

# Reading Test

65 MINUTES, 52 QUESTIONS

Turn to Section 1 of your answer sheet to answer the questions in this section.

## DIRECTIONS

Each passage or pair of passages below is followed by a number of questions. After reading each passage or pair, choose the best answer to each question based on what is stated or implied in the passage or passages and in any accompanying graphics (such as a table or graph).

### Questions 1-10 are based on the following passage.

This passage is adapted from Theodore Dreiser, *Sister Carrie*. Originally published in 1900.

It was not often that she came to the play stirred to her heart's core by actualities. To-day a low song of longing had been set singing in her heart by the finery, the merriment, the beauty she had seen.  
5 Oh, these women who had passed her by, hundreds and hundreds strong, who were they? Whence came the rich, elegant dresses, the astonishingly coloured buttons, the knick-knacks of silver and gold? Where were these lovely creatures housed? Amid what elegancies of carved furniture, decorated walls,  
10 elaborate tapestries did they move? Where were their rich apartments, loaded with all that money could provide? In what stables champed these sleek, nervous horses and rested the gorgeous carriages?  
15 Where lounged the richly groomed footmen? Oh, the mansions, the lights, the perfume, the loaded boudoirs and tables! New York must be filled with such bowers, or the beautiful, insolent, supercilious creatures could not be. Some hothouses held them.  
20 It ached her to know that she was not one of them—that, alas, she had dreamed a dream and it had not come true. She wondered at her own solitude these two years past—her indifference to the fact that she had never achieved what she had expected.  
25 The play was one of those drawing-room concoctions in which charmingly overdressed ladies and gentlemen suffer the pangs of love and jealousy amid gilded surroundings. Such bon-mots are ever

enticing to those who have all their days longed for such material surroundings and have never had them gratified. They have the charm of showing suffering under ideal conditions. Who would not grieve upon a gilded chair? Who would not suffer amid perfumed tapestries, cushioned furniture, and liveried servants?  
35 Grief under such circumstances becomes an enticing thing. Carrie longed to be of it. She wanted to take her sufferings, whatever they were, in such a world, or failing that, at least to simulate them under such charming conditions upon the stage. So affected was her mind by what she had seen, that the play now  
40 seemed an extraordinarily beautiful thing. She was soon lost in the world it represented, and wished that she might never return. Between the acts she studied the galaxy of matinee attendants in front rows and boxes, and conceived a new idea of the possibilities of New York. She was sure she had not seen it all—that the city was one whirl of pleasure and delight.

Going out, the same Broadway taught her a sharper lesson. The scene she had witnessed coming  
50 down was now augmented and at its height. Such a crush of finery and folly she had never seen. It clinched her convictions concerning her state. She had not lived, could not lay claim to having lived, until something of this had come into her own life.  
55 Women were spending money like water; she could see that in every elegant shop she passed. Flowers, candy, jewelry, seemed the principal things in which the elegant dames were interested. And she—she had scarcely enough pin money to indulge in such  
60 outings as this a few times a month.

That night the pretty little flat seemed a commonplace thing. It was not what the rest of the world was enjoying. She saw the servant working at dinner with an indifferent eye. In her mind were  
 65 running scenes of the play. Particularly she remembered one beautiful actress—the sweetheart who had been wooed and won. The grace of this woman had won Carrie’s heart. Her dresses had been all that art could suggest, her sufferings had been so  
 70 real. The anguish which she had portrayed Carrie could feel. It was done as she was sure she could do it. There were places in which she could even do better. Hence she repeated the lines to herself. Oh, if she could only have such a part, how broad would be  
 75 her life! She, too, could act appealingly.

1 Throughout the passage, the narrator provides insight into Carrie’s character mainly by

- A) explaining how Carrie is similar to a character she sees in a play.
- B) developing a contrast between how Carrie perceives herself and how she is perceived by others.
- C) comparing Carrie’s actual appearance to her perceptions of her appearance.
- D) juxtaposing Carrie’s perceptions of the city and her impressions at the theater.

2

One important theme of the passage developed through the narrator’s presentation of Carrie is that

- A) natural talent will languish if it remains un nourished.
- B) imagined pleasures have the power to make everyday life seem unacceptable.
- C) no goal is unfeasible so long as it is pursued with stubborn persistence.
- D) relationships are ultimately more important than money in determining an individual’s happiness.

3

As used in line 2, “stirred” most nearly means

- A) moved.
- B) angered.
- C) prodded.
- D) encouraged.

4

What main effect do the words “knick-knacks” (line 8) and “concoctions” (line 26) have on the passage?

- A) They underscore the widespread popularity of the things being described.
- B) They provide insight into the causes underlying Carrie’s materialistic mind-set.
- C) They emphasize how little value Carrie actually attaches to the things she appears to covet.
- D) They suggest that the things Carrie is observing ought to be regarded as trivial.

5

The main purpose of the series of questions in the first paragraph is to

- A) reveal Carrie’s ignorance of the women’s private struggles.
- B) capture the scene’s authenticity by providing detailed descriptions of the women.
- C) emphasize the narrator’s contempt for the women’s displays of affluence.
- D) develop the narrator’s portrayal of Carrie’s intense admiration of privileged women.

6

Which choice provides the best evidence that the narrator does not share Carrie's view of the type of play that Carrie attends?

- A) Lines 20-22 ("It ached . . . true")
- B) Lines 28-31 ("Such . . . gratified")
- C) Lines 39-41 ("So affected . . . thing")
- D) Lines 41-43 ("She was . . . return")

7

Based on the passage, Carrie regards her day-to-day lifestyle as one that has

- A) not been conducive to helping her achieve her ambitions.
- B) followed a repetitive but productive pattern.
- C) allowed for interaction with a range of interesting people.
- D) facilitated her goals as an actress.

8

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 22-24 ("She wondered . . . expected")
- B) Lines 36-39 ("She wanted . . . stage")
- C) Lines 49-50 ("The scene . . . height")
- D) Lines 56-58 ("Flowers . . . interested")

9

According to the passage, as Carrie views the play, she envies which aspect of the characters' lives?

- A) Their lack of everyday problems
- B) Their ability to forget the past easily and focus on the present
- C) Their opportunity to bear their sufferings in fortunate circumstances
- D) Their open indifference to material possessions

10

According to the passage, Carrie judges the performance of the actress who played the hero's sweetheart as

- A) inferior in certain respects to the performance that she believes herself to be capable of giving.
- B) dissatisfying in its emphasis on physical grace over emotional authenticity.
- C) clumsy and melodramatic yet superior to the other actors' performances.
- D) difficult to watch because of the intense suffering it evoked.

**Questions 11-20 are based on the following passage and supplementary material.**

This passage and accompanying figures are adapted from Giovanni Frazzetto, *Joy, Guilt, Anger, Love: What Neuroscience Can—and Can't—Tell Us about How We Feel*. ©2013 by Giovanni Frazzetto.

Dr. Anna Abraham wanted to find out whether the brain operates by different mechanisms when it is exposed to a situation that is real as opposed to one that is entirely fictional. So she designed an interesting fMRI-based<sup>1</sup> experiment that explored the brain's reactions to situations that involved either real or fictional characters.

Participants were shown one-sentence written scenarios in which a real person named Peter was involved in situations that included George Bush or Cinderella. In one set of situations, Peter simply received information about both characters. The other set of situations involved direct interactions with the characters. What participants had to do was simple. They had to decide whether the scenarios portrayed were possible or not—that is, if they could indeed happen in the physical reality of the world we live in.

How does the brain operate when assessing these two different types of scenarios? The results were intriguing. Common to both types of situation was some level of mental activity in parts of the brain, such as the hippocampus, that are at work when we in general recall facts or events. Such activity was detectable regardless of the nature of the scenario—that is, whether the scenario was informative (when Peter only heard about the characters) or interactive (when he actually met the characters). However, there were a few striking finer distinctions in activity relative to the two scenarios and these depended on the type of character involved.

When exposed to scenarios featuring George Bush—a famous real person—the brain involved the anterior medial prefrontal cortex (amPFC) and the precuneus and posterior cingulate cortex (PCC). The amPFC and the PCC are medial parts of the brain that are involved in autobiographical memory retrieval as well as self-referential thinking.

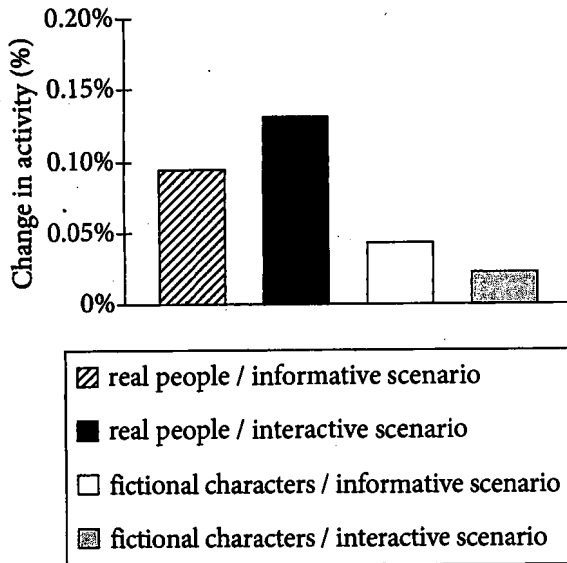
When fictional characters were featured, the brain responded somewhat differently. Parts of the lateral frontal lobe, such as the inferior frontal gyrus (IFG), were more active. The IFG is thought to provide mirroring capacities, but is also involved in

high-level language processing. The fact that George Bush was linked to personal memory retrieval but Cinderella was not led the researchers to think that a crucial difference when assessing real or fictional scenarios might lie not so much in the degree of *realness* of the character involved, but in their *relevance* to our reality. To test this hypothesis, they peered into the brain of nineteen new volunteers who, as in the previous study, were asked to assess the possibility that a real protagonist could either imagine, hear or dream about or actually interact with a set of characters. However, this time the characters involved in the scenarios were ranked in three categories with differing degrees of personal relevance for the participants: their friends or family (high personal relevance), famous people (medium relevance) and fictional characters (low personal relevance). As predicted, the activation in the amPFC and PCC was indeed proportionally modulated by the degree of relevance of the characters described. It was highest in the case of friends and family members and lowest in the case of fictional characters.

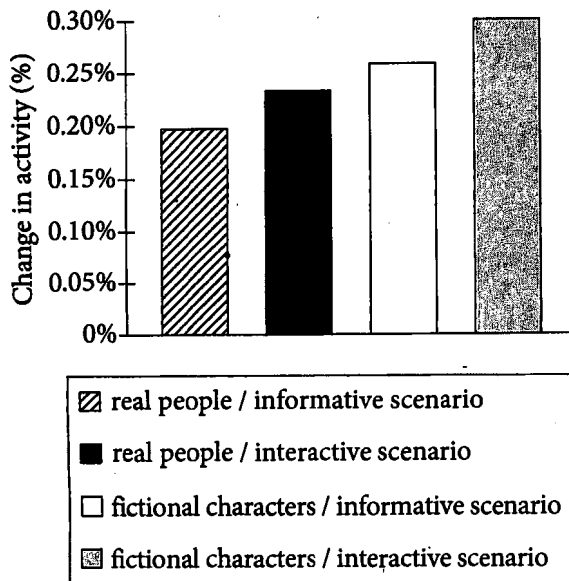
The researchers gave the following explanation. When you encounter real characters, even if you have never met them, they will integrate into a wide, comprehensive and intricately connected structure in the conceptual storage of your mind. You are familiar with their basic behavioural features as human beings. You know more or less how they think, what kind of opinions they may produce. You are aware of the range of emotions that you can expect from them. By contrast, your mind is not equally familiar with fictional characters. No matter how much we know about the world of a fictional character there will still be something alien and inscrutable to us about that world. You may have read all the books about a fictional character, but the amount of information you have gathered about that character is still definitely limited compared with the wealth of information that is available to you about members of your family, friends, or famous real people who are part of your immediate and past experience. Basically, in order to understand a fictional character, you need to dig deeper into your imagination, because he or she is bound up to fewer nodes of reference in your network than are real, or relevant, people in your life.

<sup>1</sup> fMRI is short for "functional magnetic resonance imaging."

**Figure 1**  
Percent Change in Activity  
in the Precuneus and Posterior Cingulate  
Cortex (PCC) in Experimental Scenarios



**Figure 2**  
Percent Change in Activity  
in the Inferior Frontal Gyrus  
(IFG) in Experimental Scenarios



11

The main purpose of the passage is to

- A) advocate for more research on how the brain connects real and fictional events.
- B) inform the reader about the results of experiments on brain function.
- C) explore how the brain processes factual information.
- D) argue that the way the brain processes fictional situations is widely misunderstood.

12

As used in line 19, “operate” most nearly means

- A) manipulate.
- B) exercise.
- C) function.
- D) conduct.

13

Which choice best supports the claim that there are important similarities between how the brain responds to scenarios involving real people and how it responds to those involving fictional people?

- A) Lines 21-24 (“Common . . . events”)
- B) Lines 29-32 (“However . . . involved”)
- C) Lines 72-77 (“You are . . . them”)
- D) Lines 81-88 (“You may . . . experience”)

14

It can reasonably be inferred from the passage that the results of Abraham's experiments showed that

- A) interactive scenarios resulted in finer distinctions in brain activity than did informative scenarios.
- B) both interactive and informative scenarios required memory recall.
- C) informative scenarios were more likely to be considered possible than were interactive scenarios.
- D) all scenarios yielded some unclassifiable brain activity.

15

The greatest increase in activity in the amPFC of a research subject's brain would most likely be observed in scenarios in which a real protagonist

- A) has a conversation with a real person who is unknown to the subject.
- B) interacts with real people who were childhood friends of the subject's.
- C) encounters a fictional character about whom the subject is quite knowledgeable.
- D) is told about a real person the subject has previously met.

16

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 11-12 ("In one . . . characters")
- B) Lines 56-62 ("However . . . personal relevance")
- C) Lines 62-64 ("As predicted . . . described")
- D) Lines 72-74 ("You are . . . beings")

17

According to the passage, the brain stores information about famous real people

- A) in order to allow efficient retrieval later.
- B) exactly as it stores information about close friends or family members.
- C) in different areas depending on the type of contact one has with them.
- D) in a network of memories broader in scope than memories about fictional people.

18

As used in line 80, "alien" most nearly means

- A) inconsistent.
- B) foreign.
- C) extraterrestrial.
- D) complex.

19

According to figure 1, the percent increase in the activity of the PCC in subjects reacting to a scenario in which someone has a conversation with a real person is approximately

- A) 0.05%.
- B) 0.1%.
- C) 0.13%.
- D) 0.18%.

20

According to figure 1 and figure 2, the highest percent change in activity in any of the studied areas of the brain was in the

- A) PCC when the subjects were exposed to an interactive scenario involving real people.
- B) IFG when the subjects were exposed to an interactive scenario involving fictional people.
- C) PCC when the subjects were exposed to any scenario involving fictional people.
- D) IFG when the subjects were exposed to an interactive scenario involving real people.

**Questions 21-30 are based on the following passage.**

This passage is adapted from David Grimm, "The Genes That Turned Wildcats into Kitty Cats." ©2014 by American Association for the Advancement of Science.

Place a housecat next to its direct ancestor, the Near Eastern wildcat, and it may take you a minute to spot the difference. They're about the same size and shape, and, well, they both look like cats. But the wildcat is fierce and feral, whereas the housecat, thanks to nearly 10,000 years of domestication, is tame and adaptable enough to have become the world's most popular pet. Now scientists have begun to pinpoint the genetic changes that drove this remarkable transformation. The findings, based on the first high-quality sequence of the cat genome, could shed light on how other creatures become tame.

"This is the closest thing to a smoking gun we've ever had," says Greger Larson, an evolutionary biologist at the University of Oxford in the United Kingdom who has studied the domestication of pigs, dogs, and other animals. "We're much closer to understanding the nitty-gritty of domestication than we were a decade ago."

Cats first entered human society about 9,500 years ago, not long after people first took up farming in the Middle East. Drawn to rodents that had invaded grain stores, wildcats slunk out of the deserts and into villages. There, many scientists suspect, they mostly domesticated themselves, with the friendliest ones able to take advantage of human table scraps and protection. Over thousands of years, cats shrank slightly in size, acquired a panoply of coat colors and patterns, and (largely) shed the antisocial tendencies of their past. Domestic animals from cows to dogs have undergone similar transformations, yet scientists know relatively little about the genes involved.

Researchers led by Michael Montague, a postdoc at the Washington University School of Medicine in St. Louis, have now pinpointed some of them. The scientists started with the genome of a domestic cat—a female Abyssinian—that had been published in draft form in 2007, then filled in missing sequences and identified genes. They compared the resulting genome with those of cows, tigers, dogs, and humans.

The analysis, published recently in the *Proceedings of the National Academy of Sciences*, revealed 281 genes that show signs of rapid or numerous genetic changes—a hallmark of recent selections—in domestic cats. Some appear to be involved in hearing and vision, the senses that felines rely on most. Others play a role in fat metabolism and are likely an adaptation to cats' highly carnivorous lifestyle.

But the most intriguing findings came when the team sequenced the genomes of 22 domestic cats—representing a wide variety of breeds and locations—and compared them with the genomes of two Near Eastern and two European wildcats. The researchers uncovered at least 13 genes that changed as cats morphed from feral to friendly. Some of these, based on previous studies of knockout mice [genetically engineered mice], seem to play a role in cognition, including fear responses and the ability to learn new behaviors when given food rewards. "That jibes with what we know about the domestication of cats," Montague says, "because they would have needed to become less fearful of new locations and individuals, and the promise of food would have kept them sticking around."

"This is my favorite part of the paper," says Kerstin Lindblad-Toh, a leading comparative genomicist at Uppsala University in Sweden who was not involved in the work. She notes that a few of the genes the team identified code for glutamate receptors, which play a key role in learning and memory and may have been selected in humans as well. "We're hitting on genes that allow our brains to develop and make us interact socially."

The team also found five genes in domestic cats that influence the migration of neural crest cells, stem cells in the developing embryo that affect everything from skull shape to coat color. This supports a recent proposal that such cells may be the master control switches of domestication, explaining why domestic animals share common traits, such as smaller brains and certain pigmentation patterns.

So why are cats still a bit wilder than our other favorite domesticate, the dog? Co-author William Murphy, a geneticist at Texas A&M University, College Station, says the cat genome appears to have undergone less intense and more recent evolutionary



90 pressure than that of dogs; that's not surprising, considering that dogs may have lived with us for up to 30,000 years. "Cats were not selected for a purpose like dogs and other domesticates," Murphy speculates.

21

The main purpose of the passage is to

- A) summarize a study of the genetic differences between various breeds of domestic cats.
- B) describe findings regarding the benefits that cats provided to humans as a result of domestication.
- C) discuss research into the genetic changes that cats underwent as part of domestication.
- D) present experimental evidence contrasting the behavior of wildcats and domestic cats.

22

The author includes the phrase "and, well" (line 4) most likely to

- A) stress that the relationship between wildcats and domestic cats is continually shifting.
- B) introduce a discussion of the physical attributes of domestic cats.
- C) advance a tentative hypothesis about the evolution and development of wildcats.
- D) acknowledge the obviousness of a similarity between wildcats and domestic cats.

23

The passage suggests that some scientists would agree with which statement about the domestication of cats?

- A) It did not occur until after the domestication of cows and pigs.
- B) It caused cats to slightly increase in size.
- C) It was not intentionally undertaken by humans.
- D) It resulted from humans' need for pets.

24

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 25-28 ("There . . . protection")
- B) Lines 28-31 ("Over . . . past")
- C) Lines 31-34 ("Domestic . . . involved")
- D) Lines 44-48 ("The analysis . . . cats")

25

Which choice best describes how Montague's team achieved the results discussed in the sixth paragraph (lines 52-67)?

- A) The team sequenced the genomes of twenty-two breeds of domestic cats from around the world, compared those genomes to one another, and identified the genes that appear to have changed as a result of breeding.
- B) The team used a previously published genome sequence of a domestic cat to locate the genes associated with hearing and vision, compared those genes to the same genes in two species of wildcats, and identified the point in time at which those genes appear to have diverged.
- C) The team sequenced the genomes of several breeds of geographically diverse domestic cats, compared those genomes to the genomes of four wildcats from two locations, and identified the genes that appear to have changed due to domestication.
- D) The team sequenced the genomes of domestic cats from two locations, compared those genomes to the genomes of wildcats from the same locations, and identified which genes appear to be geographically specific.

1  
26

As presented in the passage, Montague's explanation for the gene changes in domestic cats is based on the assumption that

- A) genes associated with particular characteristics in one species are associated with similar characteristics in other species.
- B) missing sequences in the genome of one particular breed of cat can be completed by the parallel sequences in the genome of another breed of cat.
- C) the number of genes affected by domestication is greater in some breeds of domestic cats than in other breeds.
- D) changes to the cat genome as a result of domestication occurred simultaneously with changes to genomes of other species associated with sociability.

27

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 37-41 ("The scientists . . . genes")
- B) Lines 57-58 ("The researchers . . . friendly")
- C) Lines 59-63 ("Some . . . rewards")
- D) Lines 75-76 ("We're hitting . . . socially")

28

According to the passage, the discovery that some genes in domestic cats influence the migration of neural crest cells is important because neural crest cells are

- A) likely to be overlooked in analyses regarding the evolution of domestic animals.
- B) potentially responsible for domestic animals' ability to thrive in harsh environments.
- C) thought to be fundamental to the overall process of the domestication of animals.
- D) considered to be critical to domestic animals' reproduction.

29

As used in line 83, "common traits" most nearly means

- A) widespread mannerisms.
- B) inferior qualities.
- C) familiar habits.
- D) similar features.

30

The author most likely includes the quotation in the last sentence of the passage to

- A) offer an alternative to generally accepted beliefs about the domestication of cats.
- B) suggest a potential explanation for the distinct way in which domestic cats developed.
- C) provide a possible reason for the continual changes to the cat genome.
- D) qualify previously discussed findings about domestic animals.

**Questions 31-41 are based on the following passages.**

Passage 1 is adapted from a speech delivered in 1854 by Stephen Douglas, "Defense of the Kansas-Nebraska Bill." In 1854, Douglas, a senator from Illinois, proposed a bill allowing voters in the new territories of Kansas and Nebraska to decide whether slavery should be permitted there. When enacted, the bill would effectively repeal the Missouri Compromise of 1820, which prohibited slavery in these territories. Passage 2 is adapted from a speech delivered in 1856 by Charles Sumner, "The Crime against Kansas." Sumner was a senator from Massachusetts.

**Passage 1**

The argument of [my opponents] is predicated upon the assumption that the policy of the fathers of the republic was to prohibit slavery in all the territory ceded by the old states to the Union and made  
5 United States territory for the purpose of being organized into new states. I take issue upon that statement. . . .

[Y]ou find upon the statute books under Washington and the early Presidents provisions of  
10 law showing that in the southwestern territories the right to hold slaves was clearly implied or recognized, while in the northwest territories it was prohibited. The only conclusion that can be fairly and honestly drawn from that legislation is that it  
15 was the policy of the fathers of the republic to prescribe a line of demarcation between free territories and slaveholding territories by a natural or a geographical line, being sure to make that line correspond, as near as might be, to the laws of  
20 climate, of production, and probably of all those other causes that would control the institution and make it either desirable or undesirable to the people inhabiting the respective territories. . . .

Now I ask the friends and the opponents of this  
25 measure to look at it as it is. Is not the question involved the simple one, whether the people of the territories shall be allowed to do as they please upon the question of slavery, subject only to the limitations of the Constitution? That is all the bill provides; and  
30 it does so in clear, explicit, and unequivocal terms. . . . I do not wish to deal in any equivocal language. If the principle is right, let it be avowed and maintained. If it is wrong, let it be repudiated. Let all this quibbling about the Missouri Compromise,

35 about the territory acquired from France, about the act of 1820, be cast behind you; for the simple question is—Will you allow the people to legislate for themselves upon the subject of slavery? Why should you not?

**Passage 2**

40 [T]he Nebraska Bill was in every respect a swindle. It was a swindle by the South of the North. It was, on the part of those who had already completely enjoyed their share of the Missouri Compromise, a swindle of those whose share was yet  
45 absolutely untouched. . . . It was a swindle of a broad territory, thus cheated of protection against slavery. It was a swindle of a great cause, early espoused by Washington, Franklin, and Jefferson, surrounded by the best fathers of the republic. Sir, it was a swindle of  
50 God-given inalienable rights. Turn it over; look at it on all sides, and it is everywhere a swindle; and, if the word I now employ has not the authority of classical usage, it has, on this occasion, the indubitable authority of fitness. No other word will adequately  
55 express the mingled meanness and wickedness of the cheat.

Its character was still further apparent in the general structure of the bill. Amid overflowing professions of regard for the sovereignty of the  
60 People in the Territory, they were despoiled of every essential privilege of sovereignty. They were not allowed to choose their governor, secretary, chief justice, associate justices, attorney, or marshal—all of whom are sent from Washington; nor were they  
65 allowed to regulate the salaries of any of these functionaries, or the daily allowance of the legislative body, or even the pay of the clerks and doorkeepers; but they were left free to adopt slavery.

And this was called popular sovereignty! Time  
70 does not allow, nor does the occasion require, that I should stop to dwell on this transparent device to cover a transcendent wrong. Suffice it to say that slavery is in itself an arrogant denial of human rights, and by no human reason can the power to establish  
75 such a wrong be placed among the attributes of any just sovereignty. In refusing it such a place, I do not deny popular rights, but uphold them; I do not restrain popular rights, but extend them. And, sir, to this conclusion you must yet come, unless deaf, not  
80 only to the admonitions of political justice, but also to the genius of our own Constitution, under which, when properly interpreted, no valid claim for slavery can be set up anywhere in the national territory.

31

As used in line 12, “recognized” most nearly means

- A) formally acknowledged.
- B) publicly commended.
- C) plainly confessed.
- D) accurately recalled.

32

In Passage 1, Douglas implies that legislators’ consideration of the bill he has proposed has been clouded by the

- A) moral dilemmas inherent in the issue of slavery.
- B) emphatic language that characterizes the text of the bill.
- C) discussion of issues that are fundamentally beside the point.
- D) preexisting loyalties and rivalries present among legislators.

33

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 25-29 (“Is not . . . Constitution”)
- B) Lines 29-32 (“That . . . language”)
- C) Lines 32-33 (“If the . . . repudiated”)
- D) Lines 33-36 (“Let all . . . you”)

34

The repetition of “swindle” in the first paragraph of Passage 2 has the main effect of creating

- A) a skeptical tone that reveals Sumner’s distrust of his fellow senators.
- B) an outraged tone that expresses Sumner’s indignation over the Kansas-Nebraska Bill.
- C) a pessimistic tone that reflects Sumner’s conviction that the Kansas-Nebraska Act cannot be repealed.
- D) an aggrieved tone that shows Sumner’s sense of betrayal over the founding fathers’ support for slavery.

35

One of Sumner’s central claims in Passage 2 is that the Kansas-Nebraska Bill had the effect of

- A) disrupting the balance of authority between slaveholding and nonslaveholding territorial governments.
- B) depriving a federal policy that enjoyed widespread popularity of its legitimacy.
- C) disenfranchising citizens in territories where the Missouri Compromise had yielded no obvious benefits.
- D) giving the impression that the rights of citizens in certain territories were being expanded when they were in fact being curtailed.

36

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 45-46 (“It was . . . slavery”)
- B) Lines 58-61 (“Amid . . . of sovereignty”)
- C) Lines 72-76 (“Suffice . . . sovereignty”)
- D) Lines 78-83 (“And, sir . . . territory”)

37

In Passage 2, Sumner indicates that under the Kansas-Nebraska Bill, the national government had the authority to

- A) regulate commerce in the territories.
- B) enforce territorial laws concerning slavery.
- C) mediate disputes between territorial governments.
- D) appoint officials to territorial posts.

38

In the context of Sumner's argument, lines 76-77 ("In refusing . . . them") serve primarily to

- A) reiterate that he shares certain fundamental values with supporters of slavery.
- B) provide an explanation for his claims about the historical legacy of slavery.
- C) rephrase an opinion on abolition that he offered earlier in his speech.
- D) argue that his position on slavery constitutes authentic popular sovereignty.

39

Which choice best identifies a distinction in how Douglas and Sumner characterize the Kansas-Nebraska Bill?

- A) Douglas characterizes it as straightforward in its intent, while Sumner characterizes it as fundamentally deceptive.
- B) Douglas sees it as safeguarding the interests of the slaveholding territories, while Sumner sees it as unfairly burdening those territories.
- C) Douglas characterizes it as progressive in its treatment of the issue of slavery, while Sumner characterizes it as upholding the status quo.
- D) Douglas regards it as deeply relevant to key national concerns, while Sumner regards it as largely irrelevant to those concerns.

40

Sumner would most likely fault the "simple question" (lines 36-37) proposed by Douglas in Passage 1 for being

- A) biased, since it places the interests of territories over those of established states.
- B) irrelevant, since territorial citizens already have the freedom to legislate on local matters.
- C) misleading, since it fails to acknowledge that certain provisions of the Kansas-Nebraska Bill are unrelated to territorial sovereignty.
- D) immoral, since it focuses on the political rights of territorial citizens at the expense of the human rights of slaves.

41

Which choice best identifies a key difference in how Douglas and Sumner make use of the Constitution?

- A) Douglas suggests that the Constitution must be adapted to address the present circumstances of slavery, whereas Sumner contends that the Constitution requires no alteration.
- B) Douglas suggests that the Constitution's provisions for slavery are open to interpretation, whereas Sumner asserts that the Constitution's stance on slavery is unambiguous.
- C) Douglas suggests that the Constitution's restrictions on slavery do not apply to the territories, whereas Sumner argues that the Constitution treats states and territories equally.
- D) Douglas suggests that slavery may be permitted in the territories without violating the Constitution, whereas Sumner insists that slavery is not compatible with the ideals of the Constitution.

**Questions 42-52 are based on the following passage and supplementary material.**

This passage and accompanying figure are adapted from Sandra M. Faber et al., "Staring Back to Cosmic Dawn." ©2014 by F+W Media, Inc.

The Hubble Space Telescope (HST) is a time machine, staring not only billions of light-years into the depths of space but also billions of years back in time. With its extraordinarily sensitive detectors  
 5 above Earth's shrouding and blurring atmosphere, HST can witness the peak of star formation at cosmic high noon, which ended about 5 billion years after the Big Bang. And at the outer limits of its capabilities, we wondered if it could detect the  
 10 faintest candles of creation: the earliest galaxies made of the earliest stars at cosmic dawn, when the universe was less than a billion years old.

Those were the hopes of two of us authors (Faber and Ferguson) after NASA astronauts installed HST's  
 15 Wide-Field Camera 3 (WFC3) in 2009, which enabled Hubble to survey the infrared sky about 30 times faster than before. Within a few months, Hubble pointed the new camera at the Hubble Ultra-Deep Field (HUDF)—a tiny region in the  
 20 constellation Fornax only a tenth the diameter of the full Moon—and took exposures totaling about three days. Those deep HUDF images revealed some of the most distant galaxies ever found, which look very different than nearby galaxies. But the HUDF  
 25 represented just a pinprick poke at the universe.

So we began an ambitious program at visible and near-infrared wavelengths as a natural successor to HUDF: the Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey (CANDELS),  
 30 pronounced "candles." We designed CANDELS primarily to document the first one-third of galaxy evolution. The program also would enable astronomers to search for the most distant Type Ia supernovae—exploding white dwarf stars that are the  
 35 best-known standard candles for measuring the universe's recent expansion rate. CANDELS could thus test whether Type Ia supernovae are also a valid yardstick for the early universe.

CANDELS became the largest observing program  
 40 ever undertaken by Hubble. The telescope devoted 600 hours—fully 10% of its observing time—to CANDELS for three years, surveying an area of sky 60 times larger than the HUDF, albeit to brighter limiting magnitudes (about 27 for CANDELS  
 45 compared to 30 for the HUDF). CANDELS targeted

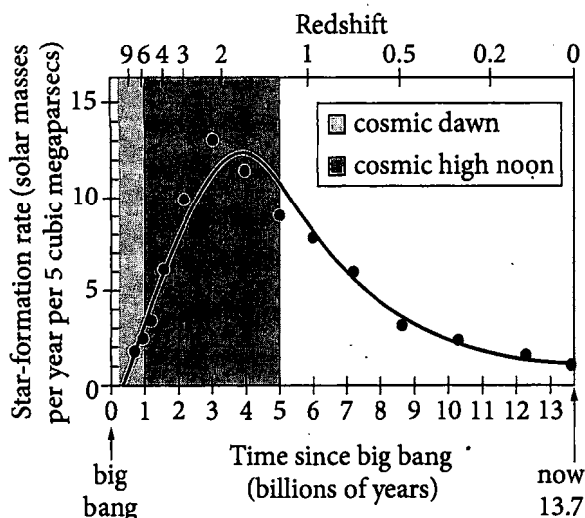
five patches of the northern and southern skies, each about one-fourth the angular size of the Orion Nebula (M42). Each patch has been well studied from radio to X rays, giving plenty of complementary  
 50 data across the electromagnetic spectrum.

Because remote galaxies are so faint, the five target areas were away from our Milky Way's star-studded plane. Much as pollsters and medical researchers learn about the human population as a  
 55 whole by studying carefully selected samples of a small number of individuals, we chose the five target areas because they're physically representative of the universe at large.

Depending on the field, CANDELS took multiple  
 60 images with exposure times ranging from 40 minutes to roughly 3 hours through each of two or three infrared filters. Although CANDELS surveyed a total area only about that of the full Moon, the long exposures looked so deep into the cosmos that they  
 65 recorded roughly a quarter-million ancient galaxies in enough detail to reveal their sizes, shapes, and even gross internal structures. Such a rich treasure trove provides powerful new data for statistical studies of galaxy growth and evolution.

70 Astrophysicists will continue to analyze the wealth of observations for years to come. The data have already led to new findings and mysteries about the early universe.

Star-Formation Rate since the Big Bang



Masses of stars are expressed in units of solar masses, where one solar mass equals the mass of the Sun. The redshift is a measurement of distance and corresponds to the time when an object emitted the light we observe.

42

Over the course of the passage, the main focus shifts from

- A) an example of data collected using the HST to a discussion of design flaws that led to replacing several instruments on the HST.
- B) an explanation of a new theory of star formation to an experiment using the HST designed to test the validity of that theory.
- C) a list of the authors' accomplishments to a description of a new experiment using the HST to investigate how galaxies form.
- D) an overview of the capabilities of the HST to a discussion of research undertaken that utilized those capabilities.

43

Which choice best supports the conclusion that the first galaxies formed less than 1 billion years after the big bang?

- A) Lines 1-4 ("The Hubble . . . time")
- B) Lines 4-8 ("With its . . . Bang")
- C) Lines 8-12 ("And at . . . old")
- D) Lines 22-24 ("Those . . . galaxies")

44

Based on the passage, what can reasonably be inferred about galaxies billions of years ago?

- A) They looked very different from galaxies today.
- B) They were dominated by Type Ia supernovae.
- C) They were grouped together in one location in the sky.
- D) They were much larger than astronomers had expected.

45

As used in line 31, "document" most nearly means

- A) produce.
- B) define.
- C) record.
- D) construct.

46

In the context of the research described in the passage, Type Ia supernovae may be useful because they could allow astronomers to

- A) determine the expansion rate of the universe soon after the big bang.
- B) more accurately calibrate other methods of measuring distance.
- C) better understand what causes white dwarf stars to explode.
- D) catalog the earliest known galaxies according to their physical properties.

47

As used in line 48, “patch” most nearly means

- A) connection.
- B) allotment.
- C) covering.
- D) region.

48

Based on the passage, the authors would most likely say that conducting deep all-sky surveys to obtain information about ancient galaxies is

- A) practical.
- B) unnecessary.
- C) justified.
- D) incomplete.

49

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 39-45 (“CANDELS . . . for the HUDF”)
- B) Lines 51-53 (“Because . . . plane”)
- C) Lines 53-58 (“Much . . . large”)
- D) Lines 67-69 (“Such . . . evolution”)

50

The reference to the full Moon in line 63 primarily serves to

- A) give readers a sense of the size of the area investigated by CANDELS.
- B) identify the direction the HST was directed while collecting data for the HUDF.
- C) help readers understand how images are processed by the Wide-Field Camera 3.
- D) show how much farther away from Earth ancient galaxies are than the Moon is.

51

According to the figure, which choice is a possible redshift of a galaxy made of stars that formed during cosmic dawn?

- A) 1.0
- B) 1.8
- C) 5.0
- D) 9.0

52

Astronomers estimate that the Sun formed about 8.5 billion years after the big bang. According to the figure, what was the star formation rate, in solar masses per year per 5 cubic megaparsecs, at the time the Sun formed?

- A) About 1.0
- B) About 1.5
- C) About 4.0
- D) About 6.5

## STOP

**If you finish before time is called, you may check your work on this section only.**

**Do not turn to any other section.**