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 Nina Revoyr, *The Age of Dreaming*. ©2008 by Nina Revoyr. The narrator describes acting in silent films in the early 1900s. Moran owns the production company that employs the narrator.

It is amusing, in retrospect, to think how primitive our efforts were in those early years. For my first two films, all of the interiors were shot on outdoor sets, with canvases draped over them to soften the sun. All copies of *Jamestown Junction* have long been lost, but if the film had survived, and if you could see it, you would notice that during the office scene the papers on my desk are disturbed by a mysterious breeze. And in the very next scene, you would see a shadow moving in the corner, caused by the canvas flapping in the wind. These were the conditions in which we shot at that time, and because we worked without the benefit of artificial light, there was always a rush to complete the day's filming before the shadows grew too deep in the afternoon. In late May, when we endured an unexpected heat wave, Moran had giant ice blocks delivered to the sets, and powerful fans placed behind them to blow the cool air in the direction or the players. If it rained, filming would halt altogether, and we would scramble to move all the furniture and props under the complex's few permanent roofs. But despite these challenges, everyone remained in good spirits. We were working, yes, but it felt like play, and it was hard to comprehend the tremendous good fortune that had suddenly befallen me.

Through the making of both films, Hanako gave me constant guidance, which I eagerly accepted. And I immediately discerned the difference between myself, an untrained amateur, and a seasoned professional who knew everything about the art of acting. Indeed, she was perhaps the largest influence on my development as an actor.

"There is no audience to see you," she said one day in Japanese, as I gestured expansively to convey my anguish at the death of one of my fellow soldiers. "You don't need to project like you would in the theater, as if you're trying to be seen by the person in the last row. Pretend the camera is the one man you're playing to."

On another occasion when I was perhaps *too* understated, Hanako approached me after Moran called "cut." "You're painting a picture with your body," she said. "Think of pantomime. You must express physically what you can't with your voice. And use your face, your eyes. You have such eyes. They alone speak volumes."

Moran nodded in agreement, although he couldn't have understood, and I adjusted my actions accordingly. I was surprised by the extent to which he let Hanako direct things—not only my own performance, but also the placement of props, even the movements of the other actors. Yet all of her suggestions improved the films. And between her advice and Moran's direction, I was slowly learning what to do. The transition from theater, which depends on dialogue, was more difficult than I had imagined—indeed, many stage actors, even those who didn't disdain the new medium or moving

CONTINUE

pictures, did not make the change successfully. Hanako Minatoya was one of the few who was equally accomplished in both realms. I was learning under her tutelage every day.

On certain days, when we weren't in scenes, Hanako and I would leave the sets and walk into the hills. They were vibrant with color, with flowers wherever one looked—blue brodiaea and lupin, Mariposa lilacs, the wispy orange California poppies. The beauty of that landscape, when the air was cool, the sun glinting off the ocean, and the breeze carrying the scent of the flowers, was so dramatic I could hardly believe it real. And I was seeing it, feeling it, in the company of an artist whose work I had admired for years.

One day on our walk we were discussing a well-known actor, and Hanako surprised me by her reaction to his name. "He is nothing but a face for the fan magazines," she said dismissively. "He is not a genuine actor."

"What do you mean?" I asked, although I didn't disagree.

"It is impossible to distinguish one of his roles from another. He is always the same, and it is obvious why. In order to project a believable fiction, the actor himself must have substance. You must possess something *internally* to perform it externally. He has only a fraction of the talent of an artist such as you."

I was, of course, deeply flattered by her compliment, and I did not know how to respond. Hanako continued talking of this actor and that, without noting my reaction.

1

As used in line 2, "primitive" most nearly means

A) basic.
B) ancient.
C) original.
D) natural.

2

The narrator references *Jamestown Junction* (line 5) primarily in order to

A) highlight a film that features acting that the narrator aims to emulate.
B) provide context for the tensions that later surface between the narrator and others on the set.
C) contrast the responsibilities of the director and the actors in film production.
D) showcase the challenges posed by filming in an outdoor setting.

3

The passage is written from the perspective of someone who

A) realizes he cannot meet the challenges of pivoting to a new career.
B) regrets not making more of an effort to achieve his professional goals.
C) is enthusiastic about recent technological developments affecting his profession.
D) is nostalgic about experiences toward the beginning of his career.

4

It can most reasonably be inferred from the passage that, as a young man, the narrator attributed his employment in films to

A) his wide range of acting skills.
B) the fan base he acquired as a stage actor.
C) a lucky happenstance.
D) his friendship with Hanako.

CONTINUE

5

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

A) Lines 11-15 ("These . . . afternoon")
B) Lines 24-26 ("We were . . . befallen me")
C) Lines 27-28 ("Through . . . accepted")
D) Lines 29-32 ("And I . . . acting")

6

As used in line 35, "convey" most nearly means

A) communicate.
B) conduct.
C) guide.
D) experience.

7

Based on the passage, in what way does Hanako most directly influence the narrator's development?

A) She praises his skill as an actor to boost his confidence.
B) She advises him on balancing popularity with artistic integrity.
C) She shares lessons learned from having made the same career shift that he is making.
D) She convinces Moran to allow the narrator to take on more prominent roles in his films.

8

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

A) Lines 53-56 ("Yet . . . to do")
B) Lines 61-63 ("Hanako . . . day")
C) Lines 64-66 ("On certain . . . hills")
D) Lines 89-90 ("I was . . . respond")

9

The passage indicates that when Hanako criticizes a well-known actor, the narrator

A) fears that Hanako will address him with the same criticism but is relieved when she praises him instead.
B) concurs with Hanako's opinion of the actor but is curious about the reasoning behind her criticism.
C) is disappointed that Hanako does not respect the actor but continues to admire the actor himself.
D) understands Hanako's argument but respectfully disagrees with her characterization of the actor.

10

It can most reasonably be inferred from the passage that Hanako believes that an actor's merit depends on the

A) caliber of training that the actor receives from mentors.
B) depth of the actor's own feelings and perceptions.
C) actor's willingness to take on roles that others find unappealing.
D) actor's ability to overlook unfavorable audience reactions.

CONTINUE

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

This passage is adapted from Giorgia Guglielmi, "Small News Outlets Influence Us More Than We Think." ©2017 by American Association for the Advancement of Science.

Assessing the influence of news media is tricky. Researchers can't peer into voting booths or people's living rooms, and news organizations aren't typically willing to have outsiders interfere with their content. That's why it took a team of social scientists 5 years to get 48 U.S. news organizations to agree to run an unusual set of experiments. Instead of simply tracking what the outlets were publishing and analyzing their impact on public opinion, the researchers took an approach similar to that used in clinical trials to evaluate the effects of new drugs. They manipulated the type of news stories run, and then assigned a "treatment" week when the stories would run and a "control" week when they wouldn't. This way they could tell whether those particular stories were having any effect on public discussion.

Most participating outlets were small, with fewer than an estimated 200,000 pageviews per month, and a few were midsized, like the Wisconsin-based magazine *The Progressive*, which had more than 250,000 pageviews per month. The nonprofit news organization Truthout, based in Chicago, Illinois, represented a large outlet, with an estimated 2 million pageviews per month.

The researchers, led by Gary King of Harvard University, asked groups of two to five of these news outlets to write stories on broad policy areas, including race, immigration, and climate. For example, if the broad area was technology policy, the specific story might be what Uber drivers think about self-driving cars. The outlets could choose the policy area, the stories to cover, and the type of articles to write, such as investigative reports or opinion pieces. However, the researchers could reject a story if it was outside a specific policy area. (The outlets were free to publish whatever story they wanted outside of the experiment.)

Then, the researchers flipped a coin to decide during which of two consecutive weeks these clusters of stories, all on the same topic, would run. Finally, they measured the number of tweets about both the specific stories and the broader policy issues during the week when the stories ran compared to the week when they didn't.

Twitter posts on these topics increased by nearly 63% over the week in which the stories were posted. On average, Americans wrote more than 13,000 additional social media posts about a specific policy area on the day the stories ran and in the following 5 days. What's more, the cluster of stories swayed people's opinion by 2.3% in the ideological direction of opinion articles, suggesting that news media might in some cases change people's beliefs.

The team repeated the experiment 35 times, and observed that stories boosted posting by men and women alike, as well as by people living in different U.S. regions, with different political orientations and influence on Twitter. Removing larger outlets from the analysis didn't change the effect on public conversation much, suggesting that no single large news organization was responsible for the increase.

However, if the researchers had recruited large mainstream outlets, the spike in discussion might have been much bigger: When they looked at stories published by *The New York Times* on little-discussed topics, such as how fracking affects the quality of drinking water, they found that Twitter posts about the broader issue of water quality increased by 300% in just 1 day.

Though excited by the study, economist Matthew Gentzkow points out that only about 20% of Americans use Twitter, so the results might not be widely applicable outside social media. But to King, Twitter users are a valuable resource to assess the agenda-setting power of media because they represent those people who are willing to speak up to influence policy.

Figure 1

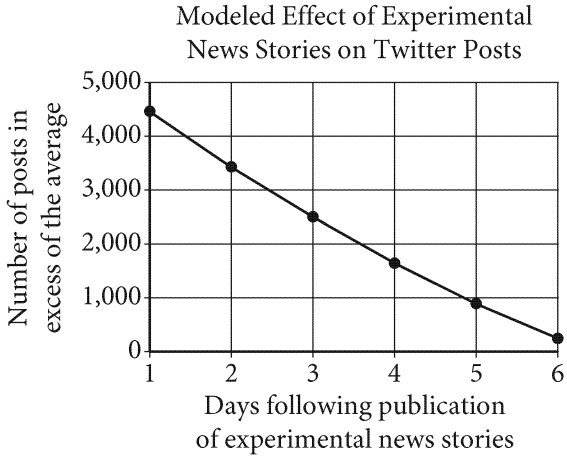

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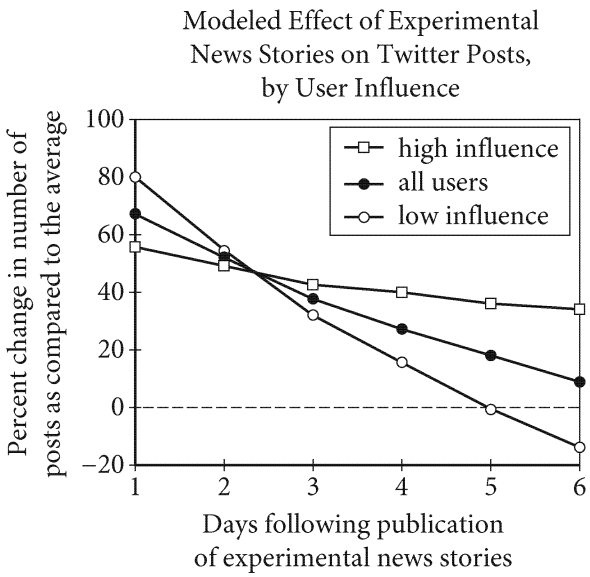
Figure 2



Figures adapted from Gary King, Benjamin Schneer, and Ariel White, "How the News Media Activate Public Expression and Influence National Agendas." ©2017 by Gary King, Benjamin Schneer, and Ariel White.

11

The main purpose of the passage is to

A) summarize an open question with respect to social media and propose a study to examine the question in greater depth.

B) introduce a common misunderstanding about mainstream media outlets and describe a study that challenges that misunderstanding.

C) outline a study that compares trends in social media use among different demographic groups and suggest an explanation for the results of that study.

D) describe a study's novel way of assessing the impact of news media on public opinion and report the findings of that study.

12

As used in line 4, "interfere with" most nearly means

A) oppose.

B) prevent.

C) modify.

D) suspend.

13

Which choice best supports the idea that the researchers needed a mechanism to determine whether changes in public opinion were the result of the experimental stories and not some other factor?

A) Lines 1-4 ("Assessing . . . content")

B) Lines 5-7 ("That's . . . experiments")

C) Lines 7-11 ("Instead . . . drugs")

D) Lines 12-16 ("They . . . discussion")

14

According to the passage, the opinion articles used in the study had what impact on the opinions of Twitter users?

A) Twitter users' opinions changed to be increasingly negative toward a specific policy area over the five-day period following the articles' publication.

B) Twitter users' opinions changed somewhat toward favoring the articles' position on the policy area.

C) Twitter users' opinions showed no measurable change throughout the two-week experiment.

D) Twitter users' opinions changed only in response to stories on policy areas that already interested them.

CONTINUE

15

As used in line 55, "boosted" most nearly means

A) advanced.
B) raised.
C) supported.
D) improved.

16

It can reasonably be inferred from the passage that the design of King's team's experiment made it less likely that

A) Twitter users would read more stories from participating news media outlets than they usually did.
B) news media outlets would be able to choose which stories to publish outside of treatment weeks.
C) Twitter users would realize that there was something unusual about the media outlets' publication output.
D) news media outlets would run stories on any particular topic for more than one week.

17

The passage most strongly suggests that which additional study would best help to determine more precisely the extent to which news media outlets shape public opinion in the United States?

A) A study that examines how influential news media outlets are to people who do not participate in social media
B) A study that determines whether users on different social media platforms get news from different media outlets
C) A study that captures the most common age range of people who use social media to comment on current events
D) A study that assesses whether people who participate in social media are more likely to become involved in changing US policy

18

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

A) Lines 54-58 ("The team . . . Twitter")
B) Lines 62-64 ("However . . . bigger")
C) Lines 70-73 ("Though . . . media")
D) Lines 73-77 ("But to . . . policy")

19

According to the model in figure 1, the number of Twitter posts on the relevant topics in excess of the average

A) increased from day one to day two following the experimental news stories' publication.
B) was approximately zero by day three following the experimental news stories' publication.
C) was greater than zero for two weeks following the experimental news stories' publication.
D) decreased throughout days one through six following the experimental news stories' publication.

20

Which statement best reflects the model in figure 2?

A) On day one following publication of the experimental news stories, Twitter users with high influence showed a lower percent change in their number of posts on the relevant topic than did those with low influence.
B) On day four following publication of the experimental news stories, Twitter users with low influence had about the same percent change in their number of posts on the relevant topic as all Twitter users.
C) On day five following publication of the experimental news stories, Twitter users with high influence posted about as frequently on the relevant topic as they usually did.
D) On day six following publication of the experimental news stories, all Twitter users posted on the relevant topic less frequently than they usually did.

CONTINUE

Questions 21-31 are based on the following passage and supplementary material.

This passage is adapted from Clint Perry and Olli Loukola, "We Taught Bees to Play Football So We Could Learn about Their Brains." ©2017 by The Conversation US, Inc.

Most people don't often think about bees' brainpower. Bees are generally regarded as tiny unthinking machines, flying from flower to flower, genetically pre-programmed to collect pollen and nectar and make honey.

But bees have some impressive cognitive capacities. Bumblebees and honeybees can count, navigate complex environments, learn concepts, use their uncertainty to guide their decisions, and even display emotion-like behaviour.

Recently, bees have also been trained to solve complex cognitive tasks such as string pulling and cap pushing to gain rewards. But as impressive as these tasks might be, they resemble some of the bees' natural foraging behaviour. Our research group wanted to test the behavioural limits of bumblebees by tasking them with something far removed from anything they encounter in nature.

So we've managed to show that bees can play football. Sort of. We showed that they can learn to move a small ball to a goal to gain a sugary reward.

To do this, we used a plastic model bee on the end of a transparent stick to move a tiny ball across a platform as a real bumblebee watched. When the ball reached a specified location at the centre of the platform, it opened access to rewarding sugar water. After several observations, each real bee we tested picked up how to solve the task and no longer needed demonstrations.

While mastering this unnatural task was impressive, we were curious to know how the bees were actually learning to solve it. So we tested three further groups of bees. One group of bees watched another previously trained bee move the ball to the centre. A second group of bees observed the ball moving to the centre "by itself" (we actually used a magnet under the platform to move the ball). And a third group of bees did not receive any demonstration.

The movement of the ball with the magnet was enough for some of the bees to learn the task significantly better than the bees who did not receive any demonstration. But all ten bees observing another bee move the ball to the centre solved the task much quicker and at a higher success rate than either of the other groups. This suggests the observer bees picked up something important from their fellow bees that helped them learn this unnatural task.

The design of this experiment also allowed us to ask a novel question in social learning experiments: when learning from others, will bees simply copy what they see or can they improve upon it? During each of the observation trials, there were three balls positioned at varying distances from the centre of the platform, but it was always the furthest ball that was moved during the demonstration. But during the test trials, on their own, the observer bees almost always moved the closest ball to the centre. This suggests bees weren't simply copying what they saw during the demonstration but actually improved on the task by using the easiest means.

Our current findings suggest with convincing evidence that a miniature brain is not necessarily simple, and can solve an impressively complex task. In fact, we are not yet aware of a cognitive ability that is specific to large brains. What's more, neurobiology and modelling research suggests that a very limited number of neurons (even just a few) can accomplish some rather complex cognitive tasks.

We have shown that bumblebees can solve a task they've unlikely ever seen in their evolutionary history. No flower has likely ever required bees to move an object into its centre to gain access to nectar. The fact that bees learned this unnatural and complex task through observation alone and could improve on what they saw, rather than simply copy what they observed, shows an unprecedented amount of cognitive flexibility in an animal with such a small brain.

CONTINUE

Figure 1

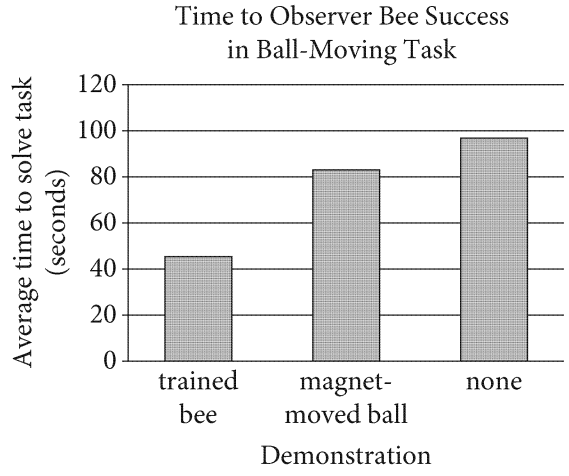
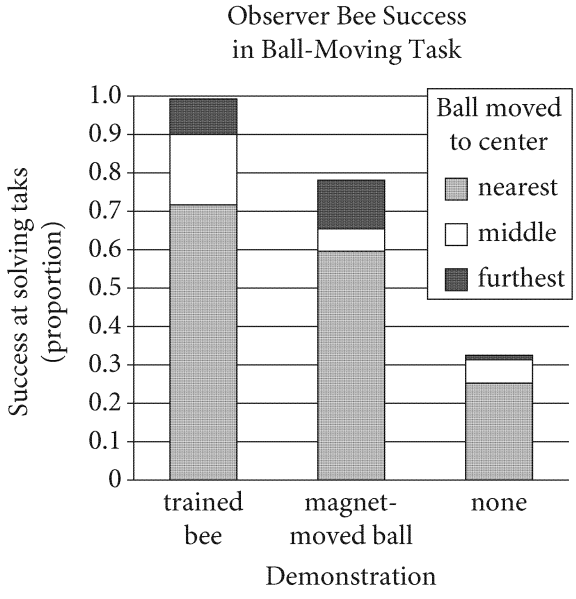


Figure 2



Figures adapted from Olli J. Loukola et al., "Bumblebees Show Cognitive Flexibility by Improving on an Observed Complex Behavior." ©2017 by American Association for the Advancement of Science.

21

The main idea of the passage is that bees

A) learn by mimicking demonstrated behavior.

B) have greater cognitive flexibility than most other insects.

C) can master simple tasks and then demonstrate them for other bees.

D) can learn unfamiliar tasks and then execute them efficiently.

22

Which choice best describes the overall structure of the passage?

A) An experiment to test an existing hypothesis about bees is presented, that hypothesis is revised based on the experiment's results, and a new study is proposed.

B) An experiment that produces unexpected data about bees is introduced, the source of the data is traced to faulty research design, and a redesigned study is described.

C) A generalization about bees is mentioned, information challenging that generalization is noted, and an experiment that deepens understanding of bees is presented.

D) A criticism about the lack of research on bees is voiced, a new experiment is proposed in response to that criticism, and a hypothesis for that new experiment is discussed.

23

According to the passage, one reason that bees may have mastered tasks such as string pulling is that the

A) bees are exceptionally responsive to sugary rewards.

B) bees are quick to copy trained bees in performing such tasks.

C) behaviors stimulate highly developed part of the bees' brains.

D) motions are similar to behaviors the bees perform in natural settings.

CONTINUE

24

It can most reasonably be inferred from the passage that some of the bees participating in the initial training activity

A) were unable to solve the task after a single demonstration.

B) were transfixed by the appearance of the plastic model bee.

C) could access the sugar water without moving the ball.

D) had no prior experience with goal-oriented tasks.

25

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

A) Lines 19-21 ("So we've . . . reward")

B) Lines 22-24 ("To do . . . watched")

C) Lines 24-26 ("When . . . water")

D) Lines 27-29 ("After . . . demonstrations")

26

Based on the results of the ball-moving tasks, the authors would most likely agree with which statement?

A) Bees learn to master new tasks through the process of trial and error.

B) Bees develop complex behaviors by learning them in incremental steps.

C) Bees learn effectively by observing the behaviors of other bees.

D) Bees imitate the actions of other bees and learn by repeating their movements.

27

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

A) Lines 40-43 ("The movement . . . demonstration")

B) Lines 46-49 ("This . . . task")

C) Lines 50-53 ("The design . . . upon it")

D) Lines 59-62 ("This . . . means")

28

As used in line 62, "means" most nearly means

A) instrument.

B) approach.

C) design.

D) results.

29

Which statement about the bees' success in the ball-moving task is best supported by the data in figure 1?

A) Observer bees benefited from seeing a demonstration of the ball-moving task before attempting to solve the same task.

B) Bees that received no demonstration of the ball-moving task required assistance when attempting to solve the task on their own.

C) Observer bees that saw the demonstration of the magnet-moved ball solved the task as quickly as did bees that received no demonstration.

D) Bees that saw the demonstration with the trained bee were the only bees that succeeded at the ball-moving task.

CONTINUE

30

According to figure 2, which combination of demonstration type and the ball's distance from the center of the platform yielded the least success in solving the task?

A) Trained bee demonstration; furthest ball
B) Magnet-moved demonstration; middle ball
C) No demonstration; nearest ball
D) No demonstration; furthest ball

31

As used in line 69, "limited" most nearly means

A) reduced.
B) small.
C) restricted.
D) exclusive.

CONTINUE

Questions 32-42 are based on the following passage.

This passage is adapted from a speech delivered in 1841 by Thomas Paul to the Massachusetts Anti-Slavery Society, "Let Us Do Justice to an Unfortunate People." Paul, a black abolitionist, worked with white abolitionist leader William Lloyd Garrison, who founded the American Anti-Slavery Society in 1833.

I have often asked myself, what posterity would think of the strange contest in which the abolitionists are engaged. Here we meet, time after time, newspapers are printed and speeches delivered, to prove—what? Why, that a man is a man, and that he is the only human possessor of himself. But these propositions are self-evident propositions, and self-evident propositions we all know, though the most difficult to be proved, are the most easily understood, because they need no proof. The mind sees their truth intuitively, without the aid of reasoning. The attempt to prove them, therefore, would be ridiculous, were it not for the consideration of the amazing state of delusion and vassalage to which prejudice reduces the mind when unenlightened by reason.

The history of every age shows the truth of this assertion. At one time, we see Galileo thrown into prison by the Inquisition, because he had made some discoveries . . . and forced to purchase his liberty by retracting his opinions. . . . When, therefore, we see the control which prejudice, aided by circumstances and encouraged by self, interest, has in times past exercised over the human mind, and the tenacity with which it has held its deluded victims, stopping up the avenues of improvement, clipping the wings of genius, and retarding the progress of truth—when we see the minds whose energies have been crippled, and whose spheres of action have been curtailed by its influence—when we see the tremendous power which reformers have brought to bear against the prevailing sins of the ages in which they lived, the firm opposition they encountered, and the long and arduous struggles which preceded a better state of things—we are led, by analogical reasoning, to believe, that the contest in which we are engaged is not an unnatural one—that it is not so dissimilar in its character and measures to others which have been carried triumphantly through—that the modern champions of freedom do not savor so much of quixotism [impracticality] as their traducers have represented—and that the unfortunate men, whose cause they have espoused, have as just a claim to humanity as their oppressors, and like them have been created a little lower than the angels. . . .

How was it five years ago in regard to the question of slavery! A gloom hung over the moral atmosphere, which nothing seemingly could dissipate, save a miracle from God himself. All saw it, but no one durst expose his own breast to the pitiless peltings of the gathering storm. The pulpit and the press, instead of being faithful to their trust, were the panders to the general lust. But mind, like matter, must have its legitimate scope. . . . There are always some spirits who will resist such unnatural domination. And such a spirit was found in the father of American anti-slavery. In that dark hour, he arose to cheer us on our gloomy pathway. The shafts of criticism, and sarcasm, and denunciation, which rang against his buckler [shield], told only where he stood up unscathed, in his moral and intellectual might, and bearing down all opposition. The result is well known, nor does Mr. Garrison need any eulogy from me.

The task of a reformer is far from being an agreeable one. The hidden springs which are to be touched by him, and set into motion, are not discernible to common eyes; and, if they were, few would know how to approach or dare to meddle with them. He scatters his truths among the body politic, and the effect is electrical. He is greeted at once with smiles and frowns, with blessing and cursing, with eulogy and abuse. Now he is almost stifled with the caresses of devoted friends, and anon he is exposed to the fury of a blood-thirsty mob. But, if it is melancholy to see some run mad, we have the gratification to behold others restored to their reason. Much may depend upon accidental circumstances for the success of the reformer, but more depends upon himself. In him are found the great qualities of the head and heart. For the burden of proof is upon him, and he is to answer cavils [petty objections], refute sophistry [falsehood], and prove his propositions, while slanderers are crucifying his reputation, and assassins are aiming deadly daggers at his heart. All moral reformations have been attended with more or less persecution; but the American abolitionists stand preeminently distinguished in this respect.

CONTINUE

32

According to the passage, the author considers the campaign of the abolitionists to be "strange" (line 2) because it requires them to

A) predict how future generations will judge their efforts to end slavery.

B) persuade others of a truth that should be very obvious.

C) provide evidence that links slavery to the general lack of enlightenment in society.

D) propose a course of action that is counter to the beliefs of the audience.

33

The author suggests that abolitionists' persuasive methods will have to take into account their opponents' inability to comprehend

A) logical arguments.

B) appeals to emotion.

C) challenges to authority.

D) political rhetoric.

34

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

A) Lines 3-6 ("Here . . . himself")

B) Lines 6-10 ("But these . . . proof")

C) Lines 10-12 ("The mind . . . reasoning")

D) Lines 12-16 ("The attempt . . . reason")

35

A central claim in the passage is that

A) public resistance to a cause delays the progress of justice by discouraging reformers.

B) Garrison is unlike most reformers in that he has been willing to endure constant criticism and abuse.

C) reformers face significant challenges in addressing the social injustices of their eras.

D) slavery is harder to eliminate than other forms of oppression because the press has stifled abolitionist voices.

36

Which statement best describes the method the author employs in the second paragraph (lines 17-45) to present his argument?

A) He accounts for the presence of prejudice by citing a general historical principle.

B) He explains the current situation by drawing a parallel to past reformers' experiences.

C) He shows that a traditional criticism of past reformers is not applicable to the present situation.

D) He disproves the charges made against his fellow reformers by illustrating their moral superiority.

37

The description of Galileo's experiences in lines 18-21 primarily serves to

A) encourage the audience to appreciate the contributions of an earlier reformer.

B) introduce an alternative explanation for the pervasive prejudice in society.

C) caution the audience about the dangers of espousing revolutionary ideas.

D) illustrate a preceding generalization about the effects of ignorance.

CONTINUE

38

The passage most strongly suggests that a society dominated by prejudice most likely has which effect on its members?

A) They readily become inspired to fight injustice.
B) They are prevented from reaching their fullest potential.
C) They most commonly feel discouraged and frightened.
D) They inevitably become corrupt in their dealings with others.

39

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

A) Lines 21-30 ("When . . . influence")
B) Lines 30-35 ("when . . . things")
C) Lines 47-51 ("A gloom . . . storm")
D) Lines 53-58 ("But mind . . . pathway")

40

In context, the phrase "as their traducers have represented" in lines 41-42 most strongly suggests that opponents to abolition

A) concealed their motives.
B) became symbols of ideals.
C) distorted the truth.
D) misinterpreted an event.

41

The author's attitude toward Garrison is best described as one of

A) deep admiration.
B) cheerful gratitude.
C) mild impatience.
D) grave disappointment.

42

As used in line 71, "at once" most nearly means

A) simultaneously.
B) initially.
C) correspondingly.
D) decisively.

CONTINUE

Questions 43-52 are based on the following passages.

Passage 1 is adapted from "Free-Floating Planets May Be More Common Than Stars." Published in 2011 by National Aeronautics and Space Administration. Passage 2 is adapted from Ashley Yeager, "Fewer Big Rogue Planets Roam the Galaxy, Recount Shows." ©2017 by Society for Science & the Public.

Passage 1

A survey scanned toward the center of the Milky Way galaxy during 2006 and 2007, revealing evidence for up to 10 free-floating planets roughly the mass of Jupiter. The isolated orbs, also known as orphan planets, are difficult to spot, and had gone undetected until now. The planets are located at an average approximate distance of 10,000 to 20,000 light years from Earth.

This could be just the tip of the iceberg. The team estimates there are about twice as many free-floating Jupiter-mass planets as stars. In addition, these worlds are thought to be at least as common as planets that orbit stars. This adds up to hundreds of billions of lone planets in our Milky Way galaxy alone.

"Our survey is like a population census," said David Bennett, a coauthor of the 2011 study. "We sampled a portion of the galaxy, and based on these data, can estimate overall numbers in the galaxy."

The survey is not sensitive to planets smaller than [with lower mass than] Jupiter and Saturn, but theories suggest lower-mass planets like Earth should be ejected from their stars more often. As a result, they are thought to be more common than free-floating Jupiters.

Previous observations spotted a handful of free-floating planet-like objects within star-forming clusters, with masses three times that of Jupiter. But scientists suspect the gaseous bodies form more like stars than planets. These small, dim orbs, called brown dwarfs, grow from collapsing balls of gas and dust, but lack the mass to ignite their nuclear fuel and shine with starlight. It is thought the smallest brown dwarfs are approximately the size of large planets.

On the other hand, it is likely that some planets are ejected from their early, turbulent solar systems, due to close gravitational encounters with other planets or stars. Without a star to circle, these planets would move through the galaxy as our sun and others stars do, in stable orbits around the galaxy's center. The discovery of 10 free-floating Jupiters supports the ejection scenario, though it's possible both mechanisms are at play.

"If free-floating planets formed like stars, then we would have expected to see only one or two of them in our survey instead of 10," Bennett said. "Our results suggest that planetary systems often become unstable, with planets being kicked out from their places of birth."

Passage 2

In a new study, Przemek Mróz of the Astronomical Observatory of the University of Warsaw and colleagues estimated the number of large, rogue planets in our galaxy using a technique called microlensing. When an object with a mass of a planet passes in front of a distant, background star, the gravity of the planet acts as a gravitational magnifying glass. It distorts and focuses the light, giving up the planet's existence.

Mróz and colleagues looked at 2,617 microlensing events recorded between 2010 and 2015 and determined which were caused by a rogue planet. For every typical star, called main sequence stars, there are 0.25 free-floating Jupiter-mass planets, the analysis suggests.

The new result sharply contrasts an estimate published in 2011, which suggested that rogue Jupiters are almost twice as common as main sequence stars. About 90 percent of stars in the universe are main sequence stars, so if that estimate were accurate, there should be a lot of free-floating Jupiters.

"That result changed our conceptual framework of the universe just a little bit," says astronomer Michael Liu of the University of Hawaii. It challenged long-held ideas about how planets go rogue because the known methods wouldn't generate enough planets to account for all the wanderers.

The 2011 result was based on a relatively small sample of microlensing events, only 474. Since then, infrared telescope images haven't detected as many free-floating planets as expected. "Over the years, serious doubts were cast over the claims of a large population of Jupiter-mass free-floaters," Mróz says.

David Bennett, coauthor of the 2011 study, agrees that the new census failed to find evidence for a large population of Jupiter-mass rogue planets. He notes,

CONTINUE

however, that the new data do reveal four times as many Jupiter-mass failed stars called brown dwarfs than predicted in the original census. So some of the rogues that were originally classified as planets may, in fact, be failed stars.

Liu says the latest census is much more in line with theories of how planets form. Most rogues should be Earth-mass or a little heavier. Those lighter planets get tossed out of their planetary systems much easier than behemoths like Jupiter.

43

Do the results of the survey described in Passage 1 support the conclusion that there are twice as many Jupiter-mass free-floating planets as Earth-mass ones?

A) Yes, because the survey demonstrates that there are more Jupiter-mass free-floating planets than were previously assumed.

B) Yes, because the survey accurately estimates the number of free-floating planets in the galaxy.

C) No, because the survey shows that there are more Earth-mass free-floating planets than Jupiter-mass ones.

D) No, because the survey does not include direct information about Earth-mass free-floating planets.

44

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

A) Lines 1-4 ("A survey . . . Jupiter")

B) Lines 9-11 ("This . . . stars")

C) Lines 20-23 ("The survey . . . often")

D) Lines 26-30 ("Previous . . . planets")

45

According to Passage 2, Mróz and colleagues analyzed microlensing events to

A) confirm the results of Bennett and his colleagues' 2011 survey of free-floating planets.

B) discover the minimum required mass for a planet to be detected in front of a distant, background star.

C) compare the relative sizes of main sequence stars and large, free-floating planets.

D) determine how many big, free-floating planets exist in the Milky Way galaxy.

46

As used in line 78, "account for" most nearly means

A) explained.

B) comprise.

C) locate.

D) identify.

47

The sixth paragraph of Passage 2 (lines 85-92) serves as both

A) a corroboration of recent results and a suggestion of a potential flaw in the method used to arrive at them.

B) a criticism of the method used in a recent experiment and a recognition of the method's technical sophistication.

C) an acknowledgment of recent findings and an explanation for how they might reflect on previous findings.

D) a revision of a previous claim and a rebuttal of a criticism of a previous research study.

CONTINUE

48

As used in line 59, "giving up" most nearly means

A) transferring.
B) abandoning.
C) interrupting.
D) revealing.

49

Which choice best describes the relationship between the two passages?

A) The results of a study outlined in Passage 2 challenge the results of a study outlined in Passage 1.
B) The scientists discussed in Passage 2 extended the research presented in Passage 1 into a new field of study.
C) The data shown in Passage 2 support the hypothesis put forth by the research team in Passage 1.
D) The researchers of Passage 2 identified variables that the researchers of Passage 1 failed to consider.

50

On which point about free-floating Jupiter-mass planets do the passages most clearly disagree?

A) Whether there are free-floating Jupiter-mass planets
B) How many free-floating Jupiter-mass planets there are
C) Whether Jupiter-mass planets can distort and focus light
D) How similar brown dwarfs are to Jupiter-mass planets

CONTINUE

51

Which choice from Passage 2 provides the best evidence for the answer to the previous question?

A) Lines 51-55 ("In a . . . microlensing")

B) Lines 60-62 ("Mróz . . . planet")

C) Lines 66-69 ("The new . . . sequence stars")

D) Lines 95-97 ("Those . . . Jupiter")

52

Which scientific idea is suggested in both passages?

A) Lower-mass planets are more likely to be ejected from their stars than Jupiter-mass planets are.

B) Brown dwarfs do not possess enough mass to produce their own sources of light.

C) Free-floating Jupiter-mass planets are nearly as common as planets that orbit stars.

D) Rogue planets are easily confused with Jupiter-mass failed stars by astronomers.

STOP

If you finish before time is called, you may check your work on this section only. Do not turn to any other section.