

SAT Critical Reading

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 from Charlotte Brontë, *The Professor*, originally published in 1857.

No man likes to acknowledge that he has made a mistake in the choice of his profession, and every man, worthy of the name, will row long against wind and tide before he allows himself to cry out, “I am baffled!” and submits to be floated passively back to land. From the first week of my residence in X—I felt my occupation irksome. The thing itself—the work of copying and translating business-letters—was a dry and tedious task enough, but had that been all, I should long have borne with the nuisance; I am not of an impatient nature, and influenced by the double desire of getting my living and justifying to myself and others the resolution I had taken to become a tradesman, I should have endured in silence the rust and cramp of my best faculties; I should not have whispered, even inwardly, that I longed for liberty; I should have pent in every sigh by which my heart might have ventured to intimate its distress under the closeness, smoke, monotony, and joyless tumult of Bigben Close, and its panting desire for freer and fresher scenes; I should have set up the image of Duty, the fetish of Perseverance, in my small bedroom at Mrs. King’s lodgings, and they two should have been my household gods, from which

my darling, my cherished-in-secret, Imagination, the tender and the mighty, should never, either by softness or strength, have severed me. But this was not all; the antipathy which had sprung up between myself and my employer striking deeper root and spreading denser shade daily, excluded me from every glimpse of the sunshine of life; and I began to feel like a plant growing in humid darkness out of the slimy walls of a well.

Antipathy is the only word which can express the feeling Edward Crimsworth had for me—a feeling, in a great measure, involuntary, and which was liable to be excited by every, the most trifling movement, look, or word of mine. My southern accent annoyed him; the degree of education evinced in my language irritated him; my punctuality, industry, and accuracy, fixed his dislike, and gave it the high flavour and poignant relish of envy; he feared that I too should one day make a successful tradesman. Had I been in anything inferior to him, he would not have hated me so thoroughly, but I knew all that he knew, and, what was worse, he suspected that I kept the padlock of silence on mental wealth in which he was no sharer. If he could have once placed me in a ridiculous or mortifying position, he would have forgiven me much, but I was guarded by three faculties—Caution, Tact, Observation; and prowling and prying as was Edward’s malignity, it could never baffle the lynx-eyes of these, my natural sentinels. Day by day did his malice watch my tact, hoping it would sleep, and prepared to steal snake-like on its slumber; but tact, if it be genuine, never sleeps.

I had received my first quarter's wages, and was returning to my lodgings, possessed heart and soul with the pleasant feeling that the master who had paid me grudged every penny of that hard-earned pittance—I had long ceased to regard Mr. Crimsworth as my brother—he was a hard, grinding master; he wished to be an inexorable tyrant: that was all). Thoughts, not varied but strong, occupied my mind; two voices spoke within me; again and again they uttered the same monotonous phrases. One said: "William, your life is intolerable." The other: "What can you do to alter it?" I walked fast, for it was a cold, frosty night in January; as I approached my lodgings, I turned from a general view of my affairs to the particular speculation as to whether my fire would be out; looking towards the window of my sitting-room, I saw no cheering red gleam.

1

Which choice best summarizes the passage?

- A) A character describes his dislike for his new job and considers the reasons why.
- B) Two characters employed in the same office become increasingly competitive.
- C) A young man regrets privately a choice that he defends publicly.
- D) A new employee experiences optimism, then frustration, and finally despair.

2

The main purpose of the opening sentence of the passage is to

- A) establish the narrator's perspective on a controversy.
- B) provide context useful in understanding the narrator's emotional state.
- C) offer a symbolic representation of Edward Crimsworth's plight.
- D) contrast the narrator's good intentions with his malicious conduct.

3

During the course of the first paragraph, the narrator's focus shifts from

- A) recollection of past confidence to acknowledgment of present self-doubt.
- B) reflection on his expectations of life as a tradesman to his desire for another job.
- C) generalization about job dissatisfaction to the specifics of his own situation.
- D) evaluation of factors making him unhappy to identification of alternatives.

4

The references to "shade" and "darkness" at the end of the first paragraph mainly have which effect?

- A) They evoke the narrator's sense of dismay.
- B) They reflect the narrator's sinister thoughts.
- C) They capture the narrator's fear of confinement.
- D) They reveal the narrator's longing for rest.

5

The passage indicates that Edward Crimsworth's behavior was mainly caused by his

- A) impatience with the narrator's high spirits.
- B) scorn of the narrator's humble background.
- C) indignation at the narrator's rash actions.
- D) jealousy of the narrator's apparent superiority.

6

The passage indicates that when the narrator began working for Edward Crimsworth, he viewed Crimsworth as a

- A) harmless rival.
- B) sympathetic ally.
- C) perceptive judge.
- D) demanding mentor.

7

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

- A) Lines 28-31 (“the antipathy . . . life”)
- B) Lines 38-40 (“My southern . . . irritated him”)
- C) Lines 54-56 (“Day . . . slumber”)
- D) Lines 61-62 (“I had . . . brother”)

8

At the end of the second paragraph, the comparisons of abstract qualities to a lynx and a snake mainly have the effect of

- A) contrasting two hypothetical courses of action.
- B) conveying the ferocity of a resolution.
- C) suggesting the likelihood of an altercation.
- D) illustrating the nature of an adversarial relationship.

9

The passage indicates that, after a long day of work, the narrator sometimes found his living quarters to be

- A) treacherous.
- B) dreary.
- C) predictable.
- D) intolerable.

10

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

- A) Lines 17-21 (“I should . . . scenes”)
- B) Lines 21-23 (“I should . . . lodgings”)
- C) Lines 64-67 (“Thoughts . . . phrases”)
- D) Lines 68-74 (“I walked . . . gleam”)

Questions 11-21 are based on the following passage and supplementary material.

This passage is adapted from Alan Ehrenhalt, *The Great Inversion and the Future of the American City*. ©2013 by Vintage. Ehrenhalt is an urbanologist—a scholar of cities and their development. Demographic inversion is a phenomenon that describes the rearrangement of living patterns throughout a metropolitan area.

We are not witnessing the abandonment of the suburbs, or a movement of millions of people back to the city all at once. The 2010 census certainly did not
 Line turn up evidence of a middle-class stampede to the
 5 nation’s cities. The news was mixed: Some of the larger cities on the East Coast tended to gain population, albeit in small increments. Those in the Midwest, including Chicago, tended to lose substantial numbers. The cities that showed gains in
 10 overall population during the entire decade tended to be in the South and Southwest. But when it comes to measuring demographic inversion, raw census numbers are an ineffective blunt instrument. A closer look at the results shows that the most powerful
 15 demographic events of the past decade were the movement of African Americans out of central cities (180,000 of them in Chicago alone) and the settlement of immigrant groups in suburbs, often ones many miles distant from downtown.
 20 Central-city areas that gained affluent residents in the first part of the decade maintained that population in the recession years from 2007 to 2009. They also, according to a 2011 study by Brookings, suffered considerably less from increased
 25 unemployment than the suburbs did. Not many young professionals moved to new downtown condos in the recession years because few such residences were being built. But there is no reason to believe that the demographic trends prevailing prior
 30 to the construction bust will not resume once that bust is over. It is important to remember that demographic inversion is not a proxy for population growth; it can occur in cities that are growing, those whose numbers are flat, and even in those
 35 undergoing a modest decline in size.

America’s major cities face enormous fiscal problems, many of them the result of public pension obligations they incurred in the more prosperous years of the past two decades. Some, Chicago

40 prominent among them, simply are not producing enough revenue to support the level of public services to which most of the citizens have grown to feel entitled. How the cities are going to solve this problem, I do not know. What I do know is that if
 45 fiscal crisis were going to drive affluent professionals out of central cities, it would have done so by now. There is no evidence that it has.

The truth is that we are living at a moment in which the massive outward migration of the affluent
 50 that characterized the second half of the twentieth century is coming to an end. And we need to adjust our perceptions of cities, suburbs, and urban mobility as a result.

Much of our perspective on the process of
 55 metropolitan settlement dates, whether we realize it or not, from a paper written in 1925 by the University of Chicago sociologist Ernest W. Burgess. It was Burgess who defined four urban/suburban zones of settlement: a central business district; an
 60 area of manufacturing just beyond it; then a residential area inhabited by the industrial and immigrant working class; and finally an outer enclave of single-family dwellings.

Burgess was right about the urban America of
 65 1925; he was right about the urban America of 1974. Virtually every city in the country had a downtown,

where the commercial life of the metropolis was conducted; it had a factory district just beyond; it had districts of working-class residences just beyond that;
 70 and it had residential suburbs for the wealthy and the upper middle class at the far end of the continuum. As a family moved up the economic ladder, it also moved outward from crowded working-class districts to more spacious apartments and,
 75 eventually, to a suburban home. The suburbs of Burgess's time bore little resemblance to those at the end of the twentieth century, but the theory still essentially worked. People moved ahead in life by moving farther out.

80 But in the past decade, in quite a few places, this model has ceased to describe reality. There are still downtown commercial districts, but there are no factory districts lying next to them. There are scarcely any factories at all. These close-in parts of
 85 the city, whose few residents Burgess described as dwelling in "submerged regions of poverty, degradation and disease," are increasingly the preserve of the affluent who work in the commercial core. And just as crucially newcomers to America are
 90 not settling on the inside and accumulating the resources to move out; they are living in the suburbs from day one.

United States Population by Metropolitan Size/Status, 1980–2010

Chart 1

2010 Population Shares
by Metro Size (%)

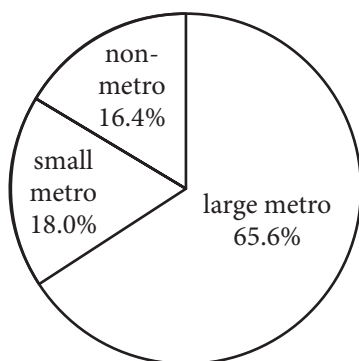
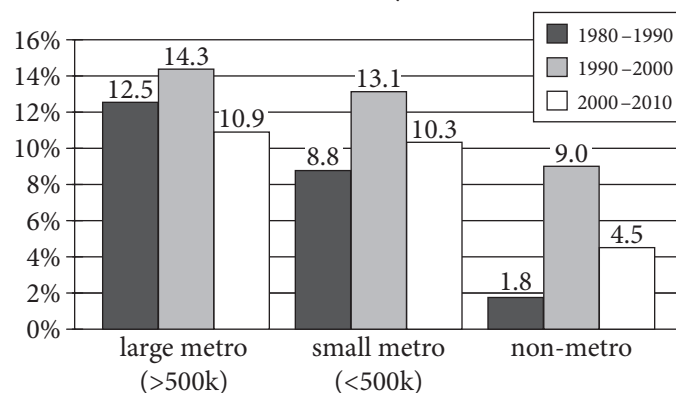


Chart 2

Growth Rates by Metro Size



Adapted from William H. Frey, "Population Growth in Metro America since 1980: Putting the Volatile 2000s in Perspective." Published 2012 by Metropolitan Policy Program, Brookings Institution.

11

Which choice best summarizes the first paragraph of the passage (lines 1-35)?

- A) The 2010 census demonstrated a sizeable growth in the number of middle-class families moving into inner cities.
- B) The 2010 census is not a reliable instrument for measuring population trends in American cities.
- C) Population growth and demographic inversion are distinct phenomena, and demographic inversion is evident in many American cities.
- D) Population growth in American cities has been increasing since roughly 2000, while suburban populations have decreased.

12

According to the passage, members of which group moved away from central-city areas in large numbers in the early 2000s?

- A) The unemployed
- B) Immigrants
- C) Young professionals
- D) African Americans

13

In line 34, “flat” is closest in meaning to

- A) static.
- B) deflated.
- C) featureless.
- D) obscure.

14

According to the passage, which choice best describes the current financial situation in many major American cities?

- A) Expected tax increases due to demand for public works
- B) Economic hardship due to promises made in past years
- C) Greater overall prosperity due to an increased inner-city tax base
- D) Insufficient revenues due to a decrease in manufacturing

15

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

- A) Lines 36-39 (“America’s . . . decades”)
- B) Lines 43-44 (“How . . . not know”)
- C) Lines 44-46 (“What . . . now”)
- D) Lines 48-51 (“The truth . . . end”)

16

The passage implies that American cities in 1974

- A) were witnessing the flight of minority populations to the suburbs.
- B) had begun to lose their manufacturing sectors.
- C) had a traditional four-zone structure.
- D) were already experiencing demographic inversion.

17

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

- A) Lines 54-57 (“Much . . . Ernest W. Burgess”)
- B) Lines 58-59 (“It was . . . settlement”)
- C) Lines 66-71 (“Virtually . . . continuum”)
- D) Lines 72-75 (“As . . . home”)

18

As used in line 68, “conducted” is closest in meaning to

- A) carried out.
- B) supervised.
- C) regulated.
- D) inhibited.

19

The author of the passage would most likely consider the information in chart 1 to be

- A) excellent evidence for the arguments made in the passage.
- B) possibly accurate but too crude to be truly informative.
- C) compelling but lacking in historical information.
- D) representative of a perspective with which the author disagrees.

20

According to chart 2, the years 2000–2010 were characterized by

- A) less growth in metropolitan areas of all sizes than had taken place in the 1990s.
- B) more growth in small metropolitan areas than in large metropolitan areas.
- C) a significant decline in the population of small metropolitan areas compared to the 1980s.
- D) roughly equal growth in large metropolitan areas and nonmetropolitan areas.

21

Chart 2 suggests which of the following about population change in the 1990s?

- A) Large numbers of people moved from suburban areas to urban areas in the 1990s.
- B) Growth rates fell in smaller metropolitan areas in the 1990s.
- C) Large numbers of people moved from metropolitan areas to nonmetropolitan areas in the 1990s.
- D) The US population as a whole grew more in the 1990s than in the 1980s.

Questions 22-32 are based on the following passages.

Passage 1 is adapted from Nicholas Carr, "Author Nicholas Carr: The Web Shatters Focus, Rewires Brains." ©2010 by Condé Nast. Passage 2 is from Steven Pinker, "Mind over Mass Media." ©2010 by The New York Times Company.

Passage 1

The mental consequences of our online info-crunching are not universally bad. Certain cognitive skills are strengthened by our use of computers and the Net. These tend to involve more primitive mental functions, such as hand-eye coordination, reflex response, and the processing of visual cues. One much-cited study of video gaming revealed that after just 10 days of playing action games on computers, a group of young people had significantly boosted the speed with which they could shift their visual focus between various images and tasks.

It's likely that Web browsing also strengthens brain functions related to fast-paced problem solving, particularly when it requires spotting patterns in a welter of data. A British study of the way women search for medical information online indicated that an experienced Internet user can, at least in some cases, assess the trustworthiness and probable value of a Web page in a matter of seconds. The more we practice surfing and scanning, the more adept our brain becomes at those tasks.

But it would be a serious mistake to look narrowly at such benefits and conclude that the Web is making us smarter. In a *Science* article published in early 2009, prominent developmental psychologist Patricia Greenfield reviewed more than 40 studies of the effects of various types of media on intelligence and learning ability. She concluded that "every medium develops some cognitive skills at the expense of others." Our growing use of the Net and other screen-based technologies, she wrote, has led to the "widespread and sophisticated development of visual-spatial skills." But those gains go hand in hand with a weakening of our capacity for the kind of "deep processing" that underpins "mindful knowledge acquisition, inductive analysis, critical thinking, imagination, and reflection."

We know that the human brain is highly plastic; neurons and synapses change as circumstances change. When we adapt to a new cultural phenomenon, including the use of a new

medium, we end up with a different brain, says Michael Merzenich, a pioneer of the field of neuroplasticity. That means our online habits continue to reverberate in the workings of our brain cells even when we're not at a computer. We're exercising the neural circuits devoted to skimming and multitasking while ignoring those used for reading and thinking deeply.

Passage 2

Critics of new media sometimes use science itself to press their case, citing research that shows how "experience can change the brain." But cognitive neuroscientists roll their eyes at such talk. Yes, every time we learn a fact or skill the wiring of the brain changes; it's not as if the information is stored in the pancreas. But the existence of neural plasticity does not mean the brain is a blob of clay pounded into shape by experience.

Experience does not revamp the basic information-processing capacities of the brain. Speed-reading programs have long claimed to do just that, but the verdict was rendered by Woody Allen after he read Leo Tolstoy's famously long novel *War and Peace* in one sitting: "It was about Russia." Genuine multitasking, too, has been exposed as a myth, not just by laboratory studies but by the familiar sight of an SUV undulating between lanes as the driver cuts deals on his cell phone.

Moreover, the effects of experience are highly specific to the experiences themselves. If you train people to do one thing (recognize shapes, solve math puzzles, find hidden words), they get better at doing that thing, but almost nothing else. Music doesn't make you better at math, conjugating Latin doesn't make you more logical, brain-training games don't make you smarter. Accomplished people don't bulk up their brains with intellectual calisthenics; they immerse themselves in their fields. Novelists read lots of novels, scientists read lots of science.

The effects of consuming electronic media are likely to be far more limited than the panic implies. Media critics write as if the brain takes on the qualities of whatever it consumes, the informational equivalent of "you are what you eat." As with ancient peoples who believed that eating fierce animals made them fierce, they assume that watching quick cuts in rock videos turns your mental life into quick cuts or that reading bullet points and online postings turns your thoughts into bullet points and online postings.

22

The author of Passage 1 indicates which of the following about the use of screen-based technologies?

- A) It should be thoroughly studied.
- B) It makes the brain increasingly rigid.
- C) It has some positive effects.
- D) It should be widely encouraged.

23

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

- A) Lines 3-4 (“Certain . . . Net”)
- B) Lines 23-25 (“But . . . smarter”)
- C) Lines 25-29 (“In a . . . ability”)
- D) Lines 29-31 (“She . . . others”)

24

The author of Passage 1 indicates that becoming adept at using the Internet can

- A) make people complacent about their health.
- B) undermine the ability to think deeply.
- C) increase people’s social contacts.
- D) improve people’s self-confidence.

25

As used in line 40, “plastic” most nearly means

- A) creative.
- B) artificial.
- C) malleable.
- D) sculptural.

26

The author of Passage 2 refers to the novel *War and Peace* primarily to suggest that Woody Allen

- A) did not like Tolstoy’s writing style.
- B) could not comprehend the novel by speed-reading it.
- C) had become quite skilled at multitasking.
- D) regretted having read such a long novel.

27

According to the author of Passage 2, what do novelists and scientists have in common?

- A) They take risks when they pursue knowledge.
- B) They are eager to improve their minds.
- C) They are curious about other subjects.
- D) They become absorbed in their own fields.

28

The analogy in the final sentence of Passage 2 has primarily which effect?

- A) It uses ornate language to illustrate a difficult concept.
- B) It employs humor to soften a severe opinion of human behavior.
- C) It alludes to the past to evoke a nostalgic response.
- D) It criticizes the view of a particular group.

29

The main purpose of each passage is to

- A) compare brain function in those who play games on the Internet and those who browse on it.
- B) report on the problem-solving skills of individuals with varying levels of Internet experience.
- C) take a position on increasing financial support for studies related to technology and intelligence.
- D) make an argument about the effects of electronic media use on the brain.

30

Which choice best describes the relationship between the two passages?

- A) Passage 2 relates first-hand experiences that contrast with the clinical approach in Passage 1.
- B) Passage 2 critiques the conclusions drawn from the research discussed in Passage 1.
- C) Passage 2 takes a high-level view of a result that Passage 1 examines in depth.
- D) Passage 2 predicts the negative reactions that the findings discussed in Passage 1 might produce.

31

On which of the following points would the authors of both passages most likely agree?

- A) Computer-savvy children tend to demonstrate better hand-eye coordination than do their parents.
- B) Those who criticize consumers of electronic media tend to overreact in their criticism.
- C) Improved visual-spatial skills do not generalize to improved skills in other areas.
- D) Internet users are unlikely to prefer reading onscreen text to reading actual books.

32

Which choice provides the best evidence that the author of Passage 2 would agree to some extent with the claim attributed to Michael Merzenich in lines 41-43, Passage 1?

- A) Lines 51-53 (“Critics . . . brain”)
- B) Lines 54-56 (“Yes . . . changes”)
- C) Lines 57-59 (“But . . . experience”)
- D) Lines 83-84 (“Media . . . consumes”)

Questions 33-42 are based on the following passage.

This passage is adapted from Elizabeth Cady Stanton's address to the 1869 Woman Suffrage Convention in Washington, DC.

I urge a sixteenth amendment, because "manhood suffrage," or a man's government, is civil, religious, and social disorganization. The male element is a destructive force, stern, selfish, aggrandizing, loving war, violence, conquest, acquisition, breeding in the material and moral world alike discord, disorder, disease, and death. See what a record of blood and cruelty the pages of history reveal! Through what slavery, slaughter, and sacrifice, through what inquisitions and imprisonments, pains and persecutions, black codes and gloomy creeds, the soul of humanity has struggled for the centuries, while mercy has veiled her face and all hearts have been dead alike to love and hope!

The male element has held high carnival thus far; it has fairly run riot from the beginning, overpowering the feminine element everywhere, crushing out all the diviner qualities in human nature, until we know but little of true manhood and womanhood, of the latter comparatively nothing, for it has scarce been recognized as a power until within the last century. Society is but the reflection of man himself, untempered by woman's thought; the hard iron rule we feel alike in the church, the state, and the home. No one need wonder at the disorganization, at the fragmentary condition of everything, when we remember that man, who represents but half a complete being, with but half an idea on every subject, has undertaken the absolute control of all sublunary matters.

People object to the demands of those whom they choose to call the strong-minded, because they say "the right of suffrage will make the women masculine." That is just the difficulty in which we are involved today. Though disfranchised, we have few women in the best sense; we have simply so many reflections, varieties, and dilutions of the masculine gender. The strong, natural characteristics of womanhood are repressed and ignored in

dependence, for so long as man feeds woman she will try to please the giver and adapt herself to his condition. To keep a foothold in society, woman must be as near like man as possible, reflect his ideas, opinions, virtues, motives, prejudices, and vices. She must respect his statutes, though they strip her of every inalienable right, and conflict with that higher law written by the finger of God on her own soul. . . . [M]an has been molding woman to his ideas by direct and positive influences, while she, if not a negation, has used indirect means to control him, and in most cases developed the very characteristics both in him and herself that needed repression. And now man himself stands appalled at the results of his own excesses, and mourns in bitterness that falsehood, selfishness, and violence are the law of life. The need of this hour is not territory, gold mines, railroads, or specie payments but a new evangel of womanhood, to exalt purity, virtue, morality, true religion, to lift man up into the higher realms of thought and action.

We ask woman's enfranchisement, as the first step toward the recognition of that essential element in government that can only secure the health, strength, and prosperity of the nation. Whatever is done to lift woman to her true position will help to usher in a new day of peace and perfection for the race.

In speaking of the masculine element, I do not wish to be understood to say that all men are hard, selfish, and brutal, for many of the most beautiful spirits the world has known have been clothed with manhood; but I refer to those characteristics, though often marked in woman, that distinguish what is called the stronger sex. For example, the love of acquisition and conquest, the very pioneers of civilization, when expended on the earth, the sea, the elements, the riches and forces of nature, are powers of destruction when used to subjugate one man to another or to sacrifice nations to ambition.

Here that great conservator of woman's love, if permitted to assert itself, as it naturally would in freedom against oppression, violence, and war, would hold all these destructive forces in check, for woman knows the cost of life better than man does, and not with her consent would one drop of blood ever be shed, one life sacrificed in vain.

33

The central problem that Stanton describes in the passage is that women have been

- A) denied equal educational opportunities, which has kept them from reaching their potential.
- B) prevented from exerting their positive influence on men, which has led to societal breakdown.
- C) prevented from voting, which has resulted in poor candidates winning important elections.
- D) blocked by men from serving as legislators, which has allowed the creation of unjust laws.

34

Stanton uses the phrase “high carnival” (line 15) mainly to emphasize what she sees as the

- A) utter domination of women by men.
- B) freewheeling spirit of the age.
- C) scandalous decline in moral values.
- D) growing power of women in society.

35

Stanton claims that which of the following was a relatively recent historical development?

- A) The control of society by men
- B) The spread of war and injustice
- C) The domination of domestic life by men
- D) The acknowledgment of women’s true character

36

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

- A) Lines 3-7 (“The male . . . death”)
- B) Lines 15-22 (“The male . . . century”)
- C) Lines 22-25 (“Society . . . home”)
- D) Lines 48-52 (“[M]an . . . repression”)

37

As used in line 24, “rule” most nearly refers to

- A) a general guideline.
- B) a controlling force.
- C) an established habit.
- D) a procedural method.

38

It can reasonably be inferred that “the strong-minded” (line 32) was a term generally intended to

- A) praise women who fight for their long-denied rights.
- B) identify women who demonstrate intellectual skill.
- C) criticize women who enter male-dominated professions.
- D) condemn women who agitate for the vote for their sex.

39

As used in line 36, “best” most nearly means

- A) superior.
- B) excellent.
- C) genuine.
- D) rarest.

40

Stanton contends that the situation she describes in the passage has become so dire that even men have begun to

- A) lament the problems they have created.
- B) join the call for woman suffrage.
- C) consider women their social equals.
- D) ask women how to improve civic life.

41

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

- A) Lines 25-30 (“No one . . . matters”)
- B) Lines 53-55 (“And now . . . life”)
- C) Lines 56-60 (“The need . . . action”)
- D) Lines 61-64 (“We ask . . . nation”)

42

The sixth paragraph (lines 67-78) is primarily concerned with establishing a contrast between

- A) men and women.
- B) the spiritual world and the material world.
- C) bad men and good men.
- D) men and masculine traits.

Questions 43-53 are based on the following passage and supplementary material.

This passage is adapted from Carolyn Gramling, "Source of Mysterious Medieval Eruption Identified." ©2013 by American Association for the Advancement of Science.

About 750 years ago, a powerful volcano erupted somewhere on Earth, kicking off a centuries-long cold snap known as the Little Ice Age. Identifying the volcano responsible has been tricky.

Line 5 That a powerful volcano erupted somewhere in the world, sometime in the Middle Ages, is written in polar ice cores in the form of layers of sulfate deposits and tiny shards of volcanic glass. These cores suggest that the amount of sulfur the mystery volcano sent into the stratosphere put it firmly
10 among the ranks of the strongest climate-perturbing eruptions of the current geological epoch, the Holocene, a period that stretches from 10,000 years ago to the present. A haze of stratospheric sulfur
15 cools the climate by reflecting solar energy back into space.

In 2012, a team of scientists led by geochemist Gifford Miller strengthened the link between the mystery eruption and the onset of the Little Ice Age
20 by using radiocarbon dating of dead plant material from beneath the ice caps on Baffin Island and Iceland, as well as ice and sediment core data, to determine that the cold summers and ice growth began abruptly between 1275 and 1300 C.E. (and
25 became intensified between 1430 and 1455 C.E.). Such a sudden onset pointed to a huge volcanic eruption injecting sulfur into the stratosphere and starting the cooling. Subsequent, unusually large and frequent eruptions of other volcanoes, as well as
30 sea-ice/ocean feedbacks persisting long after the aerosols have been removed from the atmosphere, may have prolonged the cooling through the 1700s.

Volcanologist Franck Lavigne and colleagues now think they've identified the volcano in question:
35 Indonesia's Samalas. One line of evidence, they note, is historical records. According to Babad Lombok, records of the island written on palm leaves in Old Javanese, Samalas erupted catastrophically before the end of the 13th century, devastating surrounding
40 villages—including Lombok's capital at the time, Pamatatan—with ash and fast-moving sweeps of hot rock and gas called pyroclastic flows.

The researchers then began to reconstruct the formation of the large, 800-meter-deep caldera [a
45 basin-shaped volcanic crater] that now sits atop the

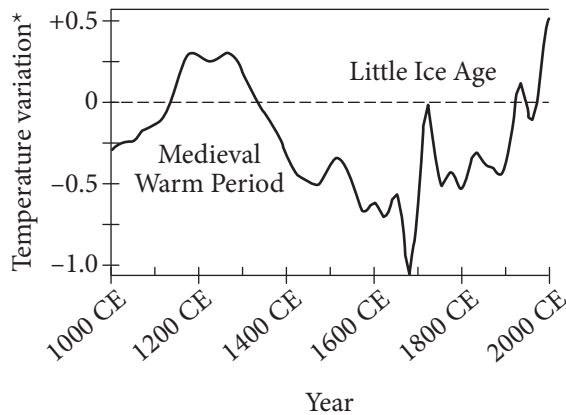
volcano. They examined 130 outcrops on the flanks of the volcano, exposing sequences of pumice—ash hardened into rock—and other pyroclastic material. The volume of ash deposited, and the estimated
50 height of the eruption plume (43 kilometers above sea level) put the eruption's magnitude at a minimum of 7 on the volcanic explosivity index (which has a scale of 1 to 8)—making it one of the largest known in the Holocene.

55 The team also performed radiocarbon analyses on carbonized tree trunks and branches buried within the pyroclastic deposits to confirm the date of the eruption; it could not, they concluded, have happened before 1257 C.E., and certainly happened
60 in the 13th century.

It's not a total surprise that an Indonesian volcano might be the source of the eruption, Miller says. "An equatorial eruption is more consistent with the apparent climate impacts." And, he adds, with sulfate
65 appearing in both polar ice caps—Arctic and Antarctic—there is "a strong consensus" that this also supports an equatorial source.

Another possible candidate—both in terms of timing and geographical location—is Ecuador's
70 Quilotoa, estimated to have last erupted between 1147 and 1320 C.E. But when Lavigne's team examined shards of volcanic glass from this volcano, they found that they didn't match the chemical composition of the glass found in polar ice cores,
75 whereas the Samalas glass is a much closer match. That, they suggest, further strengthens the case that Samalas was responsible for the medieval "year without summer" in 1258 C.E.

Estimated Temperature in Central England
1000 CE to 2000 CE



*Variation from the 1961-1990 average temperature, in °C, represented at 0.

Adapted from John P. Rafferty, "Little Ice Age." Originally published in 2011. ©2014 by Encyclopedia Britannica, Inc.

43

The main purpose of the passage is to

- A) describe periods in Earth's recent geologic history.
- B) explain the methods scientists use in radiocarbon analysis.
- C) describe evidence linking the volcano Samalas to the Little Ice Age.
- D) explain how volcanic glass forms during volcanic eruptions.

44

Over the course of the passage, the focus shifts from

- A) a criticism of a scientific model to a new theory.
- B) a description of a recorded event to its likely cause.
- C) the use of ice core samples to a new method of measuring sulfates.
- D) the use of radiocarbon dating to an examination of volcanic glass.

45

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

- A) Lines 17-25 ("In 2012 . . . 1455 C.E.")
- B) Lines 43-46 ("The researchers . . . atop the volcano")
- C) Lines 46-48 ("They examined . . . material")
- D) Lines 55-60 ("The team . . . 13th century")

46

The author uses the phrase "is written in" (line 6) most likely to

- A) demonstrate the concept of the hands-on nature of the work done by scientists.
- B) highlight the fact that scientists often write about their discoveries.
- C) underscore the sense of importance that scientists have regarding their work.
- D) reinforce the idea that the evidence is there and can be interpreted by scientists.

47

Where does the author indicate the medieval volcanic eruption most probably was located?

- A) Near the equator, in Indonesia
- B) In the Arctic region
- C) In the Antarctic region
- D) Near the equator, in Ecuador

48

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

- A) Lines 1-3 ("About 750 . . . Ice Age")
- B) Lines 26-28 ("Such a . . . the cooling")
- C) Lines 49-54 ("The volume . . . the Holocene")
- D) Lines 61-64 ("It's not . . . climate impacts")

49

As used in line 68, the phrase “Another possible candidate” implies that

- A) powerful volcanic eruptions occur frequently.
- B) the effects of volcanic eruptions can last for centuries.
- C) scientists know of other volcanoes that erupted during the Middle Ages.
- D) other volcanoes have calderas that are very large.

50

Which choice best supports the claim that Quilotoa was not responsible for the Little Ice Age?

- A) Lines 3-4 (“Identifying . . . tricky”)
- B) Lines 26-28 (“Such a . . . cooling”)
- C) Lines 43-46 (“The researchers . . . atop the volcano”)
- D) Lines 71-75 (“But . . . closer match”)

51

According to the data in the figure, the greatest below-average temperature variation occurred around what year?

- A) 1200 CE
- B) 1375 CE
- C) 1675 CE
- D) 1750 CE

52

The passage and the figure are in agreement that the onset of the Little Ice Age began

- A) around 1150 CE.
- B) just before 1300 CE.
- C) just before 1500 CE.
- D) around 1650 CE.

53

What statement is best supported by the data presented in the figure?

- A) The greatest cooling during the Little Ice Age occurred hundreds of years after the temperature peaks of the Medieval Warm Period.
- B) The sharp decline in temperature supports the hypothesis of an equatorial volcanic eruption in the Middle Ages.
- C) Pyroclastic flows from volcanic eruptions continued for hundreds of years after the eruptions had ended.
- D) Radiocarbon analysis is the best tool scientists have to determine the temperature variations after volcanic eruptions.