolutionary time.
22. The primary purpose of the parenthetical sentence near the end of the first paragraph is to
- (A) identify the amount of time that is required for a behavior to have had an impact on biological evolution
- (B) provide support for the idea that cooking has been practiced for a relatively long time
- (C) pinpoint the time and place when humans became unable to survive on raw-food diets
- (D) undercut the suggestion that the adoption of cooking affected the evolution of the human digestive anatomy
- (E) indicate the particular technology that early humans used to cook food

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23. The authors would be most likely to agree with which one of the following statements?
- (A) A raw-food diet is significantly healthier for modern humans than a traditional diet.
  - (B) Humans would not be able to utilize cooked food in their diet if during their evolution they had not biologically adapted to it.
  - (C) Early humans controlled fire long before they adopted the practice of cooking their food.
  - (D) The practice of eating a diet of cooked food did not become standard until humans were able to lead relatively sedentary lives.
  - (E) Empirical evidence does not yet definitively show that early humans developed biological adaptations to a diet of cooked food.
24. Which one of the following most accurately describes the structure of the passage?
- (A) The first paragraph outlines a scientific hypothesis's two predictions, the second paragraph describes the empirical confirmation of the first prediction, and the third paragraph describes the empirical disconfirmation of the second prediction.
  - (B) The first paragraph describes a scientific theory, the second paragraph considers an alternative to that theory, and the third paragraph describes the empirical test that would show which theory is correct.
  - (C) The first paragraph argues for a claim, the second paragraph explores a possible objection to that claim, and the third paragraph responds to that objection.
  - (D) The second and third paragraphs describe the empirical predictions that clarify the difference between the two proposals outlined in the first paragraph.
  - (E) The second and third paragraphs explore the possible empirical implications of a claim made in the first paragraph.
25. Which one of the following, if true, would provide the most support for the authors' claim in the sentence immediately preceding the parenthetical remark in the first paragraph?
- (A) Evidence from cut marks on animal bones suggests that early humans' hominid ancestors used stone flake tools to butcher animals.
  - (B) Human populations are estimated to have adapted biologically to drinking the milk of domesticated animals in 5,000 years or less.
  - (C) Archaeological evidence indicates that the adoption of fire use by humans coincided with climatic changes that produced ice ages.
  - (D) An increase in the quantities of the trace element strontium in bones of early humans indicates an increase in the quantity of plant foods in their diet.
  - (E) The fossil record indicates that the brain volume of hominid species started growing after tooth and jaw size started decreasing.
26. The authors suggest which one of the following in the second paragraph?
- (A) Human teeth and jaws underwent their only major reduction in size about 100,000 years ago.
  - (B) Adaptation to cooked food limited the ability of humans to survive on a high-meat diet.
  - (C) The evolution of the human digestive system is not well understood.
  - (D) Cooking methods changed and improved over evolutionary time.
  - (E) Cooking was adopted by geographically diverse early human populations at the same time.
27. The authors' primary purpose in the passage is to
- (A) describe a scientific puzzle
  - (B) identify a common scientific misconception
  - (C) elucidate the meaning of a scientific hypothesis
  - (D) propose a scientific hypothesis
  - (E) undermine the support for a scientific principle

## 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.