

SAT
TEST
BOOK

YEAR 2021
WRITING AND
LANGUAGE

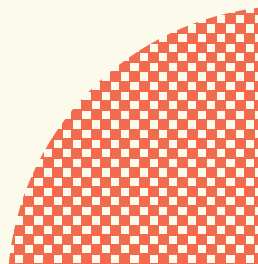
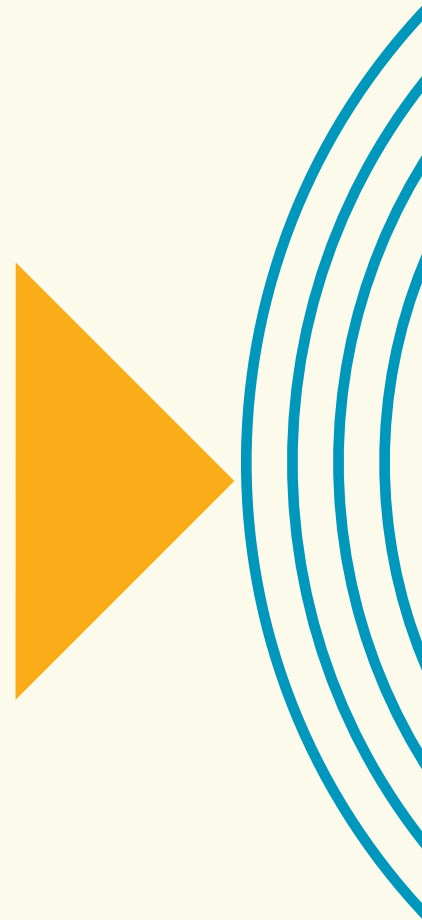


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MARCH 13, 2021
US

The SAT®

Test Book

IMPORTANT REMINDERS

1

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Do not use a mechanical pencil or pen.

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

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Questions 1-11 are based on the following passage and supplementary material.

Shedding Light on the Problem

Plant-pollinating insects are essential to the reproductive process of many flowering plants, but the numbers of these insects are declining around the world. Interestingly, a 2017 ecological study led by Dr. Eva Knop suggests that artificial lighting, the modern convenience that **1** illuminates many streets, storefronts, and athletic fields, may be contributing to the decline of these organisms.

1

- A) NO CHANGE
- B) illuminate
- C) are illuminating
- D) have illuminated

[1] Daytime pollinators, such as bees and butterflies, have many well-documented threats, so Dr. Knop's team sought to investigate a potential threat to nocturnal [2] pollinators; artificial light. [2] To do so, the team located samples of the thistle plant *Cirsium oleraceum*, which is pollinated by insects, in mountain meadows that are ordinarily dark at night. [3] Before the plants' flowering began, some of the plants were covered with mesh bags to [3] outlaw visits from [4] pollinators, however, others were left unbagged. [4] The scientists measured how much fruit each plant produced over the course of its life cycle. [5]

2

- A) NO CHANGE
- B) pollinators:
- C) pollinators
- D) pollinators,

3

- A) NO CHANGE
- B) oppose
- C) prevent
- D) revoke

4

- A) NO CHANGE
- B) pollinators, while
- C) pollinators, meanwhile,
- D) pollinators so that

5

The writer wants to add the following sentence to this paragraph.

Half of the plants in each category were then illuminated during the nighttime hours.

The best placement for the sentence is

- A) after sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

Whereas the unbagged plants' fruit production changed significantly with light exposure, the bagged plants saw no such effect. **6** The bagged plants couldn't be visited by pollinators. Because of that fact, the bagged plants self-fertilized and thus averaged only about **7** 15 fruits per plant in dark sites but 85 fruits per plant in illuminated sites. On the other hand, unbagged plants from the dark sites produced an average of 90 fruits per plant, whereas **8** bagged plants that were exposed to artificial light produced an average of 78 fruits per plant—a 13 percent decline in fruit production for plants that were illuminated at night. From these results, the researchers concluded that

6

Which choice most effectively combines the sentences at the underlined portion?

- A) The bagged plants couldn't be visited by pollinators, so the lack of pollinators meant they
- B) Being that they were unable to be visited by pollinators, the bagged plants therefore
- C) The pollinators couldn't visit the bagged plants, and those plants
- D) Because they couldn't be visited by pollinators, the bagged plants

7

Which choice provides accurate information from the graph?

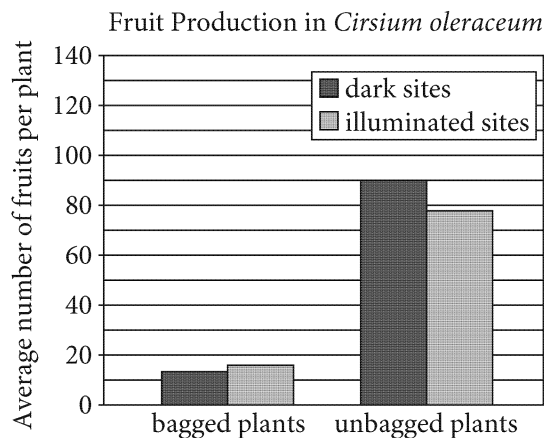
- A) NO CHANGE
- B) 15 fruits per plant whether they were in dark sites or
- C) 20 fruits per plant in dark sites but 80 fruits per plant in
- D) 100 fruits per plant whether they were in dark sites or

8

Which choice most accurately represents the information in the graph?

- A) NO CHANGE
- B) bagged plants from the dark sites
- C) unbagged plants from the illuminated sites
- D) unbagged plants that were not exposed to artificial light

nocturnal pollinators were avoiding the unbagged plants in the illuminated sites, **9** which affected the overall yield of the plants.



Adapted from Eva Knop et al., "Artificial Light at Night as a New Threat to Pollination." ©2017 by Eva Knop et al.

The scientists also found that the decline in nighttime pollination visits **10** coincided with a decline in visits from daytime pollinators. The precise cause for this dual decline was unclear; one possibility is that the plants were less nourishing to daytime pollinators when no longer visited by nighttime pollinators. Whatever the reason, artificial illumination clearly has adverse effects on plant pollination, and the increasing **11** presents of artificial lighting may pose a major problem for biodiversity. "Urgent measures must be taken, to reduce the negative consequences of the annually increasing light emissions on the environment," says Dr. Knop. She is hopeful that further research will focus on ways to reduce excessive light and revive populations of nighttime pollinators.

9

Which choice provides the best transition to the paragraph that follows?

- A) NO CHANGE
- B) but these pollinators were regularly visiting the unbagged plants in the dark sites.
- C) although the researchers hope to investigate this result further.
- D) and daytime pollinators were not making up for the loss.

10

- A) NO CHANGE
- B) coexisted to
- C) corresponded for
- D) correlated in

11

- A) NO CHANGE
- B) presents in
- C) presence of
- D) presence in

Questions 12-22 are based on the following passage and supplementary material.

Benefits of Dress Code Flexibility

In July 2016 the coffee shop chain Starbucks instituted a new policy to relax its dress code. The decision—allowing employees to customize their previously uniform looks with such accessories as hats and colorful socks—**12** reflects workplaces across the United States. From retail services to large corporate offices, employers are finding that flexible dress codes can make a company more attractive to potential **13** workers; boosting morale among current employees. Given these benefits, more employers ought to embrace the trend of relaxed dress codes.

There are a number of reasons why job applicants might favor companies that allow for some degree of flexibility in workplace attire. Having the option to dress casually can mean greater physical comfort. Also, being able to personalize otherwise identical uniforms with unique flourishes can enhance happiness by allowing **14** them to retain a greater sense of personal identity in the workplace.

12

- A) NO CHANGE
- B) reflects a new trend in
- C) reflects a new trend, or tendency, in
- D) is reflective of a new, national trend in

13

- A) NO CHANGE
- B) workers, additionally, they can boost
- C) workers. And boosting
- D) workers and boost

14

- A) NO CHANGE
- B) him or her
- C) employees
- D) the flourishes

15 Individuals' motives may vary, but job recruiters are finding that many potential employees do indeed share a preference for flexible dress codes, and embracing this preference could help companies attract a wider range of talent. According to a 2016 study, **16** essentially none of those surveyed wanted to be employed by a company with a relaxed dress code: 31 percent of respondents reported that they would prefer a company with a business casual dress code, and a further 27 percent reported that they would prefer a casual dress code or no dress code at all. **17**

Employee Survey on Office Dress Codes

Statement*	Percent agreeing
I would prefer to work at a company that has a formal dress code.	18%
I would prefer to work at a company that has a business casual dress code.	31%
I would prefer to work at a company that has a casual dress code or no dress code.	27%
A company's dress code doesn't impact my decision to work there.	23%
Total	99%

*Workers responded to the question "Which of the following statements most closely describes how a company's dress code impacts your decision to work there?"

Note: Responses do not total 100 percent due to rounding.

Adapted from OfficeTeam, "Casual Dress Code in Fashion at Work." ©2016 by Robert Half International Inc.

15

- A) NO CHANGE
- B) Individuals motives
- C) Individual's motives
- D) Individuals motives'

16

The writer wants to set up the information that follows in the sentence with an accurate interpretation of data from the table. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) all
- C) fewer than a quarter
- D) more than half

17

At this point, the writer is considering adding the following sentence based on information from the table.

Only 18 percent preferred a more formal dress code at work.

Should the writer make this addition here?

- A) Yes, because it provides additional evidence that supports the writer's argument.
- B) Yes, because it refutes an opposing point of view referred to elsewhere in the paragraph.
- C) No, because it misinterprets the information in the table.
- D) No, because it provides loosely related information that interrupts the discussion in the paragraph.

In addition to making companies more appealing to potential employees, **18** dress casually can also be a fun way to express one's individuality. When the accounting firm Crowe Horwath LLP asked workers what changes they would like to see in the **19** workplace, and workers said that dressing casually would help them most **20** with, "being comfortable, being engaged, and being productive," said chief people officer Julie Wood. The firm started allowing workers to wear jeans and other relatively casual attire, and the response from employees was overwhelmingly positive. "With our change in dress, the level of excitement and feedback from our people has been really phenomenal," Wood said.

Of course, formal workplace attire is **21** appropriate and even required in some contexts. For example, job interviews and client meetings often require professional clothing. **22** However, in certain occupations, such as law enforcement, uniforms without personal embellishments are still necessary. When possible, though, companies should consider relaxing dress codes and allow flexibility, a move that is likely to benefit both employees and companies.

18

Which choice most effectively introduces the main idea of the paragraph?

- A) NO CHANGE
- B) relaxing dress codes can also help businesses broaden their customer bases.
- C) forgoing formal work attire can also result in fewer conflicts between coworkers.
- D) instituting a flexible dress code can also improve current employees' morale.

19

- A) NO CHANGE
- B) workplace,
- C) workplace;
- D) workplace, while

20

- A) NO CHANGE
- B) with
- C) with:
- D) with;

21

- A) NO CHANGE
- B) admissible
- C) unexceptional
- D) genuine

22

- A) NO CHANGE
- B) Furthermore,
- C) Incidentally,
- D) Conversely,

Questions 23-33 are based on the following passage.

The Filtered Net

Search engines make it easy for us to keep up with current issues, but the information we find may not be as objective as it appears. Many search engines collect data from users, such as their locations and search

23 histories, they use what they gather to filter search results. This invisible customization may create what media CEO Eli Pariser has termed a “filter bubble,” a biased worldview that is **24** reinforced when it is consistently confirmed rather than challenged. It is important, especially with regard to political issues, that search engines make their filtering practices **25** explicit. When search engines make them explicit, users can be aware of potential biases when making important decisions, especially when those decisions **26** are shared with friends and family members on social media.

23

- A) NO CHANGE
- B) histories; and using
- C) histories they use
- D) histories, and use

24

- A) NO CHANGE
- B) enlarged
- C) defended
- D) emphasized

25

Which choice most effectively combines the sentences at the underlined portion?

- A) explicit, whereas
- B) explicit, which has the result that
- C) explicit so that
- D) explicit: this is an outcome that helps ensure

26

Which choice best sets up the main argument of the passage?

- A) NO CHANGE
- B) are made based on misleading statistics found online.
- C) impact civic duties such as candidate selection and voter opinion.
- D) have long-term effects that may not be easy to measure.

Psychologist Robert Epstein has shown how filtered **27** results, can lead to political biases. In an experiment conducted before the 2014 general election in India, Epstein created a fake search engine and asked 2,000 undecided voters to use it to research candidates running for the office of prime minister. Voters were divided into three groups, and each group was presented with results favoring a different major-party candidate. Participants whose searches favored a given candidate **28** was 12 percent more likely to report a positive view of that candidate than were participants in other groups. While there is no evidence that commercial search engines intentionally skew their results in favor of certain candidates or **29** positions, filters based on **30** user's browsing history's could produce similarly slanted results.

27

- A) NO CHANGE
- B) results can lead to:
- C) results, can lead to,
- D) results can lead to

28

- A) NO CHANGE
- B) has been
- C) were
- D) are

29

- A) NO CHANGE
- B) positions, however,
- C) positions
- D) positions, however

30

- A) NO CHANGE
- B) users' browsing history's
- C) users browsing histories
- D) users' browsing histories

31 This possibility is especially troubling because most users think their searches display the full spectrum of perspectives on an issue. The vast majority of participants in Epstein’s experiment—99.3 percent—did not recognize the bias in their results. **32** Politicians hope to counteract this: a 2012 survey from the Pew Research Center indicated that 66 percent of respondents believed that results obtained through a search engine represent all available information rather than a personalized selection.

Filtering is essential to search engines because the sheer volume of information on the Internet makes it impossible to display more than a small portion of all relevant results. But in the case of political information, it is important for users to be aware of the existence of filters and of the factors that might bias results. If search engines published this information **33** —by displaying a warning that results are selected based on user preferences, for example—users would be better able to read political coverage online with an appropriately critical eye and thus base their political beliefs on a fuller range of information.

31

Which choice provides the best transition from the previous paragraph to the information that follows?

- A) NO CHANGE
- B) The study therefore appears to contradict the idea that
- C) Election outcomes are nevertheless unaffected, since
- D) Search engine designers assume that

32

- A) NO CHANGE
- B) But there are mitigating factors:
- C) And this finding was by no means atypical:
- D) This was subsequently reversed:

33

The writer is considering deleting the underlined phrase, adjusting the punctuation as needed. Should the phrase be kept or deleted?

- A) Kept, because it introduces an additional point about filter bubbles that is developed in the paragraph.
- B) Kept, because it supports the passage’s argument about search engines by offering a potential solution.
- C) Deleted, because it blurs the focus of the passage by introducing information unrelated to politics.
- D) Deleted, because it repeats information about search engine filters that appears earlier in the passage.

Questions 34-44 are based on the following passage.

Oglala Lakota Art Gets Rolling

A 2015 study led by First Peoples Fund, an organization dedicated to supporting indigenous **34** artists revealed that roughly four out of ten households on the Pine Ridge Indian Reservation in South Dakota had home businesses centered on arts or handicrafts. This finding reflects the deeply rooted importance of art within the reservation's Oglala Lakota culture. However, the study also concluded that the vastness of the reservation limited local artists' ability to collaborate with one another, find mentors, and sell their art. **35** Regardless of these discoveries, First Peoples Fund worked with a group of organizations and supporters to implement a plan for strengthening the creative economy of the reservation. The outcome of the organization's combined efforts **36** have been Rolling Rez Arts, a bus that would serve as a mobile space to support artistic collaboration and **37** forge critical partnerships with local financial institutions.

34

- A) NO CHANGE
- B) artists:
- C) artists—
- D) artists,

35

Which choice provides the most effective transition from the previous sentence to the information that follows in this sentence?

- A) NO CHANGE
- B) With its headquarters in Rapid City, South Dakota,
- C) In light of the study's results,
- D) Founded in 1995,

36

- A) NO CHANGE
- B) were
- C) are
- D) was

37

Which choice best states one of the main points of the passage?

- A) NO CHANGE
- B) create new commercial opportunities for artists in the area.
- C) provide access to computers for people who need them.
- D) offer entrepreneurship classes for people living on the reservation.

Rolling Rez Arts itself was a collaborative work of art by Oglala Lakota artists. Donald Montileaux, **38** a 2014 inductee into the South Dakota Hall of Fame, was selected to give the bus a distinctive appearance. He created a lavish design for the **39** bus. This design, intended for the sides of the bus, had vivid pictograms of running Buffalo inspired by the narrative scenes of ledger art. After Montileaux produced drawings of the design, an Oglala Lakota graphic artist adapted them to fit the bus, helping transform **40** its exterior into a brilliant, traveling canvas.

38

Which choice gives information about Montileaux that best supports the paragraph's discussion?

- A) NO CHANGE
- B) a practitioner of the traditional Plains Indian art form known as ledger art,
- C) an artist whose work has been featured in galleries in New Mexico, Minnesota, and Arizona,
- D) a cover illustrator for several books by Joseph M. Marshall III,

39

Which choice most effectively combines the sentences at the underlined portion?

- A) bus, the sides of which would include vivid running-buffalo-inspired pictograms, suggested
- B) sides of the bus, with vivid pictograms of running buffalo inspired
- C) bus's sides, and this design featured running buffalo, in vivid pictogrammatic form, suggested
- D) sides of the bus—in these places would be vivid pictograms of running buffalo inspired

40

- A) NO CHANGE
- B) their
- C) one's
- D) his

With the eye-catching collaboration complete, the bus was ready to begin journeying across the far-flung communities of the reservation. The bus's versatile interior allows artists to work together on projects, study with mentors, and even set up bank accounts to help grow their art as a business. The bus also hosts a gift shop whose manager buys works on-site to sell elsewhere along the bus's travels, **41** enhancing artists' ability to benefit financially from their art. Local artist and **42** rancher, Tony Richards used to have to drive more than an hour to reach a local cultural center, where he sold his jewelry at the gift shop. "A lot of times I didn't have time to go over there," Richards said. Now, with Rolling Rez Arts, the shop travels to him.

41

- A) NO CHANGE
- B) exalting
- C) embellishing
- D) exaggerating

42

- A) NO CHANGE
- B) rancher Tony Richards
- C) rancher Tony Richards,
- D) rancher, Tony Richards—

While the organizations behind the project ultimately aim to open a permanent art space and gallery on the reservation to serve as a fixed cultural **43** hub; the art in motion of Rolling Rez Arts will continue. As

44 Warren “Guss” Yellow Hair, an artist trainer for First Peoples Fund, said, “What I do is contact some of the established artists and utilize some of their skills.”

43

- A) NO CHANGE
- B) hub, and while
- C) hub, and
- D) hub,

44

The writer wants to incorporate a direct quotation into a conclusion that summarizes and reflects upon the main idea of the passage. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) Jeremy Staab, the program manager of First Peoples Fund, said, part of the success of Rolling Rez Arts depends on “thinking about asset building”—that is, determining how to get residents “comfortable with banking.”
- C) Brandie Macdonald, the former program manager of First Peoples Fund, said, Rolling Rez Arts “provides access to capital” and addresses other needs in the community as it passes through the space where the community resides, which “is beautiful to think about.”
- D) Lori Pourier, the president of First Peoples Fund, said of the founding of Rolling Rez Arts, “We had a conversation about doing something on wheels.”

STOP

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

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Questions 1-11 are based on the following passage.

Material Ecology: Design for the Future

In 2006, architect and designer Neri Oxman was still a doctoral student at the Massachusetts Institute of Technology (MIT) when she proposed a radical new approach for the field of design. Oxman **1** quickly established herself as a rising star in design, having been featured in both peer-reviewed scholarly journals and popular magazines across the world.

1

Which choice most effectively establishes the main topic of the passage?

- A) NO CHANGE
- B) envisioned a more holistic and ecological design paradigm that combined biology, engineering, and computer science; she called this approach “material ecology.”
- C) coined the term “material ecology” to describe an interdisciplinary research project, which she documented on a blog by the same name.
- D) set out to discover a new way to build things.

In Oxman's view, early twenty-first-century architectural design was stubbornly rooted in the design principles of the industrial era. **2** Assembled with discrete, mass-produced, interchangeable parts, most structures were built like machines. Conventional construction processes, Oxman observed, were in contrast to the dynamic, organic ways most biological structures occur in **3** nature, there material is not a secondary but an essential aspect of design. By utilizing new 3-D printing technologies, Oxman argued, designers could begin to grow or fabricate structures from seamless, multifunctional materials that would be both integrated **4** into and responsive to the surrounding environment. The possibilities she imagined were remarkably creative: buildings made with breathable exteriors and concrete that could repair itself, like bone. Indeed, some might even be called poetic, such as shell-like homes with insulation that functioned like a bird's plumage—raising and flattening feathers—to regulate temperature.

2

Which choice best supports the idea in the previous sentence?

- A) NO CHANGE
- B) Having studied biology, computational design, and architecture, Oxman approached architectural design with a uniquely interdisciplinary perspective.
- C) Oxman spent her time studying natural structural systems like bone, wood, feathers, shells, and nests and was impressed by their innate beauty.
- D) Collaboration with nature was fundamental to Oxman's concept of material ecology.

3

- A) NO CHANGE
- B) nature, where
- C) nature. Where
- D) nature,

4

- A) NO CHANGE
- B) on and responsive for
- C) by and responsive of
- D) for and responsive with

Since Oxman introduced the concept, material ecology has garnered acclaim and influenced designers worldwide. In 2014, Simon **5** Schleicher an architectural designer at the University of Stuttgart, followed Oxman's biomimetic approach in solving a particular engineering **6** challenge: designing shading systems for irregularly shaped glass-paneled skyscrapers. External awnings, which are assembled out of standardized parts, often don't fit the atypical contours of modern buildings and are prone to weather damage. Recognizing the insufficiency of these traditional rigid-body devices, **7** Schleicher's designs were modeled on the elastic movement principles of plants. His solution was a single-material façade-shading structure that could cover a building like the petals on a flower, able to open and contract in response to changing weather conditions.

5

- A) NO CHANGE
- B) Schleicher an architectural designer at the University of Stuttgart
- C) Schleicher, an architectural designer, at the University of Stuttgart
- D) Schleicher, an architectural designer at the University of Stuttgart,

6

- A) NO CHANGE
- B) challenge; designing
- C) challenge designing:
- D) challenge designing—

7

- A) NO CHANGE
- B) Schleicher modeled his designs on the elastic movements of plants.
- C) the elastic movements that Schleicher's designs were modeled on were those of plants.
- D) the elastic movements of plants provided the model for Schleicher's designs.

Schleicher's design **8** is just one application born from Oxman's progressive design philosophy. In fact, Oxman herself is at work **9** essaying the conceits of her fancy at MIT, where she is now a professor. Her recent

8

Which choice provides the most effective transition from the previous paragraph to this one?

- A) NO CHANGE
- B) is part of a larger research project, titled "Deployable Structures in Architecture—Flexible Surface Structures on the Basis of Bionic Principles."
- C) was published in a 2015 issue of *Computer-Aided Design*, which was edited by Oxman.
- D) is, as of 2018, still at an early stage of development, and Schleicher himself is now an assistant professor at the University of California, Berkeley.

9

- A) NO CHANGE
- B) cooking up fresh stuff
- C) developing new ideas
- D) following her hunches

projects include a 3-D printed garment designed for

10 keeping and sustaining life at a time of interstellar space travel and a room-sized structural dome spun entirely by silkworms. **11** Unlike conventional housing structures, the silkworm-spun dome is beautiful, biodegradable, self-healing, and replicable.

10

- A) NO CHANGE
- B) sustaining human biological systems during a period of space travel
- C) the preservation of life while traveling on a journey through space
- D) sustaining life during space travel

11

The writer wants a concluding sentence that offers a general assessment of the main topic of the passage. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) Oxman's design work has even expanded into the realm of high fashion, with 3-D printable gowns and bodices customized for each model.
- C) At the vanguard of her field, Oxman is looking far beyond the conventions of the present to define the future of design.
- D) Oxman was not the first designer to take inspiration from the natural world, and she will certainly not be the last.

Questions 12-22 are based on the following passage.

Incompletely Complete Art

12 Universally celebrated for containing one of the most important art collections in the world, the Metropolitan Museum of Art is world famous for its vast collection of undisputed masterpieces, but at its newest gallery, the Met Breuer, an exhibition features works of art **13** beginning with those made by Renaissance masters and concluding with contemporary works. In spite of their great variety, the artworks in the exhibit, titled *Unfinished: Thoughts Left Visible*, share a striking commonality: whether it was because the artist could not keep working or made the deliberate decision to stop, each work is incomplete. Spanning five centuries of art with over 190 pieces, the exhibition explores the theme, fascinating to artists and art lovers alike, of how to know when a work of art is truly finished.

Some works, such as Flemish painter Peter Paul Rubens's *Henry IV at the Battle of Ivry*, **14** was left unfinished due to circumstances outside of the artist's control. Rubens was living in Antwerp (in what is now Belgium) in 1628 when he began this **15** ambitious work, commissioned by Marie de Medicis, Queen of France, as part of a series documenting her late husband's great victories. Rubens **16** fills the enormous canvas with

12

- A) NO CHANGE
- B) Featuring a collection of works by the greatest artists in the world,
- C) Understood worldwide to be a premier location to view artworks,
- D) DELETE the underlined portion, adjusting the capitalization as needed.

13

Which choice best sets up the information that follows in the paragraph?

- A) NO CHANGE
- B) some visitors might initially find inadequate.
- C) by famous artists like Rembrandt van Rijn and Jackson Pollock.
- D) from the museum's own collection and on loan from major international museums.

14

- A) NO CHANGE
- B) is
- C) were
- D) has been

15

- A) NO CHANGE
- B) enthusiastic
- C) industrious
- D) determined

16

- A) NO CHANGE
- B) will fill
- C) is filling
- D) filled

dynamic brushstrokes, sketching out a dramatic battle scene with a fierce, three-armed soldier at its **17** center; planning to paint over one arm later. Three years later, Rubens still had not decided which arm to remove when, frustrated that the now-exiled queen had sent him the wrong canvas dimensions and failed to make the expected payments, **18** and abandoning the painting for good. *Henry IV* was never sent to France, but Rubens's significance as an artist ensured its status as one of Belgium's national treasures.

Other artists may intentionally leave a work unfinished, as African American artist Kerry James Marshall did with his 2009 painting *Untitled*. **19** Although the painting within a painting is a conventional

17

- A) NO CHANGE
- B) center:
- C) center
- D) center,

18

- A) NO CHANGE
- B) he abandoned
- C) while abandoning
- D) having abandoned

19

At this point, the writer is considering adding the following sentence.

The work features a painter turned away from her self-portrait in progress.

Should the writer make this addition here?

- A) Yes, because it provides information that explains why Marshall left his painting unfinished.
- B) Yes, because it provides details about the painting that are necessary for understanding the main idea of the paragraph.
- C) No, because it does not explain why Marshall's work belongs in the Met Breuer exhibition.
- D) No, because it does not effectively describe the impact Marshall's painting has on viewers.

artistic motif, Marshall deploys it for a specific purpose: to address the lack of black subjects in Western art. As Marshall noted in a 2014 interview, “When I was growing up, I recognized my absence in the pantheon.” The painting’s incompleteness encourages viewers to imagine finishing the work themselves. **20** More than that, though, it provokes them to reflect on the scarcity of black subjects in the artistic canon. **21** Marshall is inspired by the work of African American artist Charles White.

Andrea Bayer, the curator of the exhibition, says that unfinished works can be masterpieces in their own right and illuminate the process of artistic creation.

22 Paintings, by Rubens and Marshall, demonstrate that unfinished works can also provide valuable insights into the interplay between historical contexts and creative decisions.

20

- A) NO CHANGE
- B) In other words, indeed,
- C) On the contrary,
- D) In the final analysis,

21

Which choice provides the most effective conclusion to the paragraph?

- A) NO CHANGE
- B) Marshall’s work has appeared in major museums, including the Museum of Modern Art in New York and the Art Institute of Chicago.
- C) Born in Alabama in 1955, Marshall grew up in the Watts section of Los Angeles, and these early influences shaped his approach to making art.
- D) What Marshall seems to have left undone actually allows *Untitled* to fulfill his artistic purpose.

22

- A) NO CHANGE
- B) Paintings by Rubens and Marshall
- C) Paintings—by Rubens and Marshall—
- D) Paintings by Rubens and Marshall,

Questions 23-33 are based on the following passage and supplementary material.

Giants of the Sea

Mysticete whales are the giants of today's oceans—but when and why did they get so big? One hypothesis holds that around 30 million years ago, early in the whales' evolutionary history, gigantism (a typical length of 10 **23** meters) or more gave the whales a survival advantage because it meant they could outcompete smaller whales for prey. According to another hypothesis, gigantism evolved in the whales about 23 million years ago because larger mysticetes had been more successful than their smaller counterparts at defending themselves against massive predators. Recently, a group of researchers decided to evaluate both hypotheses.

The researchers collected length data for living mysticete **24** species. They estimated the typical length of several mysticete species that are extinct, making the estimates from fossils. The first known mysticete species appeared around **25** 30 million years ago and is estimated by the researchers to have been 7 meters in length. Based on the hypotheses they were testing, the researchers had expected the fossil data to show a shift toward gigantism between 20 and 30 million years ago.

23

- A) NO CHANGE
- B) meters or more—
- C) meters or more)
- D) meters—or more

24

Which choice most effectively combines the sentences at the underlined portion?

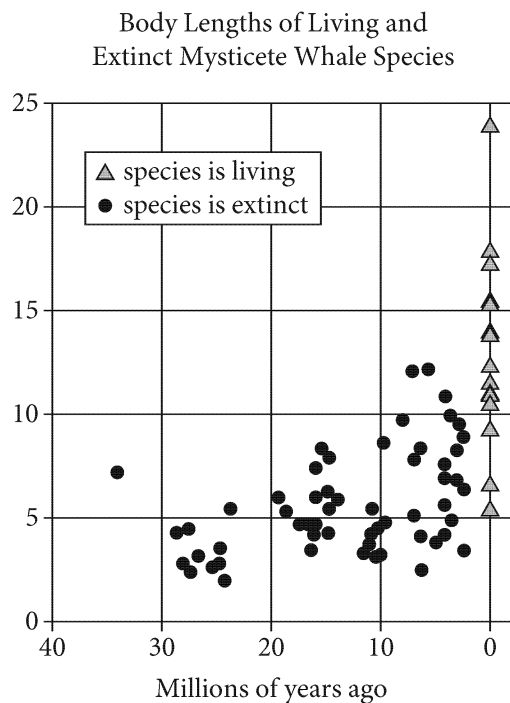
- A) species; fossils of several mysticete species that are extinct were used by the researchers for estimates of typical length.
- B) species; they collected it for several extinct ones by estimating their typical length, making the estimates from fossils.
- C) species and, from fossils of extinct ones, estimated the typical length of several.
- D) species and, from fossils, estimated the typical length of several extinct mysticete species.

25

Which choice most accurately represents data in the graph?

- A) NO CHANGE
- B) 34
- C) 40
- D) 44

To the researchers' surprise, though, the data indicated that during this period, **26** the most abundant mysticete species had a typical length of only about 6 meters. In fact, the data **27** suggested that the shift toward gigantism did not occur until the last 10 million years. Today, the majority of mysticetes are more than 10 meters in length, with members of the longest species reaching nearly 25 meters.



Adapted from Graham J. Slater et al., "Independent Evolution of Baleen Whale Gigantism Linked to Plio-Pleistocene Ocean Dynamics." ©2017 by Graham J. Slater et al.

26

Which choice most accurately represents data in the graph?

- A) NO CHANGE
- B) nearly half of mysticete species had a typical length of less than 5
- C) the largest mysticete species had a typical length of only about 12
- D) most mysticete species had a typical length of less than 5

27

- A) NO CHANGE
- B) will suggest
- C) would suggest
- D) had been suggesting

To account for the unanticipated data, the researchers developed a new hypothesis: mysticetes grew in response to changes in climate. About 4.5 million years ago, Earth entered an ice age, with many cycles of glacial formation and **28** to retreat. Every time the glaciers melted, water carried nutrients from the land into shallow ocean waters, a process called runoff. Changes in air temperature caused wind patterns to shift, **29** that shift in turn triggered a process known as upwelling, causing nutrients from the deep ocean to rise up toward the surface. **30** However, more nutrients meant more available food.

28

- A) NO CHANGE
- B) retreat.
- C) retreated.
- D) glaciers retreating.

29

- A) NO CHANGE
- B) this
- C) which
- D) DELETE the underlined portion.

30

- A) NO CHANGE
- B) Conversely,
- C) Regardless,
- D) DELETE the underlined portion, adjusting the capitalization as needed.

[1] Together, runoff and upwelling created what one science journalist described **31** as: dense “buffets” for the mysticetes. [2] But these buffets were not continuous; they were patchy and seasonal. [3] According to paleobiologist Jorge Velez-Juarbe, a “large size allows [a whale] to take a giant bite” and **32** vacillate more easily between areas rich in food. [4] A large body can also store more fat to sustain a whale between feedings. [5] The researchers believe that for these reasons, smaller mysticetes gave way to giant ones. **33**

31

- A) NO CHANGE
- B) as
- C) as;
- D) as—

32

- A) NO CHANGE
- B) ambulate
- C) migrate
- D) transfer

33

The writer wants to add the following sentence to this paragraph.

With food being only occasionally plentiful, gigantism gave the mysticetes several key advantages.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

Questions 34-44 are based on the following passage.

Bearing Fruit with Community Gardens

In 2011 residents of the Crown Heights neighborhood in Brooklyn, New York, turned a vacant local lot into a garden. They maintained the garden for years, beautifying the landscape and reaping fruits and vegetables—until a real estate company purchased the land and ultimately **34** succeeded in evicting the gardeners. After the **35** resident's forced departure, the land returned **36** back to being disused, subject to the slow process of commercial development.

37 A plague on many cities are vacant lots. These vacant lots often languish as dumping grounds for litter and waste. As the story of the Crown Heights community garden shows, commercial development may not always be the ideal solution to the problem, since regulations and long application processes can prevent companies from taking action on the plots. Community gardens merit support over uncertain commercial enterprise not only because they can offer a speedier means of revitalizing vacant lots **38** and because they can also bring unique benefits to residents and neighborhoods.

34

- A) NO CHANGE
- B) succeeded for
- C) seceded in
- D) seceded at

35

- A) NO CHANGE
- B) residents'
- C) residents
- D) resident

36

- A) NO CHANGE
- B) and regressed to disuse,
- C) to disuse,
- D) to its previous state of being in disuse,

37

Which choice most effectively combines the sentences at the underlined portion?

- A) While vacant lots plague many cities, they are often languishing
- B) Plaguing many cities often are vacant lots, which languish
- C) Vacant lots plague many cities, often languishing
- D) Many cities are plagued by vacant lots, so they often languish

38

- A) NO CHANGE
- B) as they can also
- C) and can also
- D) but also because they can

Free from certain restrictions imposed on developers, individuals can work together and in tandem with local institutions and government to **39** rid vacant lots of soil contaminants that would impede the development of community gardens. A garden in Fairmont, West Virginia, developed in 2013 on a disused piece of land, serves as a prime example. Local business **40** owner, Christa Blais worked with the city to acquire the property, while students at Fairmont State University built a rainwater-collection system and helped design sections of the garden. **41** Although certain gardeners are motivated primarily by a desire for tastier food, the city of Fairmont facilitated the building of a bridge and paved the roads around the garden for easier access. The garden had already begun to flourish by the fall of 2014 when funding for the bridge and other projects **42** were obtained through a national grant awarded in recognition of the garden's positive impact on the community.

39

Which choice most effectively sets up the discussion that follows in the paragraph?

- A) NO CHANGE
- B) create thriving community gardens relatively quickly.
- C) decide what types of food and flowers should be grown in each community garden.
- D) ensure that a garden can be financially self-sustaining into the future.

40

- A) NO CHANGE
- B) owner Christa Blais,
- C) owner: Christa Blais,
- D) owner Christa Blais

41

Which choice provides the most effective transition from the previous sentence to the information that follows in this sentence?

- A) NO CHANGE
- B) Because it is important to Blais that children learn about where their food comes from,
- C) Despite the need for a fence around the perimeter,
- D) In addition to aiding Blais in securing the land,

42

- A) NO CHANGE
- B) have been
- C) was
- D) are

A community garden can be impactful in ways other than as a means of rapidly beautifying an unsightly lot. The Fairmont garden, for example, provides access to fresh produce, which residents can grow on their own rented plots or cultivate on a shared community plot. (In some neighborhoods, community gardens are crucial in this **43** respect.) The garden also offers students the opportunity to learn about food production, while community members can enjoy the natural beauty of a garden even if they do not have enough yard space to grow their own. Not every vacant lot should be turned into a **44** garden, but organizations such as the National Gardening Association will continue providing resources aimed at ensuring gardens everywhere bear fruit.

43

The writer is considering revising the underlined portion to the following.

respect, yielding nutrient-rich foods that would otherwise be difficult for residents to obtain.

Should the writer make this revision?

- A) Yes, because it explains why the ability of community gardens to provide access to fresh produce is so important.
- B) Yes, because it provides additional information about the kinds of crops that can be grown in community gardens.
- C) No, because it undermines a point made earlier in the paragraph about food grown in community gardens.
- D) No, because it interjects information that is only tangentially related to the creation of community gardens.

44

Which choice most effectively concludes the passage?

- A) NO CHANGE
- B) garden, though, with some experts arguing that produce of suitable freshness can simply be brought into communities that lack gardens.
- C) garden; larger lots in particular should be designated for commercial development since they can accommodate bigger structures.
- D) garden, but when the alternative is slow-moving commercial development that may never bear fruit, the case for a community garden is compelling.

STOP

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

**APRIL 13, 2021
US SCHOOL DAY**

The SAT[®]

Test Book

IMPORTANT REMINDERS

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

Some questions will direct you to an underlined portion of a passage. Other questions will direct you to a location in a passage or ask you to think about the passage as a whole.

After reading each passage, choose the answer to each question that most effectively improves the quality of writing in the passage or that makes the passage conform to the conventions of standard written English. Many questions include a “NO CHANGE” option. Choose that option if you think the best choice is to leave the relevant portion of the passage as it is.

Questions 1-11 are based on the following passage.

OLIVE for All

1 Computer programs rely on many different pieces of software in order to function properly. Examples of computer programs include games and word processors. However, rapid technological advancements

1

Which choice most effectively combines the underlined sentences?

- A) In order to function properly, computer programs rely on many different pieces of software; they include games and word processors.
- B) Computer programs, such as games and word processors, rely on many different pieces of software in order to function properly.
- C) Computer programs, including games and word processors, function properly and rely on many different pieces of software for that.
- D) For functioning properly, games, word processors, and other computer programs rely on many different pieces of software.

render hardware (physical computing devices) and operating **2** systems, software needed to run programs) out-of-date, which makes it difficult for individuals to access old computer programs and associated data files. According to Mahadev Satyanarayanan of Carnegie Mellon University and Vasanth Bala of the IBM Corporation, **3** data from computer programs remain available only as long as the “software applications that process those [data] formats are also preserved.”

Satyanarayanan and Bala recognized that many individuals may not have access to older computer programs and **4** they’re required software, so they developed OLIVE (Open Library of Images for Virtualized Execution), an executable content archive. OLIVE has two main purposes: First, it contains software that enables a modern computer to simulate all of the software of an older computer. Users stream this software

2

- A) NO CHANGE
- B) systems, (software
- C) systems (software
- D) systems—software

3

Which choice most effectively uses a quotation from a 2011 Library of Congress interview to further explain the idea presented in the previous sentence?

- A) NO CHANGE
- B) scholars in a variety of scientific fields “rely on complex simulation and visualization software” to perform experiments.
- C) “much attention has been paid to the preservation of digital content like text, audio and video,” while software applications become obsolete.
- D) digital libraries should include “safeguards to make sure [people] don’t publish something that [they] don’t have rights to.”

4

- A) NO CHANGE
- B) their
- C) its
- D) it’s

over the Internet to their newer electronic devices,

5 and which allows them to access obsolete computer programs in order to retrieve associated data files. Second, OLIVE functions as a free digital archive of outdated computer programs that individuals can use for education and research **6** purposes.

OLIVE's collection **7** includes sophisticated search tools that allow users to navigate the archive with ease. One example is the Great American History Machine, an interactive map containing US census and election data from 1840 to 1990. This program was created by history professor David Miller in the late **8** 1980s, to help college students engage critically with US history. Owing to a lack of funding, Miller's program was never updated for modern computer systems, but it may still be a useful teaching resource. Another program that can be found in OLIVE is NCSA Mosaic, one of the earliest web browsers. NCSA Mosaic provides a means of viewing some of the oldest websites in their original format, which may prove invaluable to historians of the Internet.

5

- A) NO CHANGE
- B) it
- C) which
- D) this

6

- A) NO CHANGE
- B) uses and purposes.
- C) purposes at no cost.
- D) purposes when they need them.

7

Which choice most effectively establishes the main idea of the paragraph?

- A) NO CHANGE
- B) has been praised by teachers, historians, and librarians.
- C) includes programs that were preserved because of their unique content or their function.
- D) is funded jointly by IBM and Carnegie Mellon University.

8

- A) NO CHANGE
- B) 1980s
- C) 1980s:
- D) 1980s;

9 OLIVE's collection extends beyond the domain of educators and researchers however. When programmers remake a classic video game or NASA scientists need their computers on Earth to be compatible with those used on a spacecraft on a decade-long mission, **10** he or she may rely on OLIVE to fulfill their needs. As digital technologies continue to improve, **11** preserving digital information is likely to become an urgent public policy matter.

9

Which choice provides the most effective transition from the previous paragraph to this paragraph?

- A) NO CHANGE
- B) OLIVE's collection has a variety of potential applications for industry, nevertheless.
- C) Furthermore, many digital libraries stand to benefit by using OLIVE.
- D) In addition, Satyanarayanan and Bala are working to enhance OLIVE's capabilities.

10

- A) NO CHANGE
- B) they
- C) one
- D) we

11

The writer wants to conclude by emphasizing the main idea of the passage. Which choice best concludes the passage?

- A) NO CHANGE
- B) Satyanarayanan and Bala will likely face a variety of hurdles: chief among them, copyright protections on software programs.
- C) OLIVE's role will become increasingly important: to function as an archive of digital products that were once commonplace.
- D) OLIVE's software archive will complement efforts to preserve other types of digital content, such as audio and video.

Questions 12-22 are based on the following passage.

The Tale of Otsi:!

In 2008 Owisokon **12** Lahache—an art teacher at a school for Mohawk students in Kahnawake, Quebec, started looking for a way to teach her pupils about both digital media art and their Mohawk heritage. **13** Lahache partnered with a company founded by Mohawk multimedia artist Skawennati Fragnito to develop a workshop to use in the 2008–2009 school year. By the end of the year, Lahache’s students had designed their very own Mohawk-themed video game.

The workshop guided the students through several phases of game development. The first **14** step was the storytelling phase. During this first phase, students

12

- A) NO CHANGE
- B) Lahache, an art teacher at a school for Mohawk students in Kahnawake, Quebec,
- C) Lahache, an art teacher at a school for Mohawk students in Kahnawake, Quebec;
- D) Lahache an art teacher at a school for Mohawk students in Kahnawake, Quebec,

13

At this point, the writer is considering adding the following sentence.

The name Kahnawake is derived from a Mohawk word that means “place of the rapids.”

Should the writer make this addition here?

- A) Yes, because it adds relevant information about the heritage and culture of Lahache’s students.
- B) Yes, because it introduces a detail about Mohawk naming traditions that are discussed later in the passage.
- C) No, because it provides loosely related information that interrupts the paragraph’s discussion of the workshop.
- D) No, because it does not provide adequate detail about the origins of the Mohawk language.

14

Which choice most effectively combines the sentences at the underlined portion?

- A) step was the one that was the storytelling phase, and
- B) step, the storytelling phase, was the phase in which
- C) step was the storytelling phase, and
- D) step was the storytelling phase, in which

learned different storytelling techniques, listened to stories presented by elders, **15** also sharing stories they knew. From this phase emerged the narrative the students would soon bring to **16** life, an Iroquois hunter journeys back to his village and defends it against characters from traditional Mohawk legends. **17** For this phase, the students had plenty of legends to draw from. Students outlined the game using sketches and clay maps; then, after a series of lessons on video game production **18** (in which they studied topics such as programming and 3-D animation), the students began to implement their plan. The end result was the game Otsi:!! Rise of the Kanien'kehá:ka Legends.

15

- A) NO CHANGE
- B) they also shared
- C) and shared
- D) in addition to sharing

16

- A) NO CHANGE
- B) life
- C) life;
- D) life:

17

Which choice provides the best transition from the previous information to the rest of the paragraph?

- A) NO CHANGE
- B) Next came the planning and development phases.
- C) Lahache served as a cultural adviser during all of the phases.
- D) Introducing the game to the public was one of the final phases.

18

Which choice provides information that is most relevant to the discussion in the paragraph?

- A) NO CHANGE
- B) (a subject with a short but complex history),
- C) (which differs dramatically from the production of board games),
- D) (which continued to be taught at later workshops as well),

When the game starts, a foreboding voice introduces the player's **19** quest: "Brave hunter, you have fought many creatures . . . so you can save your village and all the people you love from the horrible monster that destroyed mine." During the game, the player takes the vantage point of the hunter, seeing only arms holding a bow and arrow. The hunter travels through countryside landscapes, and sometimes swims underwater, to fend off an attack on his village by the Flying Head, an ominous-looking monster with white eyes and ragged teeth. Along the way, the hunter encounters other legendary characters, such as the Hoof Lady and the Tree People, and **20** hear their stories. The hunter must then use the information he has learned to defeat the Flying Head.

The game was a success. Otsi! Rise of the Kanien'kená:ka Legends won the 2010 imagineNATIVE Best New Media Award. While video games featuring indigenous people have largely been designed without the input of the people **21** themselves, Lahache's workshop is part of a developing trend: indigenous people are using the medium to tell their own stories. As Fragnito explains, "We wanted to see more native people being not just the consumers of, but the producers of the [cyber] space." **22** Fragnito and Lahache hope to continue to empower indigenous youths to take a more active role in producing new technologies.

19

- A) NO CHANGE
- B) quest at the beginning of the game:
- C) quest before anything else happens:
- D) quest by saying the following words:

20

- A) NO CHANGE
- B) are hearing
- C) have heard
- D) hears

21

- A) NO CHANGE
- B) themselves; though
- C) themselves,
- D) themselves, and

22

Which choice provides the most effective conclusion to the paragraph and the passage?

- A) NO CHANGE
- B) Thanks in part to the innovations of Fragnito and Lahache, the video game industry continues to thrive.
- C) The success of the workshop shows that video game design can be an interesting and lucrative career.
- D) Another game to come out of the workshop is Ienién:te and the Peacemaker's Wampum, which revolves around the story of an archaeologist who returns to her hometown.

Questions 23-33 are based on the following passage and supplementary material.

Engineering the Future of Wind Energy

From 2010 to 2016 the amount of electrical power produced by wind in the United States more than doubled. As the market for wind power has **23** inflated, so has the need for experts who can design and build safe and efficient wind farms. **24** Nevertheless, engineers are needed to work on the next generation of wind turbine—the large windmill-type devices that generate electrical power from wind. Improvements in these devices have resulted in enormous increases in the amount of power a wind turbine can generate, but further advances are needed.

One way to increase the output of wind farms is to create new turbines that have longer rotor blades than previous models had. Data from the European Wind Energy Association show a **25** consistent trend in this direction since the 1980s. The trend is that turbine rotor diameters increase every few years. In the period between

23

- A) NO CHANGE
- B) expanded,
- C) lengthened,
- D) bolstered,

24

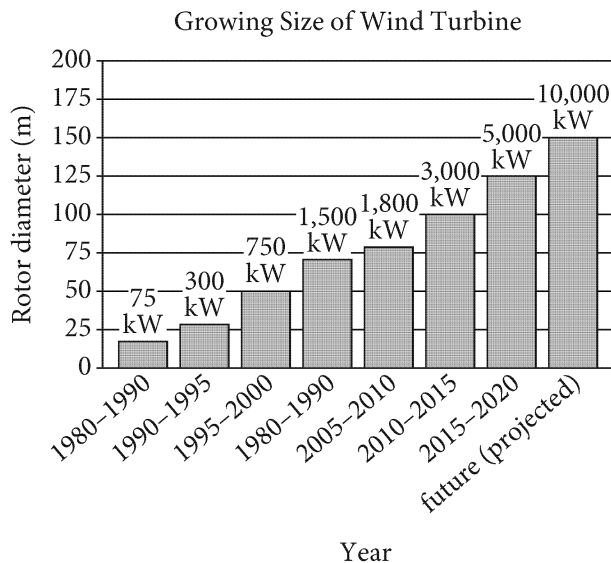
- A) NO CHANGE
- B) Instead,
- C) Finally,
- D) Specifically,

25

Which choice most effectively combines the sentences at the underlined portion?

- A) trend; the trend has been consistently in this direction since the 1980s and has increased turbine rotor diameters every few years.
- B) trend since the 1980s consisting of turbine rotors increasing in diameter in this direction every few years since then.
- C) consistent trend in this direction since the 1980s, with turbine rotor diameters increasing every few years.
- D) consistent trend in turbine rotor diameters where turbine rotor diameters, since the 1980s, increase every few years in this direction.

2010 and 2015, the rotor diameter of new turbines reached **26** 80 meters, several time **27** that of turbines in the 1980s. As rotor blades have gotten longer, power generation has gone up dramatically: a modern turbine can generate up to 5,000 kilowatts of wind power, compared with about **28** 75 kilowatts for one from the 1980s. In the future, oversized wind turbines are projected to generate even more power.



Power rating for each rotor diameter is indicated above the bar.

Adapted from The Pew Charitable Trusts, "Wind Energy Investment Increases Worldwide." ©2015 by The Pew Charitable Trusts. Original source: European Wind Energy Association.

26

Which choice provides accurate information from the graph?

- A) NO CHANGE
- B) 100
- C) 1,800
- D) 3,000

27

- A) NO CHANGE
- B) 1980s turbines.
- C) the number of turbines in the 1980s.
- D) the number of 1980s turbines.

28

Which choice most effectively completes the comparison in the sentence using accurate information from the graph?

- A) NO CHANGE
- B) 300 kilowatts for one from the 1995–2000 time period.
- C) 750 kilowatts for one from the 2000s.
- D) 1,500 kilowatts for one from the 2005–2010 time period.

[1] One engineer who designs the powerful wind turbines of tomorrow is Eric Loth. [2] Although many such engineers work in **29** industry, Loth, whose graduate studies in engineering focused on rotors—is employed by the University of Virginia, where he directs the Fluids Research and Innovation Laboratory. [3] Loth leads a multi-institution group that is developing an innovative type of turbine blade. [4] The group’s concept features hinged, foldable blades modeled on the flexible branches of palm trees, a design that will ensure that **30** branches will not break even when exposed to extremely strong wind gusts. [5] After they have created computerized models and simulations of the turbine and decided how and from which materials to construct the blade segments, the engineers will build a prototype and test it in a Colorado laboratory. [6] “We’re working on the future: extreme-scale wind turbines,” Loth says. **31**

29

- A) NO CHANGE
- B) industry—Loth—
- C) industry; Loth
- D) industry, Loth—

30

- A) NO CHANGE
- B) blades
- C) it
- D) they

31

The writer wants to add the following sentence to this paragraph.

Loth thinks the prototype’s blades alone might be as long as 200 meters, which means that the turbine could produce at least 10,000 kilowatts of wind power—and perhaps even up to 50,000 kilowatts.

The best placement for this sentence is

- A) after sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 5.

Environmentally friendly wind power **32** has become competitive with traditional energy sources such as coal and oil, but it is still comparatively more expensive to **33** generate, larger wind turbines can help close that gap. As a result, the efforts of Loth and others who design and build these turbines are crucial in ensuring the continued growth of the wind power market.

32

- A) NO CHANGE
- B) becomes
- C) had become
- D) will have become

33

- A) NO CHANGE
- B) generate; and larger
- C) generate. Larger
- D) generate larger

Questions 34-44 are based on the following passage.

A Tale of Two Elephants

For decades, elephants were classified into two species, Africa and Asian, and some organizations that work to protect threatened animals still assign all elephants to one of these two groups. **34** Also, several studies conducted since 2001, including one from 2016, **35** is providing evidence that two unique African elephant populations are in fact two distinct species: the savanna elephant and the forest elephant. Conservation organizations should accept the scientific evidence and recognize the differences between the two African elephant species. Doing so will improve the **36** elephants' chances of survival.

34

- A) NO CHANGE
- B) Therefore,
- C) Consequently,
- D) However,

35

- A) NO CHANGE
- B) provides
- C) provide
- D) has provided

36

- A) NO CHANGE
- B) elephants chances
- C) elephant's chance's
- D) elephants' chance's

The evidence for two distinct African elephant species is persuasive. In a 2010 study, a group of scientists led by Nadin Rohland and David Reich obtained **37** elephant DNA samples. They got these samples from an Asian elephant, an African savanna elephant, and an African forest elephant. When Rohland and Reich compared the genome of the savanna elephant to the genome of the forest **38** elephant. They found almost as many differences between these African elephants as they had between the savanna elephant and the Asian elephant. Since African and Asian elephants had long been considered different species, the researchers **39** had concluded that the savanna and forest elephants should be as well.

37

Which choice most effectively combines the sentences at the underlined portion?

- A) DNA samples, which they got
- B) elephant DNA samples
- C) DNA samples
- D) samples of elephant DNA

38

- A) NO CHANGE
- B) elephant, they
- C) elephant; they
- D) elephant they

39

- A) NO CHANGE
- B) conclude
- C) concluded
- D) have concluded

Those who are still unconvinced should look to a 2016 study of the long-extinct straight-tusked elephant species. Paleontologists had assumed that the straight-tusked elephant was an ancestor of the Asian elephant because the elephant's skulls are shaped similarly. But DNA extracted from straight-tusked elephant fossils **40** revealed a different evolutionary history: their DNA sequences were more similar to those of the African forest **41** elephant than to those of: the Asian elephant, or the savanna elephant. This finding supports the division of the African elephants into separate species; **42** furthermore, it suggests that the African forest elephant might even belong to a different genus from that of the African savanna elephant.

40

Which choice most effectively sets up the information in the rest of the paragraph?

- A) NO CHANGE
- B) showed just how long genetic material can be preserved:
- C) demonstrated a new technique for classifying species:
- D) suggested new locations where this extinct species had roamed:

41

- A) NO CHANGE
- B) elephant; than to those of the Asian elephant
- C) elephant, than to those of the Asian elephant,
- D) elephant than to those of the Asian elephant

42

- A) NO CHANGE
- B) nevertheless,
- C) conversely,
- D) otherwise,

Slow to recognize these overwhelming indications, conservation groups **43** still receive billions of dollars in donations each year. If considered separate species, savanna and forest elephants would have population sizes **44** low enough in quantity to allow the animals' conservation status to be changed from "vulnerable" to "endangered." Organizations would also have the ability to address species-specific conservation issues. For example, the forest elephant is facing greater threats to its habitat than the savanna elephant is, threats that need to be tackled through specific management decisions. Conservation groups should acknowledge the findings of the scientific community and take appropriate action before more of these animals disappear.

43

Which choice best establishes the main idea of the paragraph?

- A) NO CHANGE
- B) are limiting their own ability to protect elephants.
- C) have still affected the field of elephant research.
- D) should try to help animals other than elephants.

44

- A) NO CHANGE
- B) that are low enough in quantity.
- C) with quantities low enough.
- D) low enough.

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

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Questions 1-11 are based on the following passage and supplementary material.

Shedding Light on Glowing Coral

Some corals are fluorescent, **1** this means that they absorb one color of light and emit a different one. Scientists have learned that shallow-water corals fluoresce as part of a symbiotic, or mutually beneficial, relationship with algae living inside **2** it. By absorbing potentially harmful ultraviolet light and emitting safer pink or

1

- A) NO CHANGE
- B) which it means
- C) and meaning
- D) meaning

2

- A) NO CHANGE
- B) them.
- C) one.
- D) that.

purple light, fluorescent corals effectively provide a sun block for the **3** algae. The algae produce oxygen and other products that the corals need through photosynthesis. However, this finding does not explain why corals in deeper **4** water; where sunlight is less intense, also fluoresce.

Hoping to shed light on this mystery, a team of marine biologists from England and Israel began studying the chlorophyll (light-absorbing pigments involved in photosynthesis) within symbiotic algae. They exposed a sample of coral to different colors of light, finding that blue light—the most **5** lavish color of light in deep water—only reached chlorophyll close to the surface of the coral. However, red-orange light—the color emitted by deepwater corals—penetrated farther into the coral tissue, reaching more of the chlorophyll inside. The team therefore **6** hypothesized: that deepwater corals' conversion of blue light into red-orange light maximizes photosynthesis in the symbiotic algae, contributing to better overall coral survival.

3

Which choice most effectively combines the sentences at the underlined portion?

- A) algae, which, through photosynthesis, produce oxygen and other products that the corals need.
- B) algae; happening through photosynthesis, the algae's production of oxygen and other products is needed by the corals.
- C) algae, and the corals need oxygen and other products produced by the algae; this happens through photosynthesis.
- D) algae, with the production of oxygen and other products that the corals need coming from the algae's photosynthesis.

4

- A) NO CHANGE
- B) water—
- C) water,
- D) water

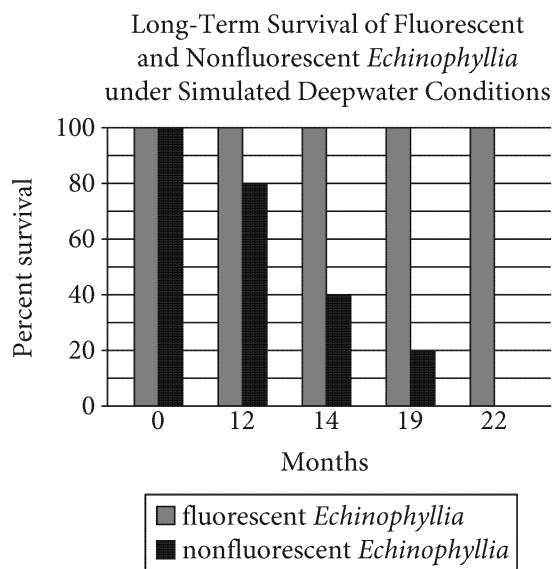
5

- A) NO CHANGE
- B) generous
- C) abundant
- D) overflowing

6

- A) NO CHANGE
- B) hypothesized that,
- C) hypothesized that—
- D) hypothesized that

[1] To test this hypothesis, the research team conducted a two-year experiment that compared the survival of fluorescent and nonfluorescent specimens from the genus *Echinophyllia* under conditions that simulated deepwater light. [2] After 12 months, the fluorescent *Echinophyllia* were **7** deteriorating, but only about 80 percent of the nonfluorescent *Echinophyllia* survived. [3] Around the 19-month mark, the nonfluorescent *Echinophyllia* had dwindled to about **8** 30 percent of their original amount. [4] By 22 months, the nonfluorescent *Echinophyllia* had died off completely, while 100 percent of the fluorescent *Echinophyllia* still lived. [5] These results suggest that the red-orange glow of deepwater corals might indeed be a symbiotic survival mechanism, just like **9** those of corals in shallow waters. **10**



Adapted from Edward G. Smith et al., "Acclimatization of Symbiotic Corals to Mesophotic Light Environments through Wavelength Transformation by Fluorescent Protein Pigments." ©2017 by Edward G. Smith et al.

7

Which choice provides an accurate interpretation of the data in the graph?

- A) NO CHANGE
- B) thriving,
- C) higher in number than they were at the start of the study,
- D) at the lowest percent in the study,

8

Which choice offers accurate information from the graph?

- A) NO CHANGE
- B) 10 percent
- C) 20 percent
- D) 40 percent

9

- A) NO CHANGE
- B) the results of
- C) the sun-blocking glow of
- D) DELETE the underlined portion.

10

The writer wants to add the following sentence to this paragraph.

They began by placing *Echinophyllia* that expressed a red-fluorescent protein and nonfluorescent *Echinophyllia* into an aquarium that was exposed to blue light.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

The researchers hope that their findings can be used to improve coral conservation plans. **11** For example, some plans propose moving threatened shallow-water corals to deep waters, but this study suggests that without the right fluorescent pigments, those corals might not survive relocation. Therefore, as team member Jörg Wiedenmann points out, “it is of [the] utmost importance [that] we do our best to keep their homes in shallow water habitable.”

11

- A) NO CHANGE
- B) Conversely,
- C) Meanwhile,
- D) As a result,

Questions 12-22 are based on the following passage.

Thinking Small and Going Green

In today's marketplace, there is a growing **12** demand for environmentally friendly business practices. According to a 2009 survey by the Boston Consulting Group, 73 percent of consumers think it is important for companies to have good environmental records. **13** Though there is limited evidence that greening initiatives increase employee morale, small businesses also stand to gain by going green: a 2014 University of Arkansas study found that the benefits of environmental initiatives were actually higher for small businesses **14** than for Fortune 500 companies. Measures to reduce resource consumption can help small businesses both directly, by lowering costs and raising revenues, and indirectly, by attracting new customers and even employees.

12

- A) NO CHANGE
- B) demand, for
- C) demand; for
- D) demand for

13

At this point, the writer wants to present an argument that will be refuted in the next part of the sentence. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) Despite the incentives offered by the federal government for the use of renewable energy,
- C) While some claim that only large corporations can afford to invest in eco-minded initiatives,
- D) As companies and individuals become increasingly concerned about dwindling natural resources,

14

- A) NO CHANGE
- B) than the initiatives of
- C) compared to the benefits of
- D) than

15 Founded in 1976, AJ's Auto Repair is a shop that has succeeded in improving its bottom line through an eco-friendly approach. By burning used oil for heat instead of **16** chucking it out, the company saves up to \$10,000 per year. Indeed, AJ's **17** has saved a total of more than \$200,000 over a ten-year period from its greening efforts. Moreover, the AJ's example shows that companies can actually make money while generating less waste. AJ's recently participated in a program that provided environmentally safe trunk light switches to customers. The first ninety people who came in for a free switch replacement ended up spending over \$26,000 in other repairs.

15

Which choice provides the most effective transition from the previous paragraph?

- A) NO CHANGE
- B) Servicing motor homes as well as cars, AJ's Auto Repair
- C) With a staff of about fifteen people, AJ's Auto Repair
- D) One such business, AJ's Auto Repair in Salem, Oregon,

16

Which choice best maintains the tone and style of the passage?

- A) NO CHANGE
- B) junking it,
- C) disposing of it,
- D) tossing it out,

17

- A) NO CHANGE
- B) has saved
- C) savings have exceeded
- D) total savings have been

Another small business that has made sustainability profitable is Transcendentist, a dental practice in Berkeley, California. While most dental offices rely on wasteful disposable products, **18** Transcendentist, however, introduced a line of reusable supplies, including cotton cloth headrests. Not only does Transcendentist save money by cutting spending on disposable products, it also profits by selling its reusable products to dentists across the country.

Green initiatives also strengthen a company's image, **19** which can yield tangible benefits. The founder of AJ's, Bob **20** Anderson estimates, that the company's

18

- A) NO CHANGE
- B) but Transcendentist
- C) whereas Transcendentist
- D) Transcendentist

19

Which choice results in the most effective transition to the next sentence?

- A) NO CHANGE
- B) rewarding the company's loyal customers.
- C) although image isn't everything.
- D) a key component in attracting new employees.

20

- A) NO CHANGE
- B) Anderson, estimates
- C) Anderson, estimates:
- D) Anderson estimates

green reputation has increased its customer base by at least 18 percent. **21** Anderson ensures that the company stays in compliance with government regulations.

Companies with eco-friendly practices appeal not only to environmentally conscious clientele but also to

22 perspective employees: according to a recent MonsterTRAK poll, 92 percent of young professionals desire to work at companies perceived as environmentally mindful. In an economy where companies can no longer afford to ignore their environmental footprints, cutting down on resource use is a feasible, and ultimately profitable, step.

21

Which choice provides a second example that is most similar to the one in the previous sentence?

- A) NO CHANGE
- B) In yet another example of their commitment to efficiency, Anderson and his team incorporated oil tanks into workbenches to save space.
- C) Some local chambers of commerce offer free greening assistance to small-business owners.
- D) Transcendentist attracts up to forty new clients per month, thanks in part to media attention for its green initiatives.

22

- A) NO CHANGE
- B) respective
- C) prospective
- D) receptive

Questions 23-33 are based on the following passage.

Storied Architecture

A survey of the buildings designed by Ghanaian British architect David Adjaye reveals no obvious signature style. His Moscow School of Management Skolkovo in Russia features a two-story, 150-meter-wide circular base, on top of which **23** is placed four differently sized rectangular prisms tiled in uneven herringbone patterns of transparent and colored glass panels. Perhaps more accurately described as a complex of buildings than as a single building, the structure looks as though someone has balanced giant mismatched blocks on top of a disk. Another of Adjaye's projects, the Francis A. Gregory Neighborhood Library in Washington, DC, features exterior walls that **24** resemble a tilted checkerboard, alternating clear and opaque squares create a geometric diamond pattern. And in Doha, Qatar, a nondescript residence blends in with surrounding monochrome beige stone structures. Each of these designs is distinctive in that no particular texture, material, shape, or pattern identifies the building as one of Adjaye's.

23

- A) NO CHANGE
- B) there is
- C) are
- D) is

24

- A) NO CHANGE
- B) resemble a tilted checkerboard,
- C) resemble a tilted checkerboard
- D) resemble a tilted checkerboard:

25 Adjaye's architecture firm is staffed with professionals who represent a wide range of architectural perspectives. For each project, Adjaye **26** reviews extensive research about the locale where the building will be constructed. He **27** considers the local governing structure and issues of social justice. Various databases provide him with relevant geologic information. Adjaye also studies the history of the site and of the people who will be using the building. So central is this research to **28** Adjaye's design process's that his architecture firm employs a team of social scientists.

25

Which choice most effectively establishes the main topic of the paragraph?

- A) NO CHANGE
- B) Some architecture experts have suggested there may be recurring trends—for example, the way Adjaye uses walls not only to divide but also to create spaces for public interaction.
- C) Given that Adjaye will likely design more buildings over the course of his career, it's possible—even probable—that a signature style will still emerge.
- D) What is common to Adjaye's buildings is something that can't be seen—a deeply research-focused design process.

26

- A) NO CHANGE
- B) reviews and examines lots of extensive
- C) reviews a lot of extensive
- D) examines and reviews

27

- A) NO CHANGE
- B) had considered
- C) is considering
- D) did consider

28

- A) NO CHANGE
- B) Adjaye's design process
- C) Adjaye's design process
- D) Adjaye's design process

This research process can inform Adjaye's designs in any number of ways. In the case of Adjaye's design for the Smithsonian National Museum of African American History and Culture, the research strongly influenced the shape of the building. While trying to better understand the story the museum would be telling, Adjaye had become fascinated with traditional sculptures made by Yoruba craftspeople of western Africa. **29** By contrast, one type of headwear that recurred in the figures **30** captured Adjaye's imagination. The structure of this headwear—three inverted pyramids nested one atop the other—became the shape of the museum. **31**

29

- A) NO CHANGE
- B) For these reasons,
- C) In particular,
- D) Moreover,

30

Which choice most effectively combines the sentences at the underlined portion?

- A) captured Adjaye's imagination, and then the headwear's structure—
- B) captured Adjaye's imagination as the structure of the headwear—
- C) so captured Adjaye's imagination that its structure—
- D) capturing Adjaye's imagination, the structure of it—

31

At this point, the writer wants to reinforce the main point being made in the paragraph with a quotation from Adjaye. Which of the following quotations from a lecture Adjaye gave in 2016 best accomplishes this goal?

- A) "This museum," Adjaye says, "comes into being after . . . a two-hundred-year quest to have a museum for—to really talk about the contribution of the African American community to the identity of America."
- B) Adjaye stated that he had wanted "to see if we could create a museum where the figure and the form of the museum spoke to the story from the silhouette—from the immediate perception of it."
- C) According to Adjaye, "We started with the Yoruba in West Africa because, essentially, the Yoruba were the greatest craftsmen."
- D) In describing the museum, Adjaye makes the distinction that "it's a narrative museum, so it's not about precious objects."

Other architects, of course, conduct and rely on research when they design buildings, **32** but Adjaye's body of work has been defined by it. **33** Whether or not you like Adjaye's buildings, you have to admit that they're interesting to look at.

32

- A) NO CHANGE
- B) however,
- C) nonetheless,
- D) DELETE the underlined portion.

33

Which choice results in the most effective conclusion for the passage?

- A) NO CHANGE
- B) Because of this process, each building tells a unique story—if not about Adjaye's aesthetic style, then about the place in which, and the people for whom, it is built.
- C) In his career thus far, Adjaye has provided us with many spectacular buildings—each of which has some very interesting features and puts on display his considerable talent as an architect.
- D) Architecture firms that don't include a similar research-based approach would do well to consider implementing one.

Questions 34-44 are based on the following passage.

A Voice from the Ancient Past

Though few people today have heard of her, a woman named Enheduanna is believed to be the world's earliest known writer. She held the **34** important political role of high priestess in Mesopotamia's first major empire (near present-day Iraq and Kuwait) in the twenty-third century BCE. Preserved in ancient artifacts, her writings include clear uses of rhetorical devices—strategies used to effectively communicate an idea or opinion to an audience. The discovery of these artifacts has led scholars to reevaluate the popular notion that **35** the gods and goddesses of the Mesopotamian empire were similar to those of the ancient Greeks.

Researchers suggest that Enheduanna's writings contain clear examples of establishing ethos, a rhetorical strategy through which authors persuade an audience of their credibility. **36** The importance of religion to the Mesopotamians is reflected in a calcite disk dated to around 2300 BCE, discovered in 1926 when a British archaeologist was excavating the temple of Ur. The disk's front contains an inscribed image that depicts Enheduanna overseeing a religious **37** procession, the back includes her written dedication of the artifact to Nanna, the god of the moon. By authoring the dedication (and through the disk's visual representation of her power), she announces her authority to those who might see the disk, and she asserts her devotion to Nanna.

34

- A) NO CHANGE
- B) significantly important political role
- C) position of an important political role
- D) significant political role and position

35

Which choice most effectively sets up the main idea of the passage?

- A) NO CHANGE
- B) the study of rhetoric's history should start with the ancient Greeks, who lived 2,000 years after Enheduanna.
- C) the very earliest forms of writing were developed as a means to keep records of grain and cattle transactions.
- D) Enheduanna was the daughter of Sargon of Akkad, a king who conquered and ruled over the Sumerian city-states.

36

Which choice provides the most effective transition from the previous sentence to the information that follows in the paragraph?

- A) NO CHANGE
- B) On display in the Penn Museum's Middle East Galleries is
- C) The earliest example of such writing can be found in
- D) An ancient political conflict probably led someone to break

37

- A) NO CHANGE
- B) procession; and,
- C) procession;
- D) procession

[1] Enheduanna's many hymns also incorporate rhetorical devices. [2] One of her most famous is "The Exaltation of Inanna," which tells the story of a political uprising that temporarily ended Enheduanna's role as high priestess. [3] Later, she directly asks the goddess Inanna to **38** give her back her old job, referring to their personal relationship: "Might your heart not be appeased towards me? . . . great exalted lady, I have recited this song for you." [4] Scholars suggest that the use of first person again establishes ethos because she is identifying herself **39** to, gods and mortals alike, as the author of this "song." [5] When she describes her political exile, she writes, "I approached that shade, but I was covered with a storm." [6] In addition, as researcher Roberta Binkley points out, her appeal to the **40** sympathies of Inanna and her readers when describing her difficult situation **41** have shown pathos, the rhetorical strategy of persuasion using emotion. **42**

38

- A) NO CHANGE
- B) let her have some clout again,
- C) revive her hegemony,
- D) restore her to power,

39

- A) NO CHANGE
- B) to gods and mortals alike
- C) to gods, and mortals alike
- D) to gods and mortals alike,

40

- A) NO CHANGE
- B) sympathies' of Inanna and her readers
- C) sympathies' of Inanna and her readers'
- D) sympathies of Inanna and her reader's

41

- A) NO CHANGE
- B) show
- C) shows
- D) are showing

42

To make this paragraph most logical, sentence 5 should be placed

- A) where it is now.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 6.

Although writers throughout history **43** will be applying rhetorical techniques to express opinions, scholars typically associate the origins of devices such as ethos and pathos with ancient Greece, **44** especially since Greek philosopher Aristotle coined the terms. Today, analysis of Enheduanna's writing is influencing how scholars think about effective communication and adds to their understanding of how rhetoric emerged.

43

- A) NO CHANGE
- B) are applying
- C) can apply
- D) have applied

44

The writer is considering deleting the underlined portion, adjusting the punctuation as needed. Should the underlined portion be kept or deleted?

- A) Kept, because it provides a connection to the information about the Mesopotamian empire given in the first paragraph.
- B) Kept, because it explains why certain rhetorical devices are thought to have originated in ancient Greece.
- C) Deleted, because it fails to explain how ancient Greeks used rhetorical devices.
- D) Deleted, because it provides a detail about rhetorical devices that is unrelated to the paragraph's main focus.

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Questions 1-11 are based on the following passage.

Wish Upon a Tree

Strolling down a stone path surrounded by Japanese dogwood trees, visitors to the Smithsonian Institution’s Hirshhorn Museum and Sculpture Garden might notice hundreds of paper tags **1** gently swaying from the Japanese dogwood trees’ branches. These pieces of

1

- A) NO CHANGE
- B) gently blowing and swaying from the branches of the trees.
- C) swaying gently from the tree branches.
- D) or pieces of paper that sway gently from the tree branches.

2 paper—a favorite installation with Hirshhorn patrons—decorate the trees every year from July 1 through Labor Day. Entitled *Wish Tree for Washington, DC*, this exhibit was the brainchild of Yoko Ono, an artist and musician who has spent decades creating interactive art—art designed to encourage and incorporate the participation of its viewers—as a platform for peace.

For her *Wish Trees* series, **3** which is perhaps her best-known interactive project; Ono was inspired by the temple courtyards she visited as a child in Japan, where people could write wishes on small paper tags and then tie them to trees. Ono once compared the stunning visual result to “white flowers blossoming from afar.” **4** Often using everyday items to create her art, she created *Wish Trees*, an ongoing project that showcases trees and invites visitors to write and attach their own wishes to the branches. By encouraging people to reflect on their aspirations and to **5** attribute to a large, collective project, Ono believes *Wish Trees* will promote global harmony.

2

Which choice most effectively establishes one of the main ideas of the passage?

- A) NO CHANGE
- B) paper are secured to the trees with strong cotton string to prevent them from blowing away.
- C) paper are exposed to the elements, but they are still for the most part intact and legible.
- D) paper, though light, bear something truly weighty—the hopes and dreams of museum patrons.

3

- A) NO CHANGE
- B) perhaps her best-known interactive project,
- C) it was perhaps her best-known interactive project,
- D) perhaps her best-known interactive project and

4

Which choice provides the best transition from the first two sentences of the paragraph?

- A) NO CHANGE
- B) Having left Japan after the Second World War,
- C) To bring this experience to more people,
- D) In between her many other artistic endeavors,

5

- A) NO CHANGE
- B) attribute by
- C) contribute by
- D) contribute to

[1] Ono's trees have been shown in museums around the world, with each exhibit featuring tree species—typically indigenous ones—selected to complement the venue. [2] The exhibits have proved very **6** popular, in fact more than a million wishes have been written over the past ten years. [3] Visitors have filled tags with diverse hopes, ranging from goals for **7** its families to desires for “equality, respect and fair opportunity for all.” [4] In addition to museum installations, Ono has provided instructions for schools, **8** workplaces, and communities that are interested in creating their own wish trees, further expanding the interactivity of the project. **9**

6

- A) NO CHANGE
- B) popular—in fact—
- C) popular; in fact,
- D) popular in fact,

7

- A) NO CHANGE
- B) one's
- C) their
- D) his

8

- A) NO CHANGE
- B) working, and in communities
- C) at work, and people in communities
- D) workplaces, and to be a community

9

The writer wants to add the following sentence to this paragraph.

A *Wish Tree* exhibit at the Museum of Contemporary Art in Sydney, Australia, for instance, used six lemon-scented eucalyptus trees, which are native to the continent.

The best placement for the sentence is

- A) after sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

Once an exhibit ends or a tree becomes full, the wish tags are collected and then deposited in capsules at the base of the *Imagine Peace Tower* on Viðey Island, near Reykjavík, Iceland. **10** The tower was also designed by Ono. Ono's tower is a beam of light that shines each winter from a base carved of stone into the aurora-graced Icelandic night. Radiating symbolically from a well of wishes, the tower is a reminder of **11** Ono's international reputation: "A dream you dream alone is only a dream. A dream you dream together is reality."

10

Which choice most effectively combines the sentences at the underlined portion?

- A) The tower was also an Ono design; additionally, it
- B) Although also an Ono design, the tower
- C) Ono also designed the tower, and the tower
- D) The tower, which Ono also designed,

11

Which choice most effectively sets up the quotation at the end of the sentence?

- A) NO CHANGE
- B) Ono's own wish for world peace:
- C) Iceland's commitment to green energy:
- D) *Wish Trees*' popularity in museums:

Questions 12-22 are based on the following passage.

The Hubble Deep Field

The Hubble Space Telescope (HST) was launched in 1990 to provide researchers with views of the universe undiminished by interference from Earth's atmosphere. After a misshapen mirror was fixed, the HST began returning clear, breathtaking images that greatly advanced scientific understanding of the known universe. However, the director of the Space Telescope Science Institute, Bob Williams, suspected that the HST **12** needed a boost in public opinion; he thought it might be used to study the farthest reaches of space and answer fundamental questions about the history of the universe.

At the time, no one knew exactly how far the HST could see into space. Williams wanted to test the **13** telescopes' capabilities by directing it at a part of the sky with no known objects and recording images over an extended period. Successfully detecting far-off galaxies, those billions of light-years away, would allow scientists to see these objects as they were billions of years ago.

14 However, with ongoing observation scientists could also determine how galaxies changed as time passed.

12

Which choice most effectively sets up the information that follows in the sentence?

- A) NO CHANGE
- B) would operate successfully for years:
- C) lacked sufficient funding:
- D) could do more:

13

- A) NO CHANGE
- B) telescope's capability's
- C) telescope's capabilities
- D) telescopes capabilities

14

- A) NO CHANGE
- B) Nonetheless,
- C) Furthermore,
- D) Regardless,

Some of Williams's colleagues thought that it was unwise to spend so many hours trying to look into seemingly empty space. They argued that Williams should use his observation time for other projects. These scientists were concerned that the study **15** will show only the telescope's limitations—that is, what it could not do. **16** "I had 10 percent of the telescope time," Williams said later as he recalled the experience. He vowed that he would resign from his position if the effort proved **17** as an embarrassment.

15

- A) NO CHANGE
- B) had shown
- C) showed
- D) would show

16

Which quotation from Williams provides the most effective support for the point the writer is making in this paragraph?

- A) NO CHANGE
- B) "Scientific discovery requires risk,"
- C) "It turned out to be a neat image,"
- D) "You do the same thing if you're trying to understand the geology of the Earth,"

17

- A) NO CHANGE
- B) being
- C) to be
- D) as being

Williams assembled a small team of researchers and conducted his study for 10 days in December 1995. Under his supervision, the HST focused on a small patch of sky for a **18** total of 100 hours and captured hundreds of images. The researchers then processed and combined the images into a composite **19** picture. They called the composite picture the Hubble Deep Field (HDF). As it turned out, the HDF significantly reshaped scientific understanding of the universe. It showed an area filled with galaxies—more than 3,000—and it prompted scientists to change their estimate of the number of galaxies in the universe from 10 billion to 50 billion. Some of the galaxies were as much as 12 billion years old. **20** There colors, shapes, and other attributes provided scientists with insights into what galaxies were like at a much earlier stage in the history of the universe.

18

- A) NO CHANGE
- B) sum total equaling
- C) total that equaled
- D) sum, or total, of

19

Which choice most effectively combines the sentences at the underlined portion?

- A) picture that they called
- B) picture, but they called it
- C) picture; thus, they called it
- D) picture, and they then called it

20

- A) NO CHANGE
- B) Their
- C) They're
- D) Its

The HDF was a major breakthrough in astronomy, illuminating the early history of the universe and helping astronomers construct a more complete picture of how **21** do galaxies evolve over time? Williams's gamble had paid off, and **22** the whole community of scientists who study space, even those who were initially skeptical, shared in the reward.

21

- A) NO CHANGE
- B) do galaxies evolve over time.
- C) galaxies evolve over time.
- D) galaxies evolve over time?

22

The writer wants a conclusion that links the success of Williams's work back to a discussion earlier in the passage. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) he still left many more mysteries of space for his colleagues to discover.
- C) the HST's successor, the James Webb Space Telescope, will carry on the HST's mission.
- D) Williams went on to facilitate a groundbreaking study of the universe's expansion—which earned the participating teams the 2011 Nobel Prize in physics.

Questions 23-33 are based on the following passage and supplementary material.

Identity Marketing

One proven way for marketers to appeal to a target audience is through identity marketing: advertisements that demonstrate the fit between a product and the audience's sense of **23** identity, traditional wisdom holds that the more directly an advertisement connects a product to a particular identity, the more effective that advertisement will be with consumers who share that identity. However, recent evidence suggests that direct identity marketing may no longer be as effective as it once was.

A team of researchers led by marketing professor Amit Bhattacharjee conducted a study of different types of identity-marketing messages. The study included both "green" **24** consumers, people whose purchases are especially influenced by the perceived environmental friendliness of a product, and neutral consumers. The researchers divided the participants into three **25** groups. The researchers also showed each of the three groups a different advertising message for a cleaning product, Charlie's Soap. One message proclaimed that

23

- A) NO CHANGE
- B) identity. Traditional
- C) identity, so traditional
- D) identity and traditional

24

- A) NO CHANGE
- B) consumers: people whose purchases are especially influenced by the perceived environmental friendliness of a product,
- C) consumers, people whose purchases are especially influenced by the perceived environmental friendliness of a product;
- D) consumers people whose purchases are especially influenced by the perceived environmental friendliness of a product,

25

Which choice most effectively combines the sentences at the underlying portion?

- A) groups, with the researchers showing each of these three groups
- B) groups and showed each group
- C) groups; each group would also be shown
- D) groups, and the researchers showed each of the groups

the product was necessary for those who think of

26 ourselves as green (“Charlie’s: The only good choice for green consumers!”), while another message indicated that the product was an attractive option for that group (“Charlie’s: A good choice for green consumers”). A control message was also used (“Charlie’s: A good choice for consumers”). The researchers then **27** asked, the participants to rate, on a scale of 1 to 7 their likelihood of purchasing the product, with 1 indicating that they were “not at all likely” and 7 that they were “very likely” to do so. At the same time, **28** a group of marketing executives was simultaneously asked which message would be most effective with the target group.

26

- A) NO CHANGE
- B) themselves
- C) himself or herself
- D) oneself

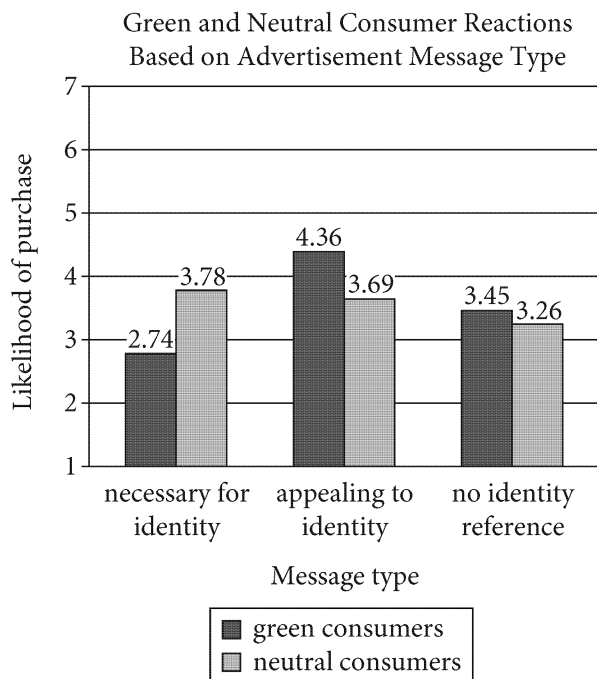
27

- A) NO CHANGE
- B) asked the participants to rate on a scale of 1 to 7,
- C) asked the participants: to rate on a scale of 1 to 7
- D) asked the participants to rate on a scale of 1 to 7

28

- A) NO CHANGE
- B) while the target group was asked the same thing, a group of marketing executives was asked
- C) a group of marketing executives was collectively all asked together
- D) a group of marketing executives was asked

The results of the study **29** suggest that the marketing executives **30** have discovered an effective new strategy. The message **31** least effective with neutral-identity consumers, with an average likelihood rating of 4.36, was the one that appealed to their identity without insisting that the product was necessary for them: “Charlie’s: A good choice for green consumers.” **32** As a result, the lowest average rating in the study, 2.74, was assigned by green-identity consumers to the message that the marketing executives had rated the highest: “Charlie’s: The only good choice for green consumers!”



Adapted from Amit Bhattacharjee et al., “When Identity Marketing Backfires: Consumer Agency in Identity Expression.” ©2014 by Journal of Consumer Research, Inc.

29

- A) NO CHANGE
- B) is suggesting
- C) suggests
- D) has suggested

30

Which choice provides the best interpretation of the data in the study?

- A) NO CHANGE
- B) are following an outdated paradigm.
- C) have been highly successful with identity marketing.
- D) are creating an efficient model for market testing.

31

Which choice provides accurate information from the graph?

- A) NO CHANGE
- B) most effective with neutral-identity
- C) least effective with green-identity
- D) most effective with green-identity

32

- A) NO CHANGE
- B) Similarly,
- C) In contrast,
- D) Nevertheless,

In conclusion, while consumers do seem to favor products that claim to fit with their identity, messages that boast of a product's superior link to a group identity seem to turn off the very group to which they were designed to appeal. To continue being successful, marketers will need to take these findings into consideration and **33** aim for more direct appeals to consumer tastes.

33

Which choice provides the most effective conclusion to the passage?

- A) NO CHANGE
- B) target specific consumer identities for their advertisements.
- C) experiment with more nuanced appeals to consumer identity.
- D) direct various types of advertisements at neutral consumers.

Questions 34-44 are based on the following passage.

The Sky Is the Limit

Until the 1960s, buildings of more than thirty stories were **34** mainly found in North America. The thick interior columns and walls necessary to fortify these buildings against forces such as powerful winds and earthquakes reduced the amount of rentable floor space. Moreover, taller **35** buildings requiring additional concrete and steel to resist increased lateral (side-to-side) forces, and the high cost of these materials often deterred development. To address these challenges, Bangladeshi American engineer and **36** architect, Fazlur Rahman Khan developed novel forms of structural tubing, **37** which were later used in the Willis Tower in Chicago.

34

Which choice most effectively introduces the paragraph?

- A) NO CHANGE
- B) constructed of concrete and steel.
- C) inefficient for developers to build.
- D) used for residential and business purposes.

35

- A) NO CHANGE
- B) buildings required
- C) buildings, which required
- D) buildings that were requiring

36

- A) NO CHANGE
- B) architect—Fazlur Rahman Khan
- C) architect Fazlur Rahman Khan,
- D) architect Fazlur Rahman Khan

37

Which choice most effectively sets up the main idea of the passage?

- A) NO CHANGE
- B) gaining admiration at the Chicago firm that hired him.
- C) giving rise to a new era in urban architecture.
- D) eventually becoming a groundbreaker in computer-aided design as well.

Metropolitan population growth in the 1950s encouraged the construction of tall structures to house people and support growing businesses. Khan realized that if a building's exterior walls could be made to bear more weight and withstand lateral forces more effectively than they traditionally had, the result would be a taller, safer, and more cost-effective building. Khan applied this idea to his 1961 design for Chicago's Brunswick Building, which contains a shear-wall core and an exterior frame of closely spaced columns. With support at both the center and perimeter, **38** this "tube-within-a-tube" layout could resist strong winds and reduce the need for space-consuming columns to be placed throughout the floor plan.

Realizing the advantages of the tube structure, Khan developed the "bundled tube" system. Chicago's Willis Tower, designed by Khan, **39** was originally intended to be only seventy stories tall. Instead of being a single rectangular tower, the building is composed of nine square tubes of varying **40** heights and resulting in a multileveled structure with the two tallest tubes surrounded by progressively shorter ones. The tubes are structurally sound on their **41** own. However, those tubes get added stability from the bundled structure that connects the tubes in the lower fifty stories. This design allows the building to retain its lateral strength and to use steel more economically; in fact, the Willis Tower contains about as much steel as do shorter structures built at that time. Opening in 1973 at 110 stories, it was the world's tallest building for more than two decades.

38

- A) NO CHANGE
- B) strong winds could be resisted by this "tube-within-a-tube" layout, reducing
- C) resistance to strong winds could result from this "tube-within-a-tube" layout, thereby reducing
- D) there could be resistance to strong winds by this "tube-within-a-tube" layout and a reduction in

39

Which choice most effectively establishes the main topic of the paragraph?

- A) NO CHANGE
- B) is one of the most renowned landmarks to feature this system.
- C) took three years and over \$175 million dollars to build.
- D) is an iconic structure that many still refer to as the Sears Tower.

40

- A) NO CHANGE
- B) heights, while it results
- C) heights, which it results
- D) heights, resulting

41

Which choice most effectively combines the sentences at the underlined portion?

- A) own, but the bundled structure creates added stability by connecting the tubes
- B) own; added stability is created through the bundled structure, which connects those tubes
- C) own, with the bundled structure creating added stability due to the connection of the tubes
- D) own; however, stability is added because the structure is bundled, which involves the tubes being connected

[1] Once buildings had demonstrated the effectiveness of tubular designs, engineers and architects were free to imagine even loftier projects. [2] The result was **42** an inflation of extremely tall buildings.

[3] Structures such as the 163-floor skyscraper Burj Khalifa, completed in 2010 by the engineering firm with which Khan worked, **43** continues to pay homage to the person who heralded the modern age of the skyscraper.

[4] The fact that this record did not endure is a testament to the success of Khan's design. **44**

42

- A) NO CHANGE
- B) an amplification
- C) a proliferation
- D) a dissemination

43

- A) NO CHANGE
- B) has continued
- C) is continuing
- D) continue

44

To make this paragraph most logical, sentence 4 should be placed

- A) where it is now.
- B) before sentence 1.
- C) before sentence 2.
- D) before sentence 3.

STOP

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

**AUGUST 28, 2021
US**

The SAT®

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

Some questions will direct you to an underlined portion of a passage. Other questions will direct you to a location in a passage or ask you to think about the passage as a whole.

After reading each passage, choose the answer to each question that most effectively improves the quality of writing in the passage or that makes the passage conform to the conventions of standard written English. Many questions include a “NO CHANGE” option. Choose that option if you think the best choice is to leave the relevant portion of the passage as it is.

Questions 1-11 are based on the following passage.

Dorothy Porter Wesley’s Stewardship of History

From **1** it’s beginnings as a small liberal arts college in 1867, Howard University in Washington, DC, has become one of the most respected research institutions in the United States. **2** Therefore, a cornerstone of Howard’s reputation is the Moorland-Spingarn Research

1

- A) NO CHANGE
- B) its
- C) there
- D) they’re

2

- A) NO CHANGE
- B) Next,
- C) Otherwise,
- D) DELETE the underlined portion, adjusting the capitalization as needed.

Center (MSRC). Part of the university's library, the MSRC **3** is still working toward expanding the online catalogue to include materials obtained before 2003.

However, it would not be what it is today without the four-decades-long dedication of Dorothy Porter Wesley, the curator of the MSRC's predecessor, the Moorland Foundation.

One of Wesley's main goals as curator **4** were to make the holdings of the Moorland Foundation accessible to students and scholars. When she began to develop the foundation's collection in 1930, she found that many of the items she would add to it were difficult to locate in Howard's library. The Dewey Decimal System—which **5** US libraries have used since the nineteenth century to catalogue their contents—did not have accurate categories to track Howard's diverse holdings of African and African American texts and

3

Which choice best supports the information provided earlier in the paragraph and sets up the passage's main discussion?

- A) NO CHANGE
- B) acquired rare books dating all the way back to the sixteenth century from two prominent bibliophiles.
- C) contains more than two hundred thousand works on African and African American history and culture.
- D) prohibits the use of cameras or scanners and allows reproduction of materials only by permission.

4

- A) NO CHANGE
- B) are
- C) have been
- D) was

5

Which choice provides the most relevant detail?

- A) NO CHANGE
- B) places natural science and mathematics in the 500–519 range—
- C) is sometimes supplemented by numbers from the Cutter-Sanborn Tables—
- D) is named after American librarian Melvil Dewey, who created it for Amherst College—

artifacts. Wesley expanded those categories so that library patrons **6** retrieve items more efficiently. Among the most significant holdings that Wesley organized were **7** philanthropist Dr. Jesse E. Moorland's 1914 donation of three thousand items documenting African American history and experience and newspapers, pamphlets, and letters bequeathed by abolitionist Lewis Tappan.

Recognizing the importance of maintaining an archive of these and other historical artifacts for study, Wesley continuously expanded the collection. She wrote to universities, individual collectors, and government agencies to request materials, at times **8** on occasion buying items using her own money. In 1946, **9** Wesley acquired the contents of the private library belonging to Arthur Spingarn. Spingarn was a social activist, and the acquisition enlarged the Moorland Foundation's geographic and linguistic scope. Spingarn's collection contained works by native African writers and writers of African descent from Haiti, Cuba, and South America who were largely unknown to American scholars. Spingarn's materials also consisted of works written in African languages such as Swahili and Xhosa.

6

- A) NO CHANGE
- B) could retrieve
- C) will retrieve
- D) have retrieved

7

- A) NO CHANGE
- B) philanthropist, Dr. Jesse E. Moorland's 1914 donation
- C) philanthropist Dr. Jesse E. Moorland's 1914 donation,
- D) philanthropist, Dr. Jesse E. Moorland's 1914 donation,

8

- A) NO CHANGE
- B) occasionally buying items with
- C) buying items with
- D) buying items sometimes using

9

Which choice most effectively combines the sentences at the underlined portion?

- A) acquiring the private library contents of a social activist named Arthur Spingarn, Wesley helped enlarge
- B) Wesley acquired the contents of social activist Arthur Spingarn's private library, thus enlarging
- C) in acquiring the contents of the private library of Arthur Spingarn, a social activist, Wesley was helping enlarge
- D) Wesley's acquisition of a private library's contents, which belonged to social activist Arthur Spingarn, led to the enlargement of

10 With the addition of the Spingarn collection,

Wesley helped make the Moorland Foundation the largest research center in the United States at the time for the study of materials documenting African and African American life and history. To these works she added her own scholarship, 11 it includes bibliographies of African American literature that continue to serve as vital research tools. Today, scholars from around the world are drawn to the MSRC and the wealth of information that Wesley preserved there.

10

Which choice provides the most effective transition from the previous paragraph?

- A) NO CHANGE
- B) By adapting the Dewey Decimal System,
- C) Aware that Spingarn was both a lawyer and a historian,
- D) Earning honorary PhD degrees from Susquehanna University, Syracuse University, and Radcliffe College,

11

- A) NO CHANGE
- B) which includes
- C) to be including
- D) and including

Questions 12-22 are based on the following passage and supplementary material.

A Flexible Approach to Flight

[1] Since the Wright brothers' first flight, aviators have faced the engineering challenge of controlling roll, which is used to turn an aircraft and is experienced by

12 passengers as a tilting to the left or the right.

[2] Today, pilots initiate roll by raising or lowering ailerons, the hinged surfaces on the trailing edge of each wing. [3] Instead, the brothers devised a system of

13 pulley's and cable's to create "wing warping," a reshaping of the wing inspired by Wilbur Wright's twisting of a cardboard box. [4] Recently, a team of engineers from MIT and NASA demonstrated a shape-changing wing that initiates roll by twisting along its entire span. [5] Their design uses innovative materials and structural design to create improved performance and efficiency along with significant cost savings. **14**

12

- A) NO CHANGE
- B) passengers as:
- C) passengers, as
- D) passengers—as

13

- A) NO CHANGE
- B) pulleys and cables
- C) pulleys' and cables'
- D) pulleys and cable's

14

The writer wants to add the following sentence to this paragraph.

The 1903 Wright Flyer did not have ailerons, however.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

The flexible wing relies on what its designers call a “digital cellular composite system.” A strong and stiff but lightweight material, carbon fiber–reinforced polymer, is shaped into tiny components that **15** combine to form intricate lattice-like geometric structures composed of flat surfaces. These structures include cuboct cells, which are tightly interwoven assemblies highly resistant to **16** either bending and twisting, and Kelvin cells, which are simpler arrangements that bend and twist more

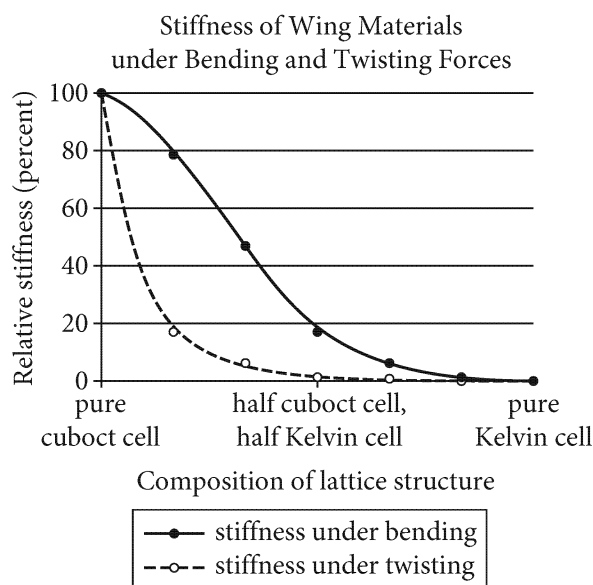
15

- A) NO CHANGE
- B) combine together and thus form
- C) combine, joining to form
- D) combine to form and make up

16

- A) NO CHANGE
- B) both bending or
- C) bending nor
- D) both bending and

easily. The researchers found that by combining cuboct cells with Kelvin cells in different proportions, they could **17** create consistent levels of stiffness regardless of the type of force applied. For instance, the material that was made of half cuboct cells and half Kelvin cells showed **18** more than 80 percent of the resistance to bending and almost none of the resistance to twisting that characterized the pure cuboct design. Using these geometric patterns in different arrangements allows the engineers to fine-tune the reshaping of the wing—to bend and twist it in different ways at different points along its length—with the power of two small servo motors in the wingtips. The team tested the morphing wing in a wind **19** tunnel and finding that it achieved aerodynamic qualities equal to **20** that of rigid-wing aircraft at a fraction of the weight.



Adapted from Benjamin Jenett et al., "Digital Morphing Wing: Active Wing Shaping Concept Using Composite Lattice-Based Cellular Structures." ©2017 by Benjamin Jenett et al.

17

Which choice provides an accurate interpretation of the data in the graph?

- A) NO CHANGE
- B) achieve different levels of stiffness in response to different types of force.
- C) force materials made entirely of cuboct cells to become very conducive to twisting.
- D) bend materials made only of cuboct cells more than they could bend materials made only of Kelvin cells.

18

Which choice presents accurate information from the graph?

- A) NO CHANGE
- B) exactly 40 percent
- C) less than 20 percent
- D) exactly 5 percent

19

- A) NO CHANGE
- B) tunnel they found
- C) tunnel and found
- D) tunnel, found

20

- A) NO CHANGE
- B) the one of
- C) those of
- D) DELETE the underlined portion.

21 Another benefit of the flexible wing is that many of its components can be taken apart and recycled. These advantages will be multiplied through savings in construction and 22 repair. One example of the savings is how the engineers are already working on miniature robots that construct the cells piece by piece, which means that internal repairs can be made without replacing an entire structure. If further testing confirms these results and the design can be scaled up to full-sized planes, flexible wings will carry the air travelers of the future.

21

Which choice provides the most effective transition from the previous paragraph?

- A) NO CHANGE
- B) This project was supported by the Defense Advanced Research Projects Agency, which funds many kinds of cutting-edge technologies.
- C) Such technology may eventually be used in robotic limbs, which could be constructed to bend with much more flexibility.
- D) Lower weight in the airframe translates into greater fuel efficiency, thus lowering fuel costs and making air travel more sustainable.

22

Which choice most effectively combines the sentences at the underlined portion?

- A) repair, with such savings being how the engineers
- B) repair, but the engineers, nonetheless,
- C) repair; the engineers are an example of savings because the engineers
- D) repair: the engineers

Questions 23-33 are based on the following passage.

A Natural Success

In 2013, entrepreneur Jess Edelstein began experimenting in her kitchen with mixtures of baking soda, coconut oil, charcoal, and other ingredients. Her goal was to **23** whip up a new natural deodorant that was both more effective and gentler on skin than the products available in stores. Once she had developed a product that seemed promising, Edelstein asked her friend Sarah Ribner to test it. Ribner was impressed with the product and thought it had **24** potential. The two women deciding to become business partners.

25 Edelstein's success in convincing Ribner to join her in her company, PiperWai, illustrates many of the problems and opportunities facing small-business entrepreneurs.

23

- A) NO CHANGE
- B) craft
- C) throw together
- D) adroitly configure

24

- A) NO CHANGE
- B) potential, the two women decided
- C) potential; with the two women deciding
- D) potential, and the two women decided

25

Which choice most effectively sets up the main discussion of the passage?

- A) NO CHANGE
- B) Edelstein and Ribner's experiences in building their company, PiperWai, illustrate
- C) Edelstein and Ribner's decisions about which natural ingredients to use in products made by their company, PiperWai, illustrate
- D) Edelstein and Ribner's choice to ask their family and friends to test the products made by their company, PiperWai, illustrates

Edelstein and Ribner had already succeeded in the first step in starting a **26** business, finding a hole in the consumer market and filling it with an effective product. However, like all new business owners, they needed money to take the next step. **27** To help informing PiperWai's financial decisions, Ribner drew on the skills and knowledge she had gained from her university business classes. The partners used money from a small loan and a contest prize to fund the beginning production phase. To keep production costs low, they prepared every batch of deodorant by hand in a community kitchen and packed and **28** shipped their products from Edelstein's apartment.

26

- A) NO CHANGE
- B) business, finding a hole—
- C) business; finding a hole
- D) business: finding a hole

27

- A) NO CHANGE
- B) To help the informing of
- C) To help inform
- D) Helping to inform with

28

- A) NO CHANGE
- B) to ship
- C) shipping
- D) they shipped

[1] After about six months of consistent growth, Edelstein and Ribner experienced a paradox familiar to many small-business entrepreneurs: their small-scale production process was not sufficient to meet customer demand, but they couldn't make enough money using their current process to pay for the upgrade they needed.

[2] Crowdfunding on Indiegogo earned Edelstein and Ribner the money to produce their deodorant in a factory and a coveted invitation to appear on the entrepreneurship-themed television program *Shark Tank*. [3] The attention their company gained from their 2015 *Shark Tank* appearance allowed Edelstein and Ribner to place their product in hundreds of stores across the United States and Canada. 29

29

The writer wants to add the following sentence to the paragraph.

The entrepreneurs turned to a popular online platform for business start-ups, Indiegogo.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

The small-business entrepreneurs had entered a new stage **30** and phase in the growth and increase of their business: **31** it wasn't so small anymore. Although she welcomed the opportunity, Ribner discovered that “scaling quickly, after *Shark Tank*, came with a lot of downfalls.” The partners struggled to find manufacturing facilities and distributors that could make and deliver enough deodorant. By 2017, however, **32** they had been largely overcome, and PiperWai was focused on a new strategy of “consistent, cautious growth”—a strategy favored not by start-ups but by mature companies. **33** PiperWai has even partnered with several charities.

30

- A) NO CHANGE
- B) in the growth and increase
- C) that was a phase in the growth
- D) in the growth

31

Which choice most effectively sets up the main idea of the paragraph?

- A) NO CHANGE
- B) they were finally making enough money to pay themselves a salary.
- C) they had added six employees to keep up with the demand.
- D) it generated substantial revenue for its charity partners.

32

- A) NO CHANGE
- B) the facilities and distributors
- C) it
- D) the challenges

33

Which choice most effectively concludes the passage?

- A) NO CHANGE
- B) PiperWai had succeeded.
- C) Furthermore, Edelstein and Ribner have remained close friends throughout their journey through small-business entrepreneurship.
- D) Thus, the profitability of natural cosmetics should be further investigated.

Questions 34-44 are based on the following passage.

Bringing the Humanities to the Public

Transamerican Literary Relations and the Nineteenth-Century Public Sphere. For most readers, this title of a recent volume of literary scholarship won't do much to clarify the author's topic. It may be tempting to fault the author for choosing an arcane title, but **34** they are not meant to be widely accessible; rather, they are aimed at other academics in the author's field. Given its specialization, most humanities scholarship does not, in fact, reach the "public sphere," where it might enlighten many nonacademics. **35** As part of a recent movement, some scholars are working to make humanities expertise meaningful for the general public through initiatives known as the "public humanities."

34

- A) NO CHANGE
- B) these
- C) such books
- D) the readers

35

Which choice provides the most effective transition from the previous sentence to the information that follows?

- A) NO CHANGE
- B) In spite of a number of critics,
- C) Together with related organizations,
- D) To counteract this insularity,

Public humanities programs often focus on relating humanities scholarship, which includes the study of literature, history, and the arts, to everyday life. Many universities have public humanities departments, such as Brown University's John Nicholas Brown Center for Public Humanities and Cultural Heritage. Some initiatives funded by the department bring scholars directly into contact with the local community, such as a 2011 project in which a professor worked with an oral historian and students to document stories of the surrounding city from residents. Public humanities programs can also **36** include projects that combine academic objectives with service to the community. For instance, several professors from the University of Virginia **37** exhibit *BackStory*, a podcast freely available throughout much of the world that addresses topics of general interest through an academic lens. One 2018 episode featured an interview with a professor of hip-hop **38** aesthetics; jazz, and African American and Haitian **39** history. It was about parallels between the hit film *Black Panther* and the Haitian Revolution.

36

Which choice most effectively sets up the information that follows in the paragraph?

- A) NO CHANGE
- B) extend far beyond a university setting.
- C) open new avenues of research for academics.
- D) draw criticism from scholars for a variety of reasons.

37

- A) NO CHANGE
- B) yield
- C) produce
- D) display

38

- A) NO CHANGE
- B) aesthetics, jazz; and,
- C) aesthetics, jazz, and
- D) aesthetics jazz and,

39

Which choice most effectively combines the sentences at the underlined portion?

- A) history about
- B) history; the interview was about
- C) history that consisted of a discussion on
- D) history, and he talked about

[1] For example, most episodes of *BackStory* include a call-in segment during which hosts and listeners can exchange ideas. [2] Public humanities projects have been challenged by scholar Mary **40** Mullen, for preserving “existing hierarchies of cultural authority.” [3] Mullen’s concern is that public humanities efforts can disempower the public by elevating academics as experts, thereby undermining the professed commitment of these efforts to democratize humanities scholarship. [4] However, Mullen’s criticism **41** has been neglecting the channels offered by programs such as *BackStory* for academics and the general public to engage with each other as equals. **42**

40

- A) NO CHANGE
- B) Mullen; for preserving
- C) Mullen for preserving,
- D) Mullen for preserving

41

- A) NO CHANGE
- B) neglects
- C) had neglected
- D) will neglect

42

To make this paragraph most logical, sentence 1 should be placed

- A) where it is now.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

Mullen’s argument is not entirely without **43** merit, public humanities programs can indeed **44** introduce diverse perspectives into the fields of the humanities. At their best, though, these programs can foster meaningful exchange between scholars and the general public. For this reason, they should be celebrated.

43

- A) NO CHANGE
- B) merit
- C) merit; as
- D) merit, as

44

Which choice provides the most effective support for the claim about Mullen’s argument earlier in the sentence?

- A) NO CHANGE
- B) increase public engagement with the academic work of scholars.
- C) reinforce the authority of the academics who lead them.
- D) generate enthusiasm and monetary support for important projects.

STOP

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

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Questions 1-11 are based on the following passage.

The Art of Translation

Translators perform the extraordinary feat of metamorphosing a piece of writing from one language to another. This act, as German **1** philosopher Walter Benjamin argued in his 1921 essay “The Task of the Translator,” is an art form of its own. Technological advancements in machine-translation software, however, have concerned some translators about the future of the translation industry. Machine translators, such as Google Translate or Microsoft Translator, may be able to translate a text in mere seconds, but when it comes to more creative projects, machine translators fall short in

1

- A) NO CHANGE
- B) philosopher, Walter Benjamin,
- C) philosopher—Walter Benjamin—
- D) philosopher: Walter Benjamin

crafting the kinds of works of art that Benjamin had in mind; **2** more human translators should learn from Benjamin's ideas about art.

2

Which choice most effectively sets up the main argument of the passage?

- A) NO CHANGE
- B) experienced human translators are still the only ones who possess the ability to make truly artful translations.
- C) there is a concern about whether translators know how to properly use the technology.
- D) machine translation software would likely need to be constantly updated to stay relevant.

The translator's task is rife with complex decisions, **3** but introducing more technology-based classes in translation degree programs may help meet these demands. This expertise, according to linguistics professor Adrian **4** Buzo. Is vital to using a language within appropriate tonal and cultural contexts. To translate literary or discipline-specific works—such as novels, movie dialogue, or scholarly articles—the translator must consider the degree of formality, the intended audience, and the **5** cost-effectiveness of human versus machine translators and choose the best approximation within the target language to replicate not only the precise content but also the personality of the writing.

3

Which choice provides the most effective introduction to the paragraph?

- A) NO CHANGE
- B) as it can be difficult to predict which books in translation will be commercially successful.
- C) and these challenges sometimes necessitate the services of machine translators.
- D) many of which require advanced sociolinguistic skills.

4

- A) NO CHANGE
- B) Buzo and is
- C) Buzo, which is
- D) Buzo, is

5

Which choice provides a supporting example that is most similar to the examples already in the sentence?

- A) NO CHANGE
- B) given deadline of the assignment
- C) historical moment of the original text
- D) type of software that translation programs use

Machine translators, on the other hand, are still notoriously bad at making such dynamic sociolinguistic choices. This is in part because current machine translators base their decisions largely on the frequency with which a word or phrase has been translated in a particular way within their databases, not necessarily on what is most appropriate to the specific text at hand. As a result, machine translations are often laughably awkward and outright **6** misleading. They are especially awkward and misleading when ambiguous words or phrases are used.

6

Which choice most effectively combines the sentences at the underlined portion?

- A) misleading; ambiguous words or phrases especially cause these two things when they
- B) misleading—it is especially awkward and misleading when ambiguous words or phrases
- C) misleading, and this happens especially when ambiguous words or phrases
- D) misleading, especially when ambiguous words or phrases

[1] Of course, as technology continues to improve, the translation field will undoubtedly experience some changes. [2] Sung Hee Kirk, a professor of English language and literature, **7** predict that the role of translator will increasingly become that of the editor of machine-translated texts. [3] To reiterate Benjamin's point, translators are artists, and therefore **8** their work should be valued as such. [4] As long as there is demand for quality translations—ones that **9** capture not only the precise meaning but also the personality of an original text—the skills of living, breathing human translators **10** will continue to be needed. **11**

7

- A) NO CHANGE
- B) are predicting
- C) have predicted
- D) predicts

8

- A) NO CHANGE
- B) there
- C) it's
- D) its

9

- A) NO CHANGE
- B) seize
- C) occupy
- D) obtain

10

- A) NO CHANGE
- B) will have continued
- C) are continuing
- D) had continued

11

The writer wants to add the following sentence to the paragraph.

While such may become the case with simpler translation projects, the role of the translator of creative and literary works will always be more than that of a proofreader.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

Questions 12-22 are based on the following passage.

Dusting Off Family History

— 1 —

In 1975 screenwriter and filmmaker Julie Dash began taking notes on the stories she **12** has heard from her family members who were part of the Gullah **13** community. Dash refined these notes into a movie script that, through a series of nonlinear vignettes, **14** it told the tale of a Gullah family preparing to migrate to the mainland and adopt a new way of life. Though her script was undeniably brilliant, Dash would have to overcome a string of challenges over the course of almost ten years to bring her **15** project *Daughters of the Dust*, to theaters.

12

- A) NO CHANGE
- B) hears
- C) heard
- D) will hear

13

The writer is considering revising the underlined portion to the following.

community—a group of African Americans who live on the islands of South Carolina and Georgia and are known for their adherence to the spiritual and cultural practices of West Africa.

Should the writer make this revision?

- A) Yes, because it provides relevant context about the primary subject matter of the film discussed in the passage, *Daughters of the Dust*.
- B) Yes, because it provides a detail that is essential to understanding the paragraph's discussion of the challenges Dash faced in her filmmaking.
- C) No, because it introduces information about the Gullah community that blurs the paragraph's main focus on Dash's movie script.
- D) No, because it fails to explain why the Gullah community continues to adhere to West African practices in South Carolina and Georgia.

14

- A) NO CHANGE
- B) telling
- C) told
- D) it was telling

15

- A) NO CHANGE
- B) project,
- C) project:
- D) project—

— 2 —

Her film’s episodic, dreamlike plot and lingering close-up camera shots of characters and food dishes served to memorialize a way of **16** life. They did this instead of advancing the story. This ambition didn’t appeal to the more action-oriented preferences of the film studios. **17** “In independent film, we are never able to pay top salaries,” Dash explained. “We do it to create the work. We do it to sharpen our skills.” It wasn’t until a chance meeting in 1988 that Dash finally found a backer in the public television series *American Playhouse*.

16

Which choice most effectively combines the sentences at the underlined portion?

- A) life, instead of having the story advance.
- B) life rather than advance the story.
- C) life; they did it rather than advancing the story.
- D) life; this was done instead of advancing the story.

17

Which quotation from Julie Dash’s book *Daughters of the Dust: The Making of an African American Woman’s Film* best supports the point made in the previous sentence?

- A) NO CHANGE
- B) “For the most part, the crew and actors all worked in the same spirit, everyone appreciating that we were doing something different, something special,” Dash said.
- C) “They thought the film would be unmarketable, Dash said. “Every major studio either passed on it or didn’t respond at all.”
- D) “One of the ongoing struggles of African American filmmakers is the fight against being pushed, through financial and social pressure, into telling only one kind of story,” Dash explained.

— 3 —

Though financing was **18** nailed down, Dash encountered another challenge once she started filming the full movie on a South Carolina island: the island’s environmental restrictions prohibited the use of the generator she required for proper lighting. **19** Given that the crew had only 28 days to film, this technical constraint influenced one of cinematographer Arthur Jafa’s most celebrated decisions—using natural sunlight. The resulting beachfront scenes of Dash’s black female characters in flowing white dresses are some of the film’s most iconic, the natural light suffusing them with a warm, ethereal glow. This effect perfectly suited Dash’s creative aim to, as the *Los Angeles Times* put it, “convey the very look, feel and texture of something that is about to be lost forever.”

18

- A) NO CHANGE
- B) guaranteed beyond a shadow of doubt,
- C) in the bag,
- D) secured,

19

Which choice provides the most effective transition from the previous sentence to the information that follows in this sentence?

- A) NO CHANGE
- B) Though the film would face other trials,
- C) With production already delayed because of bad weather,
- D) An obstacle at first,

— 4 —

Dash entered the completed *Daughters of the Dust* into film **20** festivals. Where its popularity led to a 1992 theatrical debut that made her the first African American woman filmmaker to have a theatrical release for a feature-length film. Since then, the film has captivated viewers and provided inspiration to many, with director Ava DuVernay citing it as a major influence and recording artist Beyoncé drawing on many of **21** it's motifs in her visual album *Lemonade*. *Daughters of the Dust's* theatrical debut marked the end of Dash's decade-long struggle and the beginning of her filmmaking legacy.

Question 22 asks about the previous passage as a whole.

20

- A) NO CHANGE
- B) festivals,
- C) festivals, where
- D) festivals; where

21

- A) NO CHANGE
- B) their
- C) they're
- D) its

Think about the previous passage as a whole as you answer question 22.

22

The writer wants to add the following sentence to the passage.

In 1987 Dash shot a segment of her movie and sent it to film studios with the hope of receiving financial support, but her own originality worked against her.

To make the passage most logical, the sentence should be placed at the beginning of

- A) paragraph 1.
- B) paragraph 2.
- C) paragraph 3.
- D) paragraph 4.

Questions 23-33 are based on the following passage.

Curating the African American Experience

When Lonnie Bunch accepted the job of founding director at the National Museum of African American History and Culture (NMAAHC) in 2005, he **23** made the decision to leave his previous job at the Chicago Historical Society. Some museum stakeholders **24** could be interested in building a museum that would highlight inspiring and uplifting images of African American achievement. Others envisioned a museum that reckoned more directly with the suffering caused by slavery and segregation. Bunch, **25** therefore, rejected both approaches in favor of a different one altogether. He decided that the NMAAHC should use the experiences of African Americans as a **26** lens. He made this decision with the thought that through such a lens, one can view American culture as a whole.

23

Which choice most effectively establishes the main topic of the passage?

- A) NO CHANGE
- B) took the first step in realizing a long-held vision.
- C) was faced with a challenging curatorial task.
- D) brought with him over a decade of experience as a museum curator.

24

- A) NO CHANGE
- B) were
- C) are
- D) will be

25

- A) NO CHANGE
- B) however,
- C) similarly,
- D) moreover,

26

Which choice most effectively combines the sentences at the underlined portion?

- A) lens through which to view
- B) lens; through this lens, one views
- C) lens, with the view of
- D) lens, and through it, to view

The museum's *Slavery and Freedom* exhibit **27** takes visitors chronologically through relics from the eras of slavery and emancipation. The display features a wall engraved with quotations about **28** freedom; including parts of the Declaration of Independence and of an 1808 sermon preached by African American minister Absalom Jones upon the abolition of the transatlantic slave trade. More quotations, as well as artifacts—including a Union army recruitment poster from the Civil War and a training plane piloted by the Tuskegee Airmen—showcase African American emancipation and progress as American history unfolds. Bunch explains that the expansion of African American freedom coincides with the expansion of freedom in the United States more generally. **29** "Museums that specialize in a given ethnic group usually focus solely on an insider's perspective of that group," he asserted in a 2016 article in *Smithsonian* magazine.

27

Which choice provides the best transition from the previous paragraph to this one?

- A) NO CHANGE
- B) exemplifies Bunch's approach of situating the experiences of African Americans within the broader context of American culture.
- C) encompasses large artifacts, from a cabin that once housed enslaved people to a Jim Crow-era segregated railcar.
- D) is located underground, three stories beneath the building's striking exterior.

28

- A) NO CHANGE
- B) freedom: including
- C) freedom (including
- D) freedom, including

29

Which quotation from Lonnie Bunch's article best supports the point made in the previous sentence?

- A) NO CHANGE
- B) "At times I took some flak, but if I was arguing that we were telling the quintessential American story, then I needed a variety of perspectives,"
- C) "If you're interested in American notions of freedom, if you're interested in the broadening of fairness, opportunity and citizenship, then regardless of who you are, this is your story, too,"
- D) "One [objective of the museum] was to harness the power of memory to help America illuminate all the dark corners of its past,"

The choices Bunch has made for displaying the NMAAHC's collection **30** has been well-received by visitors. Since opening in 2016, the museum has become one of the most popular of the Smithsonian museums on the National Mall in Washington, DC. Bunch's methodology is not without its critics, however. Writing in the *New Yorker* magazine, **31** Vinson Cunningham argues that the effort to tell a broad story about America through African American culture runs the risk of seeming incoherent. The museum, Cunningham **32** advises, "reduces history to a scattering of bright but unconstellated stars."

Bunch stands by his decision to present a history of the United States through the prism **33** of their lives. He notes that the NMAAHC displays inspirational instances of progress alongside powerful memorials to hardship, allowing visitors to interpret what they see for themselves. "Ultimately," Bunch says, "I trust that our visitors will draw sustenance, inspiration and a commitment from the lessons of history to make America better."

30

- A) NO CHANGE
- B) was
- C) have been
- D) is

31

- A) NO CHANGE
- B) an article by Vinson Cunningham argues that the effort to tell a broad story about America through African American culture runs the risk of seeming incoherent.
- C) it runs the risk of seeming incoherent to tell a broad story about America through African American culture, Vinson Cunningham argues.
- D) the effort to tell a broad story about America through African American culture runs the risk of seeming incoherent, argues Vinson Cunningham.

32

- A) NO CHANGE
- B) lectures,
- C) urges,
- D) cautions,

33

- A) NO CHANGE
- B) of those lives.
- C) of the lives of African Americans.
- D) DELETE the underlined portion and end the sentence with a period.

Questions 34-44 are based on the following passage and supplementary material.

Deer on the Move

34 Because of their digestive anatomy, mule deer are selective in their diet and feed mostly on various weeds, leaves, and twigs. The vegetation they feed on at high elevations in the spring and summer provides the deer with the sustenance they need to survive winters in a barren (though warmer) desert environment. However, roadways have obstructed the three-hundred-mile round-trip journey of the deer, prompting researchers and Wyoming state officials **35** for adopting a clever strategy to ensure the migration is not disrupted.

34

Which choice introduces the passage most effectively?

- A) NO CHANGE
- B) Because of a continued population decline in Wyoming's mule deer population, multiple conservation efforts are now under way to protect them from extinction.
- C) Every year some of Wyoming's mule deer migrate between their summer ranges in the mountain slopes of the Hoback Basin and winter ranges in the Red Desert.
- D) Named for their large, mule-like ears, mule deer are social animals that usually live in multigenerational groups of related females and their offspring.

35

- A) NO CHANGE
- B) to adopt
- C) adopt
- D) in the adoption of

In 2001, to aid mule deer migration and prevent road accidents that **36** dangerously put motorists and deer at risk, state authorities installed KP49, a concrete box culvert (tunnel) approximately 60 feet long, 19 feet wide, and 10 feet high that runs beneath a highway in the mule deer winter range and migration route. Tall fences were constructed along 3.4 miles of highway on either **37** side of these tunnels to channel migrating deer into it. Several additional **38** underpasses, and another six miles of fencing were constructed in 2008. Beginning that December, a research team launched a **39** study. The team wanted to determine whether deer did in fact use the underpasses over three annual migratory cycles (lasting until May 2011). They installed digital infrared cameras in each underpass, allowing them to count the number of deer that came close to the culverts and the number that actually traveled through them to cross the highway. The average passage rate for a given migratory cycle was calculated by dividing the number of deer that successfully used an underpass by the total number of deer that approached within roughly 200 feet of it.

36

- A) NO CHANGE
- B) put motorists and deer at risk,
- C) expose motorists and deer to risky accidents,
- D) threaten motorists and deer by putting them at risk,

37

- A) NO CHANGE
- B) sides of this tunnel
- C) side of this tunnel
- D) sides of these tunnels

38

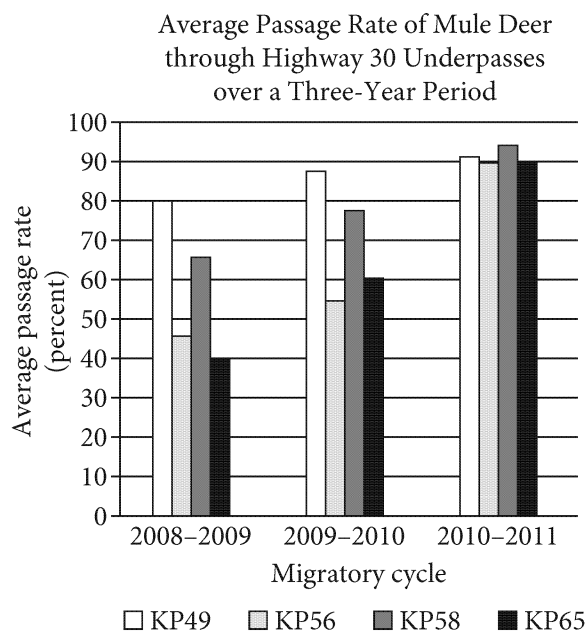
- A) NO CHANGE
- B) underpasses;
- C) underpasses—
- D) underpasses

39

Which choice most effectively combines the sentences at the underlined portion?

- A) study to determine
- B) study determining
- C) study whose goal was the determination of
- D) study that was initiated to determine

During the first year of the study, researchers found that approximately 80 percent of the deer that came within range of underpass KP49 passed through it successfully. By contrast, at the KP58 site the rate was about 65 percent, and at KP65 it was only 40 percent. Passage rates **40** fluctuated widely throughout the study, however, and by the third year the **41** passage rates at every underpass had climbed to approximately 90 percent. Researchers concluded that the deer needed time to habituate to these new landscape **42** features, once the underpasses were familiar, deer used them without hesitation. This accounts for the higher-than-average passage rates at KP49 in the first migratory cycle. **43** In contrast, greater migratory use of underpasses coincided with an 81 percent decrease in collisions between vehicles and deer.



Adapted from Hall Sawyer et al., "Mitigating Roadway Impacts to Migratory Mule Deer—A Case Study with Underpasses and Continuous Fencing." ©2012 by The Wildlife Society.

40

Which choice offers an accurate interpretation of the data in the graph?

- A) NO CHANGE
- B) remained near constant for some sites,
- C) at all sites increased over time,
- D) dropped for at least one site,

41

Which choice most effectively uses information from the graph to support the point made in the next sentence of the paragraph?

- A) NO CHANGE
- B) passage rate for the oldest underpass, KP49, had leveled off.
- C) KP58 site had, by a small margin, the highest passage rate of all.
- D) success rate of KP65 was consistent with those of the other three sites.

42

- A) NO CHANGE
- B) features
- C) features: in that
- D) features;

43

- A) NO CHANGE
- B) Specifically,
- C) Generally,
- D) Crucially,

The Wyoming project demonstrated that mule deer can adapt to underpasses, **44** but this improves safety outcomes for both deer and humans. Researchers hope that their results can be used to produce more effective measures to protect this and other species, keeping human and animal travelers out of each other's way.

44

- A) NO CHANGE
- B) improving
- C) yet improving
- D) this improves

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Questions 1-11 are based on the following passage.

Composing a Legacy

1 Every Wednesday on a weekly basis for over fifty years, Nadia Boulanger would invite her current pupils to

1

- A) NO CHANGE
- B) on Wednesdays—that is, every week—
- C) Every Wednesday
- D) Each and every Wednesday in her apartment

her Parisian apartment for an afternoon of music and discussion. **2** Some of the twentieth century's greatest composers attended these intellectually rigorous weekly gatherings. They were just some of the attendees. From the 1920s until her death in 1979, countless aspiring composers—like Aaron Copland, Philip Glass, and Quincy Jones—sought out Boulanger's mentorship, as if it were a rite of passage in their musical careers. Boulanger, a gifted performer and composer in her own right, was famous for her demanding curriculum that stressed not only the **3** obligations composers have to their audience but also the need for every student to discover his or her own individuality as a composer.

2

Which choice most effectively combines the underlined sentences?

- A) Of the attendees at these intellectually rigorous weekly gatherings, some of them were among the twentieth century's greatest composers.
- B) These intellectually rigorous weekly gatherings had attendees, and among them were some of the twentieth century's greatest composers.
- C) Some of the twentieth century's greatest composers attended because these were intellectually rigorous weekly gatherings.
- D) Among the attendees to these intellectually rigorous weekly gatherings were some of the twentieth century's greatest composers.

3

Which choice best sets up the main idea of the next paragraph?

- A) NO CHANGE
- B) advantages of dramatic formats like opera
- C) importance of musical form
- D) value of learning to play several instruments

[1] Central to Boulanger's teaching was her insistence that students master the fundamentals of classical music, which to her meant gaining a proficiency in music theory and analysis while also cultivating listening skills. [2] Boulanger used various exercises to drill her students in music basics such as harmony (combining two or more notes) and counterpoint (combining melodies). [3] During private lessons and weekly gatherings, Boulanger [4] leads line-by-line analyses of famous musical compositions, identifying their [5] structures and what she discerned as their weaknesses as well. [4] From these intensive sessions with Boulanger, Glass claims [6] that, he "learned to hear." [7]

4

- A) NO CHANGE
- B) would lead
- C) will lead
- D) has been leading

5

- A) NO CHANGE
- B) structures and what she discerned as their weakness's
- C) structures' and what she discerned as their weaknesses'
- D) structure's and what she discerned as their weaknesses

6

- A) NO CHANGE
- B) that
- C) that:
- D) that—

7

To make this paragraph most logical, sentence 1 should be placed

- A) where it is now.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

While Boulanger believed devoutly in musical traditions of the past, she also encouraged her students to experiment and forge their own styles—which they certainly did. Copland, who studied for three years with Boulanger, began composing classical pieces that took inspiration from American folk songs, as in his 1938 ballet *Billy the Kid*. Glass, a later student, developed a more minimalist approach, breaking music down to its basic components. In the 1968 composition *Two Pages*, for example, a pattern of five notes is repeated for eighteen dizzying minutes. Jones, one of the few jazz musicians to study with **8** Boulanger, went on to compose dozens of film scores and produce some of the most iconic pop albums of the century, such as Michael Jackson’s 1982 hit *Thriller*. To Boulanger, who **9** once taught the composer of the musical *Bye Bye Birdie*, it was only natural her pupils would take such diverse paths and make such unique music.

8

- A) NO CHANGE
- B) Boulanger went on—to
- C) Boulanger went on to
- D) Boulanger went on to,

9

Which choice best supports the information that follows in the sentence?

- A) NO CHANGE
- B) held that one must first master the rules of composition before breaking them,
- C) taught for years at the American Conservatory at Fontainebleau,
- D) believed that composers must find ways to individuate themselves,

Above all, Boulanger was truly dedicated to music, and she **10** past on a legacy of musical devotion to several generations of composers. She famously once said, “False notes can be forgiven; false music cannot,” and Boulanger **11** became renowned more for her teaching than for her own musical compositions.

10

- A) NO CHANGE
- B) past for
- C) passed on
- D) passed for

11

The writer wants a conclusion that summarizes the passage’s discussion of Boulanger’s legacy. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) will long be remembered for her formidable knowledge of composers and compositions as well as her own musical skills.
- C) taught her pupils the foundational skills that allowed them to be trailblazers, true to their own creative impulses.
- D) never claimed to be able to inspire creativity in her students, only to train them in technical matters.

Questions 12-22 are based on the following passage.

Managing Expectations

[1] In the workplace, managers' expectations regularly **12** become self-fulfilling prophecies, for better or worse, employees end up performing like their managers believe they will. [2] Researchers have long known both that positive managerial expectations can lead to increased employee performance and that supervisors often have difficulty communicating such beliefs, especially if **13** it is not sincerely held. [3] For example, subtle nonverbal signals, such as facial expressions, operate on a subconscious **14** level, betraying and showing bosses' true feelings. [4] Although it can be challenging to control such signals, supervisors can create an environment of positive expectations by incorporating two concrete strategies into their leadership style. **15**

12

- A) NO CHANGE
- B) become self-fulfilling prophecies
- C) become: self-fulfilling prophecies,
- D) become self-fulfilling prophecies:

13

- A) NO CHANGE
- B) that is
- C) this is
- D) they are

14

- A) NO CHANGE
- B) level, betraying
- C) level beyond conscious awareness, showing
- D) level, and these signals betray

15

The writer wants to add the following sentence to this paragraph.

Thus, managers' words may tell one story, and their faces, another.

The best placement for this sentence is

- A) after sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

Managers can start by setting challenging, yet realistic, performance goals for their employees. In the 1960s, an experiment at the Metropolitan Life Insurance Company demonstrated how **16** can ambitious goals powerfully communicate positive expectations? One of the company's district managers selected his six best insurance agents, placed them under the leadership of his best assistant manager, and tasked the group with a lofty sales **17** goal, which acted as a clear sign of management's confidence in the group's abilities. People within the company began referring to this group as the "super **18** staff." The six agents who made up the group performed accordingly, boosting the performance of the agency by 40 percent. The takeaway is simple: to create super staff, give them super goals.

16

- A) NO CHANGE
- B) can ambitious goals powerfully communicate positive expectations.
- C) ambitious goals can powerfully communicate positive expectations?
- D) ambitious goals can powerfully communicate positive expectations.

17

Which choice most effectively supports the idea in the previous sentence?

- A) NO CHANGE
- B) goal: the manager would report the results of the experiment at an industry meeting in 1963.
- C) goal; sales goals are typically set once the market potential of a product has been determined.
- D) goal, as part of a plan based on the manager's observations of trends at various insurance agencies.

18

Which choice most effectively combines the sentences at the underlined portion?

- A) staff," and the six agents performed
- B) staff," and the group made up of six agents performed
- C) staff"; they (the six agents) performed
- D) staff," with the agents, all six of them, performing

Providing employees with learning opportunities

19 —such as attending a professional conference or taking an online course—also communicates positive expectations because such activities signal to employees that they possess skills and abilities worth developing. In 2009, researchers in the Netherlands surveyed 904 manager-employee pairs from a variety of professions and found that managers who had higher expectations of their employees provided them with more opportunities for learning. However, the research team noted that some bosses were biased; they made these activities available only to employees they considered to have high potential—a behavior that **20** risk creating a situation in which employees considered to have low potential fail to develop their skills. **21** In determining an employee’s potential, supervisors should make these experiences available to all.

These two strategies are simple, yet powerful, and workplace leaders would be wise to employ them. The evidence is clear: managers and staff alike benefit from an atmosphere **22** that expectations are high and opportunities to exceed them are abundant.

19

The writer is considering deleting the underlined portion. Should the underlined portion be kept or deleted?

- A) Kept, because it clarifies the paragraph’s main point by offering examples of learning opportunities.
- B) Kept, because it provides a valid counterpoint to a claim about performance made in the previous paragraph.
- C) Deleted, because it fails to effectively set up the discussion of the research that follows in the paragraph.
- D) Deleted, because it introduces a detail that undermines the passage’s argument about employer expectations.

20

- A) NO CHANGE
- B) risks
- C) have risked
- D) are risking

21

Which choice provides the most effective transition from the previous sentence?

- A) NO CHANGE
- B) In spite of inevitable failure,
- C) Though some skills are more difficult to learn,
- D) To avoid this pitfall,

22

- A) NO CHANGE
- B) in that
- C) in which
- D) which

Questions 23-33 are based on the following passage and supplementary material.

Dating Rocks

When a fossilized millipede called *Pneumodesmus newmani* was discovered in Scotland in 2004, **23** it's estimated age led researchers to conclude it could be the oldest air-breathing animal. It would take the efforts of a determined University of Texas student to show a flaw in **24** it.

23

- A) NO CHANGE
- B) they're
- C) their
- D) its

24

- A) NO CHANGE
- B) this hypothesis.
- C) them.
- D) those.

The fossil was initially dated to around 428 million years **25** ago. This dating of the fossil was based on the abundance of period-specific plant spores found in nearby sediment. Professor Elizabeth Catlos of the Jackson School of Geosciences at the University of Texas at **26** Austin, knew that radiometric analysis could provide a more accurate age, but such an analysis had not been performed because researchers were unable to extract the **27** necessary minerals that they required from soil samples. Specifically, they needed grains of zircon, a mineral that traps uranium within its structure when it forms. Uranium isotopes decay into particular isotopes of lead at known rates, so researchers can determine how much time has passed since the zircon formed by measuring the ratios of the lead isotopes to the remaining uranium isotopes in the mineral. Catlos believed that zircon grains, or zircons, could be found in the **28** samples she asked her student Stephanie Suarez to find them.

25

Which choice most effectively combines the sentences at the underlined portion?

- A) ago, with this being
- B) ago: initial dating was
- C) ago
- D) ago, and the dating was

26

- A) NO CHANGE
- B) Austin knew:
- C) Austin knew
- D) Austin; knew

27

- A) NO CHANGE
- B) minerals they needed to extract for analysis
- C) necessary minerals
- D) minerals that were necessarily needed

28

- A) NO CHANGE
- B) samples; and
- C) samples,
- D) samples, and she

[1] Suarez received soil samples from three beds near the one where the millipede fossil was found. [2] “The ashes clumped together, and no zircons sank to the bottom,” she recalls. [3] “It was very messy and unsuccessful.” [4] Suarez did some research and came across another method that used sonic vibrations to separate zircons. [5] This technique **29** worked; yielding numerous grains of zircon from two of the beds. [6] Suarez and other researchers isolated forty zircons from each of these beds for analysis. **30**

29

- A) NO CHANGE
- B) worked, it yielded
- C) worked, yielding
- D) worked, and yielding

30

The writer wants to add the following sentence to this paragraph.

She first tried to separate zircons from volcanic ash in the samples by crushing the minerals up and applying an organic solvent, but this method proved ineffective.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 3.
- D) after sentence 4.

Performing the radiometric analysis, researchers found that numerous grains in each bed were as old as the original estimate or older. However, they also discovered that some were much younger, including a grain in bed 16COW3 dated to **31** 420.0 million years ago and one in bed 16COW1 dated to 410.4 million years ago. A total of **32** two grains in 16COW3 and eight in 16COW1 dated to the Devonian period, which lasted from about 419.2 to 358.9 million years ago.

Ages of Selected Zircon Grains in Beds near
Pneumodesmus newmani Fossil

	Grain #	Age (millions of years)
Grains in bed 16COW3	4	414.3
	9	415.0
	26	418.7
	3	426.0
	37	447.7
Grains in bed 16COW1	34	410.4
	6	413.7
	1	413.8
	12	414.0
	14	414.0
	27	415.0
	19	418.8
	2	420.0

Adapted from Stephanie E. Suarez et al., "A U-Pb Zircon Age Constraint on the Oldest-Recorded Air-Breathing Land Animal."
©2017 by Stephanie E. Suarez et al.

31

Which choice most accurately represents the information in the table?

- A) NO CHANGE
- B) 413.8
- C) 414.3
- D) 418.8

32

Which choice most accurately represents the information in the table?

- A) NO CHANGE
- B) at least four grains in each bed
- C) five grains in 16COW3 and three in 16COW1
- D) three grains in 16COW3 and seven in 16COW1

Since the Devonian is already known to have given rise to other air-breathing animals, the presence of grains from this period around the fossil indicated that *Pneumodesmus newmani* is not the oldest air-breathing animal. Together with Catlos and two other scientists, Suarez published her results in the journal *PLOS ONE* in 2017; thanks to Suarez, **33** the search for the oldest air-breathing animal now continues.

33

Which choice most effectively concludes the passage?

- A) NO CHANGE
- B) the tricky problem of how to extract zircons was solved.
- C) important data about the Devonian period were discovered.
- D) researchers have a new reason to be interested in ancient soil beds.

Questions 34-44 are based on the following passage.

Postal Privacy

[1] In his 1928 dissent on the case of *Olmstead v. United States*, US Supreme Court Justice Louis Brandeis **34** pledged that phone conversations are **35** subjected to privacy protections under the Fourth Amendment, which prohibits “unreasonable searches and seizures” of people’s “houses, papers, and effects.”

[2] Brandeis’s argument is a key precedent for **36** modern legal interpretations of the Fourth Amendment. [3] Indeed, the influence of his argument has been so widespread that many in the United States today assume that the Fourth Amendment plainly guarantees a right to privacy of communications.

[4] According to law professor Anuj Desai, the guarantee can principally be ascribed not to the Constitution but rather to the early history of the US Postal Service and the judicial reverberations of that history through time.

[5] However, the US Constitution makes no explicit reference to such privacy. **37**

34

- A) NO CHANGE
- B) asserted
- C) demanded
- D) divulged

35

- A) NO CHANGE
- B) subjects of
- C) the subjection of
- D) subject to

36

- A) NO CHANGE
- B) lawyer-type thinking these days on
- C) the things legal bigwigs say today about
- D) what law pundits have reckoned lately regarding

37

To make this paragraph most logical, sentence 5 should be placed

- A) where it is now.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

As tensions between loyalists and revolutionaries escalated during the 1770s, the British-controlled colonial postal service became an increasing source of concern, **38** even though the American Secretary, Lord Dartmouth, wanted to avoid going to war. In response to this anxiety, the Second Continental Congress established an independent mail service in 1775 that **39** had provided safeguards for confidentiality, such as **40** a provision that mail for delivery “be under lock and key.” When the US Postal Service was founded in 1792, prohibitions against opening mail without a warrant were written into its charter. Although the Bill of Rights had been ratified in 1791, Desai **41** notes that, the legal guarantee of private mail was established independently of the Fourth Amendment. There is no evidence that the amendment was designed to include sealed letters sent through the mail among the “papers” protected from unreasonable searches.

38

Which choice most effectively develops the information earlier in the sentence and sets up the information in the sentence that follows?

- A) NO CHANGE
- B) but new taxation measures were the immediate catalyst for the outbreak of the American Revolution.
- C) with colonists of both affiliations fearing access to their private communications by opponents.
- D) and Benjamin Franklin’s partner, newspaper publisher William Goddard, was one of its vocal critics.

39

- A) NO CHANGE
- B) provides
- C) provided
- D) will be providing

40

Which choice gives a supporting example that is most relevant to the sentence?

- A) NO CHANGE
- B) service to and from each of the thirteen colonies.
- C) delivery six days out of the week.
- D) the appointment of Benjamin Franklin as the first Postmaster General.

41

- A) NO CHANGE
- B) notes that
- C) notes, that
- D) notes that:

US Supreme Court **42** justices, those who eventually held that certain forms of surveillance violated the Fourth Amendment drew on a tradition of protections derived from colonial experience. In the 1878 case *Ex parte Jackson*, Justice Stephen Johnson Field crucially extended the meaning of “papers” in the Fourth Amendment to include sealed letters in the postal system, **43** moreover, making postal policy a constitutional principle. This opinion, in turn, set the precedent for Brandeis’s equating of private phone calls with sealed letters.

Early postal policymakers were instrumental in guaranteeing the right to privacy of correspondence, but new forms of communication in the digital age mean that privacy matters are far from resolved. In grappling with questions surrounding twenty-first-century methods, **44** courts will likely continue to be influenced by decisions made in colonial times.

42

- A) NO CHANGE
- B) justices, and who
- C) justices
- D) justices who

43

- A) NO CHANGE
- B) thus
- C) conversely,
- D) meanwhile,

44

- A) NO CHANGE
- B) it is by decisions made in colonial times that courts will likely continue to be influenced.
- C) decisions made in colonial times will likely continue to influence courts.
- D) the influence on courts will likely continue to be decisions made in colonial times.

STOP

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

**OCTOBER 2, 2021
INTERNATIONAL**

The SAT®

Test Book

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

Some questions will direct you to an underlined portion of a passage. Other questions will direct you to a location in a passage or ask you to think about the passage as a whole.

After reading each passage, choose the answer to each question that most effectively improves the quality of writing in the passage or that makes the passage conform to the conventions of standard written English. Many questions include a “NO CHANGE” option. Choose that option if you think the best choice is to leave the relevant portion of the passage as it is.

Questions 1-11 are based on the following passage.

Filling in the Blank

In the human eye, the optic nerve prevents a small portion of the retina **1** to be covered by the light

1

- A) NO CHANGE
- B) being
- C) from being
- D) in order to be

sensors that collect visual information. **2** The brain compensates for this blind spot by using context clues to complete the picture; the resulting image is called inferred vision. Because inferred vision is based on an approximation made by the brain, researchers were surprised to learn that we trust it more than the visual information that comes from outside the blind spot.

A team of biopsychologists in Germany observed this effect in a series of experiments in which subjects **3** don special glasses to control the field of vision and were asked to focus on a symbol on a computer monitor. Pairs of striped circles were presented on either side of this focal point. All circles had vertical **4** stripes, in the center of some circles an area was cut out and replaced with horizontal stripes. Subjects found it easy to identify the cutouts with horizontal stripes if they were positioned outside the blind spot. However, if the cutouts were positioned inside the blind **5** spot, and inferred vision would complete the image based on the surrounding stripes, and subjects would assume the stripes were uniformly vertical. In each case, subjects were asked to identify which of the two circles in the pair had continuous stripes.

2

At this point, the writer is considering adding the following sentence.

Ophthalmologists routinely dilate the human eye to conduct a thorough examination of the retina and the optic nerve.

Should the writer make this addition here?

- A) Yes, because it offers information that supports the previous sentence in the paragraph.
- B) Yes, because it provides an effective transition to the next sentence in the paragraph.
- C) No, because it gives a detail that distracts from the focus of the paragraph.
- D) No, because it contradicts the main point of the paragraph.

3

- A) NO CHANGE
- B) donned
- C) will don
- D) will have donned

4

- A) NO CHANGE
- B) stripes, however,
- C) stripes
- D) stripes, but

5

- A) NO CHANGE
- B) spot,
- C) spot; so
- D) spot: therefore,

The first experiment **6** conceded unexpected results: subjects tended to select circles presented with the center in the blind spot over circles presented with the center outside the blind spot. **7** Given that humans need information to make decisions, the researchers tested control conditions to see whether presenting the stimulus to a particular part of the eye affected the result. While they found a slight tendency of subjects to favor stimuli presented in the temporal visual field (the zone away from the focal point), the bias in favor of the blind spot remained. The researchers also **8** considered reaction times, asking subjects to pick the circle that contained the cutout with horizontal stripes; the result was that subjects showed a bias toward picking the circle with its center outside the blind spot. **9** On the basis of all these results, the researchers came to the conclusion that subjects trusted their inferred vision more than they did their direct sensory perceptions.

6

- A) NO CHANGE
- B) granted
- C) surrendered
- D) yielded

7

Which choice provides the most effective transition from the previous sentence?

- A) NO CHANGE
- B) Because this finding was counterintuitive,
- C) In light of the complexities of human anatomy,
- D) Since humans often supply missing details while assessing arguments,

8

Which choice best sets up the information that follows in the sentence?

- A) NO CHANGE
- B) looked at differences between the left and right sides of the eye,
- C) tried reversing the selective task,
- D) tested whether subjects were using probability,

9

Which choice provides the most effective transition from the preceding discussion in the paragraph?

- A) NO CHANGE
- B) Although they could have done more experiments,
- C) Since the results did not confirm their hypothesis,
- D) Building on previous studies of perception,

According to Benedikt Ehinger, a biopsychologist who worked on the study, one of the team's major findings is about something the brain does not do. "The implicit knowledge that a filled-in stimulus is less reliable than an external one does not seem to be taken into account for perceptual decision-making," he says. The researchers **10** hope to use this result. They seek to explore the causes of other visual phenomena, such **11** as: afterimages and optical illusions.

10

Which choice most effectively combines the sentences at the underlined portion?

- A) hope to use this result to explore
- B) have hopes for the use of the result in exploring
- C) hope to use this result and seek to explore
- D) hope that the result will allow them to usefully explore

11

- A) NO CHANGE
- B) as, afterimages,
- C) as—afterimages
- D) as afterimages

Questions 12-22 are based on the following passage.

The Benefits of Vernacular Architecture

[1] Unfortunately, many architects in Portugal have abandoned traditional (or vernacular) building methods in favor of modern ones, such as using concrete and steel and **12** to rely on costly heating and air-conditioning systems. [2] While such buildings may offer certain luxuries, they consume large amounts of energy during construction and occupancy. [3] In the pursuit of energy-efficient construction methods, Portuguese architects should look back to their country's architectural traditions. [4] There, in the vernacular methods of the past, architects might find inspiring models for the future of sustainable design. **13**

12

- A) NO CHANGE
- B) they rely
- C) the reliance
- D) relying

13

The writer wants to add the following sentence to the paragraph.

From the whitewashed houses of the south to the stone-built homes of the north, Portugal has a rich and centuries-old architectural history.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 4.

For centuries, builders in Portugal **14** prioritized the basic need for safety and shelter from harsh conditions. In the dry southern region of Alentejo, for example, this meant crafting walls made of *taipa* (a mixture of gravel, sand, silt, and clay), while in the mountainous northern region of Beira Alta, **15** there was a lot of granite. In Beira Alta, granite was the most obvious and abundant choice of material. As Jorge Fernandes and his colleagues at the University of Minho observe in a study of Portuguese vernacular architecture, **16** and these traditional materials are still viable options for contemporary Portuguese designs. Because the materials can be made or mined locally, the energy costs in production and transport are often lower than **17** those for imported materials such as steel and concrete. Additionally, both materials are notably **18** durable—taipa and granite—structures have been known to last more than one thousand years.

14

Which choice most effectively sets up the information that follows in the paragraph?

- A) NO CHANGE
- B) relied almost solely on the available resources of the local landscape.
- C) improved building techniques by adopting the methodologies of other regions.
- D) resigned themselves to the limitations of their region's climate.

15

Which choice most effectively combines the sentences at the underlined portion?

- A) granite
- B) where granite was plentiful, it
- C) builders had granite; it
- D) because there was granite, it

16

- A) NO CHANGE
- B) but
- C) so
- D) DELETE the underlined portion.

17

- A) NO CHANGE
- B) imported materials such as
- C) materials that are imported such as
- D) DELETE the underlined portion.

18

- A) NO CHANGE
- B) durable, taipa and granite:
- C) durable, taipa and granite
- D) durable: taipa and granite

Long before the invention of electricity-hungry air-conditioning systems, Portuguese builders developed a **19** variety of passive, energy-free methods for regulating temperature. In both Alentejo and Beira Alta, buildings were constructed with thick exterior walls to keep interior temperatures stable. In Alentejo, which **20** experience hot summers, these structures were built on sites that minimized their sun exposure and used cooling features such as vents that could be opened at night. In Beira Alta, where the winters are harsher, **21** rainy winters followed by dry summer seasons make the land more suitable for growing crops.

While their application is limited to locales in the same climate zone as Portugal, these simple yet effective building techniques can offer promising solutions to modern architects of sustainable design. Honed over centuries in relation to local resources and regional climate, the vernacular architecture of Portugal **22** incorporates outdoor strategies, such as narrow streets and covered passages that maximize shade and store cool night air, as well.

19

- A) NO CHANGE
- B) mixed bag
- C) bunch
- D) diverse plethora

20

- A) NO CHANGE
- B) experiences
- C) have experienced
- D) are experiencing

21

Which choice best supports the main claim of the paragraph?

- A) NO CHANGE
- B) ancient castles and cathedrals situated high in the mountains preserve the architectural history of Portugal.
- C) large, south-facing balconies were designed to maximize sunlight absorption for natural heating.
- D) cattle were often housed on the lower level of two-story homes while the upper level was used for human residents.

22

Which choice most effectively concludes the passage?

- A) NO CHANGE
- B) offers promise that additional research will lead to the adaptation of tactics that better align with building codes.
- C) provides incentive for home builders to return to designs that include fireplaces, water fountains, and an abundance of windows.
- D) stands as a good reminder that sometimes the most energy-efficient methods can be found in the building traditions of the past.

Questions 23-33 are based on the following passage and supplementary material.

The Corporate Game Plan

23 Gamification—or the application of game-like rules and rewards to occupational tasks and other nongame contexts, has become **24** increasingly more popular with employers. According to a recent report, nearly 70 percent of the **25** world's largest publicly traded company's have implemented or are projected to implement some form of gamification, and government agencies are also getting in on the act. Employers hope that gamification will both engage employee interest and serve as a catalyst for greater input from workers about organizational practices—which can result in improvements in the workplace and significant financial gains.

One employer to have seen the positive results gamification can **26** bring, is the United Kingdom's Department for Work and Pensions (DWP). Like many organizations, the DWP wanted to take advantage of the ideas of its employees. **27** Nevertheless, it created Idea Street, an online platform for employees to share ideas for organizational improvements.

23

- A) NO CHANGE
- B) Gamification,
- C) Gamification:
- D) Gamification

24

- A) NO CHANGE
- B) increasingly popular
- C) more popular than it was before
- D) popular, increasingly more so,

25

- A) NO CHANGE
- B) worlds' largest publicly traded companies'
- C) world's largest publicly traded companies
- D) worlds largest publicly traded company's

26

- A) NO CHANGE
- B) bring is,
- C) bring is:
- D) bring is

27

- A) NO CHANGE
- B) To that end,
- C) At the same time,
- D) In addition,

Idea Street was designed as a game that would motivate DWP employees to collaborate on idea development with colleagues across the organization. Idea Street operated according to a point system: employees who submitted ideas of their own, or assisted in the development of the ideas of others, **28** received points called DWPeas. Employees could then use these points to develop their ideas further by “hiring” other staff to assist them. They could also purchase a “stake” in a promising idea developed by someone else.

Once developed, all ideas were evaluated by the innovation group, **29** comprising a small team of employees tasked with selecting the best ideas for implementation. Selection of a particular idea for implementation meant that **30** they increased in value, earning its stakeholders additional points. Employees with the highest point totals were asked to join the innovation group for the next round of evaluations.

28

- A) NO CHANGE
- B) to receive
- C) receiving
- D) they received

29

- A) NO CHANGE
- B) composed of
- C) comprised of
- D) DELETE the underlined portion.

30

- A) NO CHANGE
- B) they increased in value, earning their
- C) it increased in value, earning its
- D) it increased in value, earning their

31 Though the resources needed to establish Idea Street were greater than anticipated, and though some participants objected to what they considered excessive involvement on the part of the innovation group, the game was considered a success. By 2010, Idea Street had attracted approximately **32** 1,100 participants, and these employees had generated about 1,400 ideas. Of these, sixty-three had been implemented by 2010, **33** with returns totaling about \$33 million. Idea Street is merely one example of the generally positive results associated with gamification. However, if the platform's recent adoption by other public service departments in the United Kingdom is any indication, this fast-growing trend is likely to become a feature of the work experience for millions of employees.

Results of DWP's Idea Street, November 2010

Number of users	~4,500
Ideas generated	~1,400
Ideas currently active	~1,100
Ideas implemented	63
% of ideas implemented	4.5%
Financial benefits	~\$33 million

Source: Data from Brian Burke and Mary Mesaglio, "Case Study: Innovation Squared: The Department for Work and Pensions Turns Innovation into a Game." ©2010 by Gartner, Inc.

31

- A) NO CHANGE
- B) Because
- C) Given that
- D) DELETE the underlined portion, adjusting the capitalization as needed.

32

Which choice provides accurate information from the table?

- A) NO CHANGE
- B) 300
- C) 1,400
- D) 4,500

33

The writer wants to use information derived from the table to support the main idea of the paragraph. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) and many of the 1,100 active ideas may join them someday.
- C) saving the department money every time.
- D) which is 4.5% of the total number of ideas.

Questions 34-44 are based on the following passage.

Painting Space

When Washington, DC, art teacher Alma Thomas retired in 1960, she devoted herself full-time to painting until her death in 1978. Her work captured the public's attention for a unique **34** reason Thomas's paintings were inspired by American accomplishments in spaceflight in the 1960s and 1970s.

For much of her career as an artist, Thomas had **35** earned success and respect as a teacher of art. She was especially adept at abstractly suggesting motion, like that of the wind. Such a depiction can be seen in her **36** articulate 1968 painting *Wind, Sunshine, and Flowers*, which is composed of straight, vertical stripes of numerous dabbed-on colors; the white space between the colors reveals swirling, curving lines reminiscent of flowers blowing in the wind. Thomas had success in portraying scenes from nature and her own garden in this and other works, but her interests shifted from movement on Earth to movement in the sky—**37** namely, the hurtling of spacecraft through space.

34

- A) NO CHANGE
- B) reason:
- C) reason;
- D) reason,

35

Which choice provides the most effective introduction to the paragraph?

- A) NO CHANGE
- B) not been recognized as a professional by the art community.
- C) relied upon her advanced education in art, having earned a bachelor's and a master's degree.
- D) gravitated toward natural subjects such as forests, mountains, and sunsets.

36

- A) NO CHANGE
- B) expressive
- C) voluble
- D) explicative

37

The writer is considering deleting the underlined portion, adjusting the punctuation as needed. Should the underlined portion be kept or deleted?

- A) Kept, because it clarifies the point that precedes it in the sentence.
- B) Kept, because it summarizes the discussion in the paragraph.
- C) Deleted, because it adds irrelevant information to the sentence.
- D) Deleted, because it repeats a claim made in the previous paragraph.

After the 1969 moon landing, Thomas created some of her most famous pieces, in which she imagined what **38** one might see from high in the sky and what Earth looks like from space? In 1970's whimsically titled *Snoopy Sees Earth Wrapped in Sunset*, a large circle made up of dashed, vertical lines of red, yellow, and orange is set against a mottled dark-orange background. The painting **39** extracts a sense of awe at the **40** site of a planet adrift in the solar system. Also painted in 1970, *Apollo 12 "Splash Down"* employs the same dashed lines—though

38

- A) NO CHANGE
- B) might one see from high in the sky and what does Earth look like from space.
- C) might one see from high in the sky and what does Earth look like from space?
- D) one might see from high in the sky and what Earth looks like from space.

39

- A) NO CHANGE
- B) collects
- C) evokes
- D) raises

40

- A) NO CHANGE
- B) site for
- C) sight of
- D) sight for

this time horizontal rather than vertical—in a rainbow of vibrant colors to suggest a spacecraft completing **41** it's descent to Earth. **42** In 1972 Thomas continued to explore her abstract representations of space in *Starry Night and the Astronauts*. The canvas is taken up almost entirely by a large field of uneven strokes in various shades of blue. Suspended in the blue field is an incongruous shape isolated in the upper right-hand corner, suggesting a capsule shooting through space. Paintings like these resonated with a public already enthralled by the expanding reach of human exploration.

41

- A) NO CHANGE
- B) its
- C) their
- D) they're

42

At this point, the writer is considering adding the following sentence.

Nonetheless, Thomas still often depicted scenes from nature in her abstract works, such as in her 1972 painting *Arboretum Presents White Dogwood*.

Should the writer make this addition here?

- A) Yes, because it provides context for Thomas's use of color in the paintings discussed in the paragraph.
- B) Yes, because it offers an additional example of works in Thomas's typical abstract style.
- C) No, because it interrupts the discussion of Thomas's spaceflight-inspired paintings with loosely related information.
- D) No, because it contradicts information about Thomas's use of natural scenes that was mentioned earlier in the paragraph.

Thomas continued to contemplate views from the air until the end of her career. She envisioned the experience of flight **43** vividly, imagining, in 1978, that “you streak through the clouds so fast you don’t know whether the flower below is a violet or what. You see only streaks of color.” **44** While her artistic styles before and after her retirement were disparate, Thomas’s depictions of speed, distance, and movement remain captivating.

43

- A) NO CHANGE
- B) vividly; imagined
- C) vividly she imagined
- D) vividly. Imagining,

44

Which choice provides the best transition to the information that follows in the sentence?

- A) NO CHANGE
- B) Even though her paintings became more monochromatic later in her career,
- C) Although spaceflight is no longer the novelty it was in the last century,
- D) Shown in galleries including the Baltimore Museum of Art and the Columbus Museum,

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Do not turn to any other section.**

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Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

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Questions 1-11 are based on the following passage.

Hip-Hop Breaks Out

In 1973 Clive **1** Campbell an aspiring disc jockey,
who performed under the name DJ Kool Herc, made his
debut when he provided music for a party in his
apartment building in the West Bronx, a section of New
York City. Although the funk and soul songs Herc
selected for partygoers to dance to may seem very
different from later hip-hop music, many music

1

- A) NO CHANGE
- B) Campbell, an aspiring disc jockey who performed under the name DJ Kool Herc,
- C) Campbell, an aspiring disc jockey, who performed under the name DJ Kool Herc
- D) Campbell, an aspiring disc jockey who performed under the name DJ Kool Herc

historians regard this party as an important event in the development of the genre. The interplay between **2** DJs; rappers, and dancers at gatherings like this one **3** have transformed the soundtrack of neighborhood parties in the 1970s into the internationally popular rap music of subsequent decades.

2

- A) NO CHANGE
- B) DJs rappers,
- C) DJs, rappers,
- D) DJs, rappers;

3

- A) NO CHANGE
- B) will transform
- C) transformed
- D) transform

People attended these parties not only to hear their favorite songs **4** but also to watch the “b-boys” and “b-girls,” dancers whose moves featured flips and dramatic poses. B-boys and b-girls saved their most impressive, acrobatic moves for the breaks in the **5** songs. In these sections, the vocals and most of the instruments fell away, leaving only the driving beat. **6** In this case, the dance style was called “breaking.” Herc and other DJs quickly learned to select songs based on their appealing breaks.

4

- A) NO CHANGE
- B) also
- C) and also
- D) as well as

5

Which choice most effectively combines the sentences at the underlined portion?

- A) songs; these breaks consisted of sections in which
- B) songs until
- C) songs, sections in which
- D) songs, and these are sections in which

6

- A) NO CHANGE
- B) For this reason,
- C) In other words,
- D) In fact,

7 Because of his skill at promoting his parties, Herc hit upon an innovative way of emphasizing the breaks in the songs he played, which he dubbed the merry-go-round technique. 8 Herc would spin two copies of the same record on different turntables, cuing up one record to play at the beginning of a break just as the other record was coming to the end. By repeating this technique over and over, 9 a song's break could extend from a short interlude lasting only a few seconds into a percussion breakdown that could go on for minutes. Other DJs

7

Which choice provides the best transition from the previous paragraph to this one?

- A) NO CHANGE
- B) Other DJs would eventually become more famous, but
- C) To provide more opportunities for the b-boys and b-girls to dance,
- D) Before rap music became popular worldwide,

8

The writer is considering deleting the underlined sentence. Should the sentence be kept or deleted?

- A) Kept, because it explains the merry-go-round technique introduced in the previous sentence.
- B) Kept, because it explains Herc's process of song selection mentioned in the previous paragraph.
- C) Deleted, because it diverts attention from the discussion of Herc as a musical innovator.
- D) Deleted, because it merely repeats information about Herc's performance style that is adequately explained elsewhere in the paragraph.

9

- A) NO CHANGE
- B) extending a song's break could be done
- C) it could extend a song's break
- D) he could extend a song's break

refined this technique by smoothly mixing beats from different songs together and **10** by assuming similarly inventive names when they performed.

Rapping, which began as simple banter with the audience, evolved alongside DJing and breaking to add another layer of sophistication to the hip-hop scene. At first, rappers would use a microphone to call out short rhymes and catchphrases to encourage the dancers and set the mood—Herc did this himself at early performances before ceding the microphone to other rappers. As time went on, some rappers began to memorize long, cohesive flows of rhyming lyrics that could be recited along with the DJ’s beats.

By the end of the 1970s, hip-hop was expanding **11** beyond its source in the neighborhoods where it had originated and beginning to be played on the radio. The sounds that Herc had used to inspire b-boys and b-girls at house parties in the Bronx were on their way to becoming a global musical phenomenon.

10

The writer wants to provide a second example that supports the point being made in the sentence. Which choice best accomplishes this goal?

- A) NO CHANGE
- B) by scratching records to create a unique form of percussion.
- C) were sometimes able to reach a broader audience.
- D) could be fiercely competitive in their drive to be the best.

11

- A) NO CHANGE
- B) to grow beyond the boundaries of
- C) and growing outside
- D) beyond

Questions 12-22 are based on the following passage and supplementary material.

A Better View for Early Tetrapods

— 1 —

Around 385 million years ago, the first vertebrates moved out of the water and onto land. While it has long been thought that limbs and lungs were the crucial adaptations to appear prior to terrestrial living, neuroscientist Malcolm MacIver presents a compelling new hypothesis. MacIver argues that, preceding vertebrate terrestriality, improvements in vertebrate vision provided these water-dwelling animals with vital information about **12** its surroundings and aided them in becoming fully terrestrial. MacIver’s “buena vista” (good view) hypothesis offers **13** novel insights into the visual and behavioral ecology of these ancient vertebrates and enhances our understanding of the water-to-land transition.

12

- A) NO CHANGE
- B) it’s
- C) they’re
- D) their

13

- A) NO CHANGE
- B) exotic
- C) avant-garde
- D) unwonted

— 2 —

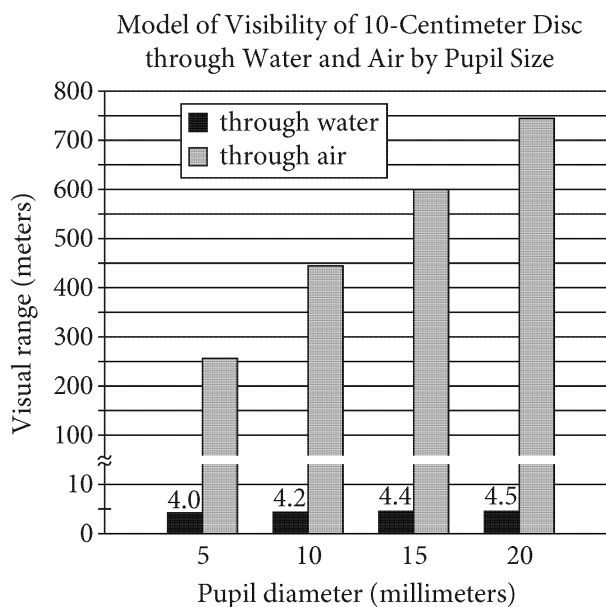
MacIver supports his hypothesis with a convincing array of computational and paleontological evidence. Working with paleontologist Lars Schmitz, MacIver analyzed skulls of fifty-nine early **14** tetrapods; the earliest known limbed but still aquatic vertebrates from the transitional period. The scientists discovered that among certain tetrapods eye socket (and thus pupil) size tripled and eye location changed from the sides to the top of the head.

14

- A) NO CHANGE
- B) tetrapods, the
- C) tetrapods, they are the
- D) tetrapods. The

— 3 —

Using computational modeling, MacIver and Schmitz simulated the visibility of a 10-centimeter black disc **15** with two types of tetrapods. When the view of the disc through water was simulated, a tripling of pupil size from 5 to 15 millimeters yielded an increase in visual range of **16** less than 0.5 meter. This demonstrated that larger eyes would have **17** skimmed on benefits to animals viewing their surroundings through water, as they would have still been limited to seeing and **18** able to react to only close-range objects, such as predators or prey. **19** Likewise, the same tripling of pupil size increased the visual range to a remarkable 600 meters when the scientists simulated the view of the disc through air.



Adapted from Jennifer Ouellette, "Why Did Life Move to Land? For the View." ©2017 by Quanta Magazine.

15

Which choice provides the most accurate description of the data represented in the graph?

- A) NO CHANGE
- B) in 100-meter increments.
- C) at a fixed visual range.
- D) through water and through air.

16

Which choice accurately represents the information in the graph?

- A) NO CHANGE
- B) between 4 and 5 meters.
- C) between 200 and 300 meters.
- D) more than 400 meters.

17

- A) NO CHANGE
- B) dished out the measliest of
- C) short-changed on
- D) offered paltry

18

- A) NO CHANGE
- B) have been reacting
- C) reacting
- D) react

19

- A) NO CHANGE
- B) As a result,
- C) In contrast,
- D) Furthermore,

— 4 —

Such improvements in aerial visual acuity would have had profound behavioral implications for early tetrapods, initiating their eventual transition to land. Assuming a crocodilian hunting posture—with body submerged, eyes above water—the animals could use their long-range aerial vision to more strategically evade predators and pursue prey. Of course, the emergence of limbs and lungs **20** had ultimately enabled these early vertebrates to walk and breathe as fully terrestrial **21** animals: however, as evidenced by MacIver’s research, it was the better view of unexploited food sources above the water’s surface that compelled certain tetrapods to leave the water in the first place.

Question 22 asks about the previous passage as a whole.

20

- A) NO CHANGE
- B) will ultimately enable
- C) is ultimately enabling
- D) would ultimately enable

21

- A) NO CHANGE
- B) animals, however:
- C) animals; however,
- D) animals, however;

Think about the previous passage as a whole as you answer question 22.

22

The writer wants to add the following sentence to the passage.

Surprisingly, the changes occurred prior to the emergence of lungs and weight-bearing limbs, suggesting that these larger-eyed aquatic vertebrates were likely using their eyes above water.

The best placement for the sentence is at the end of

- A) paragraph 1.
- B) paragraph 2.
- C) paragraph 3.
- D) paragraph 4.

Questions 23-33 are based on the following passage.

A Sea of Possibilities

Greg Marshall has a three-stage response to new **23** gadgets, first, “That’s really cool,” then, “I need one of those,” and finally, “What is it?” **24** However, when he first saw a 3-D printer more than fifteen years ago, the Canadian naval architect was mesmerized and decided to

23

- A) NO CHANGE
- B) gadgets, first:
- C) gadgets; first,
- D) gadgets: first,

24

- A) NO CHANGE
- B) Nonetheless,
- C) Moreover,
- D) DELETE the underlined portion, adjusting the capitalization as needed.

purchase one, though he wasn't exactly sure what it could be used for. **25** Marshall initially printed scale models of yacht designs for his clients, but **26** now he has found a grander purpose, intrigued by advances in 3-D printing, for this technology—printing entire yachts.

25

At this point, the writer is considering adding the following sentence.

Marshall operates out of Victoria, British Columbia.

Should the writer make this addition here?

- A) Yes, because it presents a detail about Marshall's life as a naval architect that is essential to the passage.
- B) Yes, because it provides a logical transition to the next sentence.
- C) No, because it interrupts the narrative of Marshall's first experience with 3-D printing technology.
- D) No, because it contradicts information stated later in the passage.

26

- A) NO CHANGE
- B) now, intrigued by advances in 3-D printing, he has found a grander purpose for this technology—printing entire yachts.
- C) now he has found a grander purpose for this technology intrigued by advances in 3-D printing—printing entire yachts.
- D) now he has found a grander purpose for this technology—printing entire yachts intrigued by advances in 3-D printing.

At the 2017 Superyacht Design Symposium in Kitzbühel, Austria, Marshall made a case for printing ships using titanium, a **27** high-strength, low-density metal that resists corrosion. Materials and manufacturing methods often constrain the choices that naval architects make when designing the hulls, superstructures, and interiors of vessels. However, Marshall claimed that because 3-D printers operate at the level of microns (a human hair is 75 microns thick), naval architects will soon have the freedom to “do all sorts of things that are just not practical to do on a yacht if it’s manually built,” such as creating pipes within pipes, integrated wiring, and complicated manifolds. **28** “The ability to conduct a business around [3-D printing] is much more predictable,” said Marshall. Far from being a novelty, this technology has the potential to have an impact on the entire industry, overturning traditional shipbuilding methods.

Marshall isn’t the only naval architect charting a new course for the field. Oskar Levander, naval architect and vice president of innovation at Rolls-Royce (the engineering firm, not the automaker), wants to incorporate autonomous vehicle technology into cargo ships so they can cruise **29** from port to port without a crew. “These ships will represent some of the most fundamental changes seen by the shipping industry in a long time,” Levander wrote for the magazine *IEEE Spectrum*.

27

- A) NO CHANGE
- B) high-strength, less dense
- C) strong, lower-density
- D) higher-strength, low-density

28

Which quotation from Marshall most logically builds on the claim made in the previous sentence?

- A) NO CHANGE
- B) “Whatever we can imagine in our heads,” said Marshall, “we can actually translate to the shipyard.”
- C) “As we’re seeing, these [printers] are getting larger and larger,” said Marshall, noting that they’re “still not in the resolution we need, but getting close.”
- D) “I’m always amazed at how many parts get flown from all over the world to create one of these superyachts,” said Marshall.

29

- A) NO CHANGE
- B) to one port after another without a crew to operate the cargo ship.
- C) and transport cargo between ports without a crew of sailors on board.
- D) to distant ports using autonomous vehicle technology.

[1] Like self-driving cars, **30** it will operate using sophisticated navigation and communication systems.

[2] While much of the necessary technology exists now, Levander predicts that these ships will start small. [3] The first vessel will likely be a small ship, such as a ferry or tugboat, operating in a specific area. [4] By 2025,

31 pretty much all of the biggest ships will use the technology, with remotely controlled or completely autonomous ships **32** becoming a regular sight on the open ocean. **33**

New technology will continue to revolutionize old industries. As it does, other naval architects will no doubt follow the example of Marshall and Levander, embracing the sea of possibilities these advances offer.

30

- A) NO CHANGE
- B) self-sailing ships
- C) ships
- D) some

31

- A) NO CHANGE
- B) some really big boats will have installed
- C) weighty wanderers of the waves will have hoisted aboard
- D) larger vessels will have incorporated

32

- A) NO CHANGE
- B) become
- C) becomes
- D) have become

33

The writer plans to add the following sentence to the paragraph.

He expects that this ship will retain a crew, but only for nonnavigational responsibilities.

To make the paragraph most logical, the sentence should be placed

- A) after sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

Questions 34-44 are based on the following passage.

Going with the Grain

Growth in grain production was one of the United States' great successes in the nineteenth century. In fact, from 1839 to 1909, US grain output increased almost eightfold. Economists usually attribute this growth to technological advances such as mechanical farm equipment and barbed wire because new tools enabled farmers to use resources more efficiently. William Parker and Judith Klein, for example, argue that mechanical planters and harvesters reduced the amount of human labor required to produce each bushel of grain. Richard Hornbeck emphasizes the role of barbed wire in reducing the cost of protecting crops from free-range **34** cattle. Allowing farmers to focus their resources on crop production. Arguments such as these, while persuasive, treat crops as **35** essentially static entities that change very little and overlook a key factor in the growth of grain production: **36** westward expansion on the North American continent.

34

- A) NO CHANGE
- B) cattle, barbed wire thus allowed
- C) cattle, this allowed
- D) cattle, thereby allowing

35

- A) NO CHANGE
- B) unchanging entities or substances, in essence,
- C) essentially static entities
- D) entities, in essence,

36

Which choice most effectively establishes the main topic of the passage?

- A) NO CHANGE
- B) the growth of the labor force on western farms.
- C) farmers' experiments with crop varieties.
- D) major changes in federal land policy.

Farmers did not simply grow “wheat,” “oats,” or “corn”: they grew particular varieties of crops, and **37** they experimented with various poisons to keep weeds and insects at bay. Economists Alan Olmstead and Paul Rhode give as an example farmers’ experiments with winter wheats—wheats planted in autumn and harvested in spring—as **38** it expanded westward. Winter wheat varieties that thrived in the eastern United States struggled in midwestern states such as Kansas and Nebraska, where the winters were harsher. Midwestern farmers thus tried new **39** types. The new types were imported from other countries, or they were created through crossbreeding existing wheats. A solution presented itself when German Mennonites introduced Turkey Red wheat, a hardy variety from southern Russia, to the United States in the 1870s. Farmers adopted this variety, which would eventually account for 99 percent of all hard winter **40** wheat planted: in the United States in the early twentieth century.

37

Which choice most effectively establishes one of the main ideas of the paragraph?

- A) NO CHANGE
- B) experiments in the twentieth century would result in even more crop varieties.
- C) they built homes for their families, experimenting with various designs in adapting to the harsh climate.
- D) experimentation was necessary to find ones that would thrive in a given environment.

38

- A) NO CHANGE
- B) economists
- C) the country
- D) both

39

Which choice most effectively combines the sentences at the underlined portion?

- A) types—which they achieved by importation of new types or creation of them
- B) types, either imported from other countries or created
- C) types, and such new types were imported from other countries or created
- D) types by either importing these new types or creating them

40

- A) NO CHANGE
- B) wheat; planted
- C) wheat planted
- D) wheat planted,

[1] Even when farmers found a variety suited to the climate, they still had to make sure that it was resistant to pests and disease. [2] Farmers initially planted rust-resistant Red Fife, but a rust emerged later that could destroy this wheat, so they were forced to experiment again. [3] This cycle repeated itself several times, making biological innovation a never-ending endeavor. **41**

41

The writer wants to add the following sentence to this paragraph.

Wheat rust, a fungal disease that can destroy a whole crop in weeks, presented a particular challenge.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

Recognizing that farmers constantly experimented to find the best crop varieties **42** places mechanical innovation in an appropriate historical context. Mechanization certainly boosted production, but only if crops **43** were able to survive threats to their existence. **44** The increasing use of chemical pesticides after the Second World War would further enhance the remarkable productivity of US farms.

42

- A) NO CHANGE
- B) place
- C) have placed
- D) are placing

43

- A) NO CHANGE
- B) are
- C) will be
- D) would have been

44

Which choice provides the most effective conclusion to the paragraph and the passage?

- A) NO CHANGE
- B) Regular access to electricity on US farms would further revolutionize farm machinery in the twentieth century.
- C) Nonetheless, barbed wire has continued to be an effective means of restraining cattle on properties in the western United States.
- D) Harvesters and barbed wire would have been useless if a crop couldn't survive the winter or the next wave of rust.

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Questions 1-11 are based on the following passage.

Thoreau and *Cosmos*

“Every poet has trembled on the verge of science,” wrote Henry David Thoreau, the **1** American: essayist, poet, and naturalist. Like Thoreau, many Western philosophers and artists of the late eighteenth and early nineteenth centuries—including the idealists in

1

- A) NO CHANGE
- B) American essayist, poet,
- C) American—essayist, poet
- D) American essayist; poet

Germany, the Romantics in Britain, and the transcendentalists in the United States— **2** struggled with what they saw as the cold, impersonal empiricism stemming from the scientific revolution and Enlightenment era. Science diminished the mystery of the natural world with every new discovery, they argued, and as a result, nature was best experienced through more subjective means, such as art and intuition. Thoreau, however, found a way to balance the objectivity of science with the subjectivity of the imagination: the key lay in the writings of **3** the well-known scientist whose work was widely celebrated, Alexander von Humboldt.

2

Which choice most effectively sets up the discussion of science that follows in the paragraph?

- A) NO CHANGE
- B) were at least similar to scientists in that they too passionately pursued what they believed to be truth.
- C) felt that works containing technical and scientific language would not be very interesting for the everyday reader.
- D) placed special emphasis on the wilderness and sublime landscapes.

3

- A) NO CHANGE
- B) one of the preeminent scientists of the day,
- C) a well-known scientist, the famous
- D) a preeminent scientist who was prominent at the time,

[1] A gifted polymath, Humboldt contributed to the modern conceptualization of nature as an interconnected web of life. [2] Humboldt argued that viewing science as a collection of unconnected facts would lead one to believe that **4** scientists detailed measurements “chill the feelings” as well as “diminish the nobler enjoyments, attendant upon a contemplation of nature.” [3] However, if one considered precise observations as a way to gain knowledge of a larger, connected whole, then science could reveal the “unity in diversity of phenomena.” **5**

4

- A) NO CHANGE
- B) scientist’s detailed measurement’s
- C) scientists’ detailed measurement’s
- D) scientists’ detailed measurements

5

The writer wants to add the following sentence to this paragraph.

His five-volume book, *Cosmos: A Sketch of a Physical Description of the Universe* (first published in 1845), provided an accessible introduction to the physical world for nonacademic readers, covering everything from astronomy to geology to biology.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

Upon reading *Cosmos*, Thoreau began **6** charting details about the changing seasons. Earlier in his life, Thoreau had kept separate books for recording poetry and **7** facts. In 1849, in contrast to those earlier years, Thoreau began keeping one solitary journal, which he filled with details from his daily walk in the woods.

8 Combining meticulous notes about nature, such as the dates of the first flowering of dozens of plant species around his hometown of Concord, Massachusetts, with musings on the relationship between humanity and the cosmos. Reflecting on **9** our approach, Thoreau wrote, “A true account of the actual is the rarest poetry.”

6

Which choice most effectively sets up the examples that follow in the paragraph?

- A) NO CHANGE
- B) working for Louis Agassiz, a Harvard researcher who studied animals and their environments.
- C) challenging the theories of nature put forth by earlier transcendentalist writers.
- D) using detailed observations as a means to contemplate human beings’ place in the universe.

7

Which choice most effectively combines the sentences at the underlined portion?

- A) facts, but in 1849 he began keeping a single, unified
- B) facts; later, in 1849, Thoreau afterward kept one solitary
- C) facts, which was a contrast to the years that would follow, when Thoreau instead kept a single, unified
- D) facts because these early books were followed by Thoreau’s later, unified

8

- A) NO CHANGE
- B) Thoreau combining
- C) A combination of
- D) His entries combined

9

- A) NO CHANGE
- B) his
- C) its
- D) my

Thoreau's journal eventually grew to more than two million words, and its contents **10** detected their route into his literary works, such as *Walden*, whose manuscript he revised six times to include his growing knowledge of the ecology of Walden Pond. Humboldt had provided Thoreau with a worldview that allowed him—as historian Andrea Wulf puts it—to **11** be “deeply affected by the rhythm of the natural world.”

10

- A) NO CHANGE
- B) made their avenue
- C) discovered their route
- D) found their way

11

Which quotation from Andrea Wulf's article in *The Atlantic* about Thoreau and Humboldt provides the most logical conclusion to the passage?

- A) NO CHANGE
- B) “set up a new and systematic daily regimen.”
- C) combine “the factual and the wonderful.”
- D) wonder “whether anything he ever wrote could be better than his journal.”

Questions 12-22 are based on the following passage and supplementary material.

Self-Domesticating Mice

Animal domestication—the process of breeding tame animals over time to be more docile and suitable for human care and use—doesn’t just result in animals that are behaviorally different from their wild counterparts; it also **12** turns out critters with a whole lot of physical differences. These differences—which include white patches in the fur, floppy **13** ears, and diminished snout, tooth, and brain size—are collectively known as “domestication syndrome.” Scientists have long believed that deliberate human intervention is the cause of domestication syndrome, **14** a process that began when humans first selectively bred wild animals for desirable traits around 10,000 to 15,000 years ago.

Dr. Anna Lindholm and her colleagues at the University of Zurich **15** discovered this phenomenon by examining a population of wild house mice, *Mus musculus domesticus*, in an empty barn in Illnau, Switzerland. **16** Meanwhile, from 2007 to 2016, the researchers monitored the mice and measured various physical aspects of the animals, including their head length, body weight, and presence of white patches. Although they had to be occasionally handled for measuring, the mice were otherwise left alone, allowing them to reproduce without intentional human selection.

12

- A) NO CHANGE
- B) brings forth animals with a great multitude
- C) produces animals with an array
- D) makes for creatures with a bunch

13

- A) NO CHANGE
- B) ears—and
- C) ears; and
- D) ears, and,

14

Which choice best introduces the passage’s main discussion?

- A) NO CHANGE
- B) which has been shown to occur through three distinct evolutionary pathways: commensal, prey, and directed.
- C) which may occur when humans intentionally tame wild species for use as farm animals or pets.
- D) but recent research has shown that traits corresponding to this syndrome can occur simply through animals’ prolonged exposure to humans.

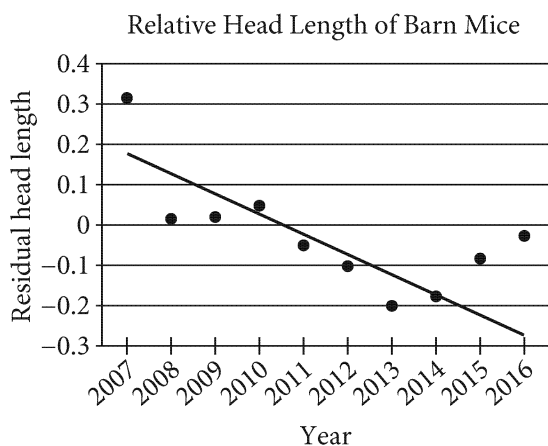
15

- A) NO CHANGE
- B) were discovering
- C) had discovered
- D) could have discovered

16

- A) NO CHANGE
- B) On the other hand,
- C) For this reason,
- D) DELETE the underlined portion, adjusting the capitalization as needed.

Over several reproductive generations, the mice showed physiological changes consistent with domestication syndrome. Body weight decreased significantly, while the number of adult mice with white patches increased from one to thirty-two. Similarly, the researchers found that there was a considerable decrease in head length relative to body weight (residual head length) from **17** 2014 to 2016 and that the trend in residual head length generally decreased over the course of the examination period. The results suggested that **18** although the residual head length was nearly identical in 2008 and 2009, simple exposure to humans had caused domestication syndrome in the mice.



Adapted from Madeleine Geiger, Marcelo R. Sánchez-Villagra, and Anna K. Lindholm, "A Longitudinal Study of Phenotypic Changes in Early Domestication of House Mice." ©2018 by Madeleine Geiger, Marcelo R. Sánchez-Villagra, and Anna K. Lindholm.

17

Which choice provides an accurate interpretation of the data in the graph?

- A) NO CHANGE
- B) 2007 to 2008
- C) 2011 to 2016
- D) 2013 to 2014

18

The writer is considering deleting the underlined portion. Should the underlined portion be kept or deleted?

- A) Kept, because it provides an explanation for a seeming inconsistency between the data in the graph and the researchers' conclusions.
- B) Kept, because it uses relevant information from the graph to show that some mice did not show signs of domestication syndrome until later in the study.
- C) Deleted, because it highlights data from the graph that are not relevant to the sentence's claim about the study's overall results.
- D) Deleted, because it provides inaccurate information from the graph.

The researchers suggest that the population of wild house mice self-domesticated, a theory supported by genetic evidence. Scientists attribute domestication to a deficit in neural crest cells, a type of stem cell, during **19** development that results in smaller, less active adrenal glands (responsible for stress and fear responses) and therefore more docile animals. These stem cells also influence snout size and fur color. The mice that had this deficit were likely more comfortable with human interaction, a key component of **20** tameness, stayed around the barn, while the more apprehensive mice fled. Over time, the tamer mice reproduced, passing that tameness on to **21** one's offspring, eventually resulting in a domesticated population. These results have important implications for understanding the domestication of other species and demonstrate how **22** they may be unknowingly affecting the animals around them.

19

- A) NO CHANGE
- B) advancement
- C) acceleration
- D) progress

20

- A) NO CHANGE
- B) tameness, they
- C) tameness; but
- D) tameness, and

21

- A) NO CHANGE
- B) those
- C) its
- D) their

22

- A) NO CHANGE
- B) the results
- C) humans
- D) DELETE the underlined portion.

Questions 23-33 are based on the following passage.

“Story of Your Life”

In the early 1990s, acclaimed science fiction writer Ted Chiang was suffering from a stubborn case of writer’s block. That changed when he was suddenly **23** hit unexpectedly with a concept for a new story: a woman is tasked with translating an alien species’ language, one so different from human languages that it changes her perception of reality. Although Chiang finally had **24** one, he felt unprepared to convincingly convey the experience of learning such a language.

23

- A) NO CHANGE
- B) hit by an idea and concept
- C) struck with the idea
- D) struck by a fresh idea that he could use

24

- A) NO CHANGE
- B) it,
- C) a story,
- D) recognition,

[1] To solve this problem, Chiang decided to develop an understanding of linguistics, the study of the nature, structure, and history of language. [2] During his research, he learned about a theory known as linguistic determinism, which **25** assert that language is not only a tool to communicate information about the world but also a lens through which people perceive the world. [3] For instance, linguists have found that some Australian Aboriginal languages always express the location of one's limbs in terms of cardinal directions—one might speak of one's "east hand" rather than "left hand"—**26** which speakers of these languages are constantly aware of their geographic orientation as a result. **27**

25

- A) NO CHANGE
- B) have asserted
- C) are asserting
- D) asserts

26

- A) NO CHANGE
- B) being that
- C) and that
- D) DELETE the underlined portion.

27

The writer wants to add the following sentence to this paragraph.

Chiang felt that linguistic determinism would apply perfectly to his story.

The best placement for the sentence is

- A) before sentence 1.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 3.

After more than four years of research, Chiang was able to use this knowledge to create the novella “Story of Your Life.” In it, the **28** protagonist: Dr. Louise Banks, discovers that members of the alien species, known as heptapods, write their sentences as geometric patterns that look “like frost on a windowpane” and have no separate words or word order. **29** On the other hand, heptapods perceive time simultaneously rather than sequentially. **30** Dr. Banks spends increasing amounts of her time attempting to communicate with the heptapods—she experiences the events of her life all at once rather than in order, allowing her to remember the life of the daughter she hasn’t yet had. **31** The man with whom she will eventually have her daughter is a physicist whose work informs her understanding of time in the story. “I remember one afternoon when you are five years old,” Banks narrates. “You’ll be coloring with your

28

- A) NO CHANGE
- B) protagonist, Dr. Louise Banks,
- C) protagonist Dr. Louise Banks,
- D) protagonist, Dr. Louise Banks

29

- A) NO CHANGE
- B) As a result,
- C) To begin with,
- D) For instance,

30

Which choice most effectively sets up the information that follows in the sentence?

- A) NO CHANGE
- B) As Dr. Banks becomes fluent in this language, she begins to perceive life as a heptapod does—
- C) While other experts focus on the heptapods’ scientific and mathematical knowledge, Dr. Banks deciphers their language—
- D) Dr. Banks learns that the heptapods conceive of free will in a different way than humans do—

31

Which choice most effectively sets up the quotation from “Story of Your Life”?

- A) NO CHANGE
- B) Personal responsibility is one of several major themes that arise in the story.
- C) This mental rewiring is cleverly portrayed in the story’s mixing of tenses.
- D) The story raises complicated questions about the impact our choices have on our lives.

crayons while I grade papers.” Chiang uses this narrative to explore **32** how to add greater meaning to individual moments. The narrative suggests that one way of doing so is to view life as a whole.

When it was published in 1998, “Story of Your Life” **33** will have become a favorite of fans and critics alike. It won the prestigious Nebula Award for science fiction and was adapted into the 2016 Oscar-winning Hollywood film *Arrival*. Chiang’s long, meticulous effort to bring his story to life paid off; he’d produced one of the most beloved science fiction stories ever written.

32

Which choice most effectively combines the sentences at the underlined portion?

- A) how viewing life as a whole can add greater meaning to individual moments.
- B) ways in which one can add greater meaning to moments, like by viewing one’s life as a whole.
- C) the way that adding meaning to individual moments can be done by viewing life as a whole.
- D) how, if one views one’s life as a whole, it can add meaning to one’s moments.

33

- A) NO CHANGE
- B) became
- C) had become
- D) was becoming

Questions 34-44 are based on the following passage.

Open the Books

In a 1995 book on management, author John **34** Case tells the story, of a hotel that was losing money because it was only two-thirds full (an average nightly occupancy rate of 67 percent). **35** Satisfied with these results, the hotel manager consulted a successful CEO, Jack Stack, who advised him to tell all his employees, from front-desk staff to housekeepers, about the low occupancy rate and its implications. The **36** manager, in doing that and more, displayed the occupancy rate every day. He also offered a bonus to every employee if the rate rose to 72 percent and stayed there. Staff began to work together to raise the rate by improving conditions at the hotel, and after eighteen months the rate was an astounding 85 percent. Stack's method, known as open-book management **37** (OBM); may seem like common sense, but relatively few top companies have adopted it. Here's why they should.

34

- A) NO CHANGE
- B) Case tells the story
- C) Case, tells the story
- D) Case, tells the story,

35

Which choice provides the most effective transition to the information that follows in the paragraph?

- A) NO CHANGE
- B) In spite of such difficulties,
- C) Hoping for a turnaround,
- D) Although he needed advice,

36

Which choice most effectively combines the sentences at the underlined portion?

- A) manager did that and more, displaying the occupancy rate every day and offering
- B) manager, who did that and more, displayed the occupancy rate every day, also offering
- C) manager did that and more; he also displayed the occupancy rate every day and offered
- D) manager (who did that and more) displayed the occupancy rate every day; plus, he offered

37

- A) NO CHANGE
- B) (OBM)
- C) (OBM),
- D) (OBM)—

OBM has two core components: making financial and other corporate data available to all employees and **38** training those employees in OBM practices. Stack's company, SRC, which rebuilds engines for trucks and other heavy equipment, shows how it works. SRC posts information about the company's productivity and financial health throughout **39** its facilities. Because all employees either own stock in the company or earn bonuses based on the company's financial performance, they see a tangible link between the company's financial data and their own rewards, which motivates them to make an extra effort. Research supports the wisdom of the OBM approach: a recent study conducted by the National Center for Employee Ownership on over fifty OBM companies showed that these companies **40** on an annual basis enjoyed yearly sales-growth increases as much as 2.2 percent greater than those of non-OBM competitors.

38

Which choice most effectively sets up the information that follows in the paragraph?

- A) NO CHANGE
- B) attracting customers away from rival companies.
- C) clearing up misconceptions about OBM.
- D) tying employees' compensation to that data.

39

- A) NO CHANGE
- B) it's
- C) their
- D) they're

40

- A) NO CHANGE
- B) annually enjoyed yearly
- C) enjoyed annual
- D) enjoyed yearly annual

[1] So why aren't more companies using OBM?

[2] Business leaders have voiced a couple of concerns.

[3] One is that sensitive financial data, if disclosed, could be exploited by competitors. [4] A second is that employees who learn how much a company makes and spends, **41** regardless of whether the company is making large profits, might become resentful about having to

41

Which choice best supports the point being made in the sentence?

- A) NO CHANGE
- B) even though they don't have comparable data from other companies,
- C) assuming a company's spending changes from year to year,
- D) especially if some of the spending seems wasteful or unfair,

economize in their own work. [5] However, evidence suggests that employees who **42** had understood the relationship between their daily responsibilities and the company's overall financial **43** health are likely to become more cost conscious, not less. **44**

In short, more business leaders should open their books to employees. It may feel like a risk at first, but as John Case, Jack Stack, and others have shown, it's a risk worth taking.

42

- A) NO CHANGE
- B) understand
- C) are understanding
- D) will understand

43

- A) NO CHANGE
- B) health, they
- C) health;
- D) health, so they

44

The writer wants to add the following sentence to this paragraph.

OBM practitioners counter that employees whose compensation is tied to company performance will be reluctant to leak information that could hurt the company.

The best placement for the sentence is

- A) after sentence 1.
- B) after sentence 2.
- C) after sentence 3.
- D) after sentence 4.

STOP

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

March 13, 2021 US (Official)

ANSWER KEY

Reading Test Answers

1 A	12 C	23 D	34 D	45 D
2 D	13 D	24 A	35 C	46 A
3 D	14 B	25 D	36 B	47 C
4 C	15 B	26 C	37 D	48 D
5 B	16 C	27 B	38 B	49 A
6 A	17 A	28 B	39 A	50 B
7 C	18 C	29 A	40 C	51 C
8 B	19 D	30 D	41 A	52 A
9 B	20 A	31 B	42 A	
10 B	21 D	32 B	43 D	
11 D	22 C	33 A	44 C	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 A	12 B	23 D	34 D
2 B	13 D	24 A	35 C
3 C	14 C	25 C	36 D
4 B	15 A	26 C	37 B
5 C	16 D	27 D	38 B
6 D	17 A	28 C	39 B
7 B	18 D	29 A	40 A
8 C	19 B	30 D	41 A
9 D	20 B	31 A	42 B
10 A	21 A	32 C	43 D
11 C	22 B	33 B	44 C

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 D	11 D
2 A	12 D
3 B	13 A
4 C	14 C
5 B	15 B
6 C	16 2
7 C	17 56
8 B	18 3
9 A	19 $5/3$, 1.66, 1.67
10 D	20 $1/2$, .5

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 D	11 B	21 D	31 80
2 B	12 C	22 C	32 10
3 A	13 C	23 A	33 $4/5$, .8
4 C	14 A	24 B	34 863
5 C	15 A	25 C	35 $12/5$, 2.4
6 C	16 D	26 C	36 5000
7 B	17 D	27 B	37 $50/3$, 16.6, 16.7
8 D	18 D	28 D	38 16
9 B	19 A	29 A	
10 B	20 A	30 C	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

March 13, 2021 International

ANSWER KEY

Reading Test Answers

1 D	12 C	23 D	34 B	45 A
2 A	13 C	24 B	35 C	46 B
3 C	14 A	25 C	36 B	47 A
4 D	15 C	26 A	37 C	48 D
5 B	16 A	27 D	38 D	49 C
6 B	17 B	28 C	39 A	50 B
7 C	18 D	29 A	40 C	51 C
8 C	19 D	30 D	41 B	52 D
9 D	20 B	31 B	42 D	
10 A	21 D	32 A	43 B	
11 A	22 C	33 D	44 D	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 B	12 D	23 C	34 A
2 A	13 B	24 D	35 B
3 B	14 C	25 B	36 C
4 A	15 A	26 D	37 C
5 D	16 D	27 A	38 D
6 A	17 D	28 B	39 B
7 B	18 B	29 C	40 D
8 A	19 B	30 D	41 D
9 C	20 A	31 B	42 C
10 D	21 D	32 C	43 A
11 C	22 B	33 C	44 D

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 A	11 A
2 C	12 A
3 D	13 D
4 B	14 A
5 B	15 C
6 D	16 7
7 D	17 300
8 B	18 42
9 D	19 6
10 C	20 8

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 B	11 C	21 D	31 8
2 B	12 B	22 B	32 24
3 A	13 C	23 D	33 40
4 C	14 B	24 C	34 2
5 A	15 D	25 D	35 $2/5$, .4
6 C	16 A	26 C	36 $1/2$, .5
7 A	17 D	27 D	37 4.3
8 B	18 C	28 A	38 .613
9 B	19 B	29 D	
10 D	20 A	30 B	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

April 13, 2021 US School Day (Official)

ANSWER KEY

Reading Test Answers

1 D	12 B	23 D	34 B	45 C
2 A	13 C	24 C	35 B	46 A
3 D	14 B	25 C	36 B	47 D
4 B	15 D	26 C	37 D	48 B
5 D	16 D	27 D	38 A	49 B
6 B	17 C	28 B	39 B	50 B
7 A	18 C	29 D	40 C	51 A
8 C	19 A	30 A	41 D	52 D
9 A	20 B	31 C	42 D	
10 A	21 B	32 A	43 B	
11 D	22 A	33 C	44 C	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 B	12 B	23 B	34 D
2 C	13 C	24 D	35 C
3 A	14 D	25 C	36 A
4 B	15 C	26 B	37 C
5 C	16 D	27 A	38 B
6 A	17 B	28 A	39 C
7 C	18 A	29 D	40 A
8 B	19 A	30 B	41 D
9 A	20 D	31 D	42 A
10 B	21 C	32 A	43 B
11 C	22 A	33 C	44 D

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 B	11 D
2 C	12 D
3 C	13 A
4 B	14 C
5 A	15 D
6 A	16 4
7 D	17 120
8 B	18 6
9 D	19 7
10 A	20 $\frac{1}{6}$, .166, .167

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 B	11 A	21 D	31 1422
2 A	12 A	22 B	32 56
3 D	13 C	23 D	33 900
4 C	14 B	24 B	34 4.5, $\frac{9}{2}$
5 B	15 C	25 C	35 40
6 D	16 D	26 A	36 1.25, $\frac{5}{4}$
7 D	17 B	27 A	37 5000
8 C	18 C	28 D	38 .375, $\frac{3}{8}$
9 C	19 D	29 D	
10 B	20 A	30 C	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

ANSWER KEY

Reading Test Answers

1 A	12 C	23 A	34 C	45 D
2 C	13 A	24 C	35 A	46 D
3 B	14 B	25 B	36 B	47 C
4 D	15 A	26 A	37 B	48 A
5 A	16 D	27 D	38 D	49 B
6 B	17 C	28 C	39 A	50 C
7 D	18 B	29 D	40 A	51 A
8 C	19 D	30 C	41 C	52 B
9 B	20 A	31 D	42 B	
10 D	21 D	32 B	43 B	
11 B	22 A	33 D	44 A	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 D	12 D	23 C	34 A
2 B	13 C	24 D	35 B
3 A	14 A	25 D	36 C
4 C	15 D	26 A	37 C
5 C	16 C	27 A	38 D
6 D	17 B	28 B	39 B
7 B	18 D	29 C	40 A
8 C	19 A	30 C	41 C
9 C	20 B	31 B	42 B
10 B	21 D	32 A	43 D
11 A	22 C	33 B	44 B

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 B	11 A
2 C	12 A
3 C	13 A
4 C	14 B
5 A	15 D
6 C	16 3
7 D	17 50
8 D	18 9
9 B	19 6
10 C	20 4

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 A	11 D	21 C	31 36
2 B	12 A	22 B	32 5
3 D	13 C	23 C	33 $\frac{1}{4}$, .25
4 C	14 A	24 D	34 7070
5 B	15 C	25 B	35 4
6 C	16 A	26 C	36 1.62
7 D	17 A	27 A	37 $\frac{1}{3}$, .333
8 C	18 A	28 D	38 1
9 D	19 C	29 B	
10 B	20 B	30 D	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

May 8, 2021 International (Official)

ANSWER KEY

Reading Test Answers

1 B	12 D	23 D	34 C	45 D
2 D	13 C	24 B	35 A	46 B
3 C	14 B	25 A	36 D	47 C
4 D	15 C	26 B	37 A	48 B
5 B	16 A	27 B	38 D	49 A
6 A	17 D	28 C	39 D	50 D
7 C	18 A	29 C	40 D	51 C
8 C	19 C	30 A	41 A	52 D
9 D	20 B	31 B	42 B	
10 A	21 C	32 A	43 B	
11 C	22 A	33 C	44 B	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 C	12 D	23 B	34 C
2 D	13 C	24 A	35 B
3 B	14 C	25 B	36 D
4 C	15 D	26 B	37 C
5 D	16 B	27 D	38 A
6 C	17 C	28 D	39 B
7 C	18 A	29 A	40 D
8 A	19 A	30 B	41 A
9 A	20 B	31 D	42 C
10 D	21 C	32 C	43 D
11 B	22 A	33 C	44 B

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 A	11 D
2 A	12 D
3 A	13 C
4 D	14 D
5 C	15 A
6 B	16 4
7 D	17 .5, 1/2
8 B	18 50
9 B	19 8100
10 C	20 .25, 1/4

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 D	11 C	21 A	31 576
2 C	12 D	22 D	32 $\frac{2}{9}$, .222
3 D	13 C	23 C	33 48
4 A	14 B	24 B	34 6
5 B	15 B	25 A	35 40
6 B	16 A	26 B	36 59
7 A	17 D	27 C	37 5
8 A	18 B	28 B	38 $\frac{5}{2}$, 2.5
9 A	19 D	29 C	
10 D	20 B	30 B	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

ANSWER KEY

Reading Test Answers

1 B	12 C	23 D	34 B	45 B
2 D	13 D	24 A	35 C	46 B
3 A	14 B	25 D	36 C	47 D
4 A	15 B	26 A	37 A	48 C
5 C	16 D	27 B	38 D	49 D
6 A	17 C	28 B	39 C	50 A
7 B	18 B	29 D	40 D	51 B
8 D	19 A	30 C	41 B	52 A
9 C	20 C	31 D	42 D	
10 A	21 D	32 A	43 B	
11 A	22 C	33 D	44 C	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 B	12 A	23 B	34 C
2 D	13 B	24 D	35 D
3 C	14 C	25 B	36 B
4 D	15 A	26 D	37 C
5 A	16 D	27 C	38 C
6 B	17 B	28 A	39 A
7 A	18 C	29 B	40 D
8 C	19 C	30 D	41 B
9 B	20 C	31 A	42 D
10 A	21 A	32 D	43 D
11 B	22 D	33 B	44 C

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 C	11 C
2 C	12 D
3 B	13 A
4 C	14 A
5 B	15 B
6 C	16 $\frac{4}{5}$, .8
7 D	17 2
8 D	18 5
9 A	19 4
10 D	20 11

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 A	11 D	21 A	31 3888
2 B	12 B	22 A	32 30
3 C	13 A	23 A	33 20
4 D	14 A	24 B	34 11
5 C	15 D	25 C	35 70
6 B	16 B	26 C	36 7
7 A	17 C	27 D	37 5
8 C	18 A	28 C	38 11
9 D	19 C	29 B	
10 B	20 D	30 B	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

August 28, 2021 International

ANSWER KEY

Reading Test Answers

1 B	12 D	23 D	34 C	45 C
2 C	13 B	24 B	35 D	46 A
3 A	14 D	25 B	36 A	47 C
4 D	15 B	26 A	37 B	48 B
5 D	16 A	27 D	38 D	49 A
6 A	17 B	28 B	39 D	50 D
7 C	18 A	29 D	40 C	51 B
8 C	19 D	30 D	41 A	52 A
9 B	20 C	31 C	42 B	
10 C	21 A	32 C	43 C	
11 A	22 C	33 B	44 B	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 A	12 C	23 C	34 C
2 B	13 A	24 B	35 B
3 D	14 C	25 B	36 B
4 D	15 B	26 A	37 C
5 C	16 B	27 B	38 D
6 D	17 C	28 D	39 A
7 D	18 D	29 C	40 C
8 A	19 D	30 C	41 A
9 A	20 C	31 A	42 D
10 A	21 D	32 D	43 D
11 B	22 B	33 C	44 B

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 A	11 A
2 B	12 B
3 B	13 D
4 B	14 D
5 A	15 C
6 C	16 9
7 D	17 0, 4
8 D	18 12
9 C	19 3
10 C	20 60

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 B	11 C	21 C	31 2
2 C	12 D	22 A	32 .4, 2/5
3 C	13 B	23 B	33 5
4 C	14 A	24 C	34 7
5 D	15 A	25 D	35 54.5
6 B	16 B	26 A	36 4
7 D	17 C	27 D	37 6
8 A	18 A	28 D	38 600
9 D	19 C	29 A	
10 B	20 D	30 A	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

October 2, 2021 US (Official)

ANSWER KEY

Reading Test Answers

1 B	12 B	23 C	34 B	45 D
2 C	13 D	24 D	35 D	46 A
3 A	14 C	25 B	36 D	47 B
4 A	15 B	26 C	37 D	48 B
5 D	16 D	27 D	38 C	49 B
6 C	17 C	28 D	39 A	50 D
7 C	18 B	29 C	40 A	51 D
8 D	19 A	30 B	41 C	52 C
9 C	20 B	31 C	42 B	
10 A	21 A	32 A	43 B	
11 A	22 C	33 B	44 A	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 C	12 D	23 D	34 B
2 D	13 D	24 B	35 D
3 C	14 B	25 C	36 A
4 B	15 C	26 C	37 D
5 A	16 D	27 C	38 C
6 B	17 A	28 D	39 C
7 A	18 A	29 C	40 A
8 A	19 A	30 B	41 B
9 D	20 B	31 C	42 D
10 C	21 D	32 D	43 B
11 C	22 C	33 A	44 A

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 A	11 D
2 A	12 B
3 A	13 B
4 D	14 A
5 B	15 B
6 D	16 70
7 C	17 $3/5$, .6
8 C	18 2
9 B	19 4
10 C	20 8

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 B	11 A	21 C	31 $1/2$, .5
2 A	12 B	22 A	32 20
3 B	13 B	23 D	33 1890
4 A	14 D	24 B	34 2
5 D	15 B	25 B	35 4
6 A	16 C	26 C	36 66
7 C	17 C	27 B	37 .71
8 D	18 A	28 D	38 $3/2$, 1.5
9 A	19 C	29 B	
10 A	20 B	30 D	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

October 2, 2021 International

ANSWER KEY

Reading Test Answers

1 B	12 A	23 A	34 C	45 D
2 A	13 A	24 C	35 A	46 B
3 B	14 A	25 D	36 D	47 D
4 C	15 B	26 B	37 B	48 D
5 D	16 C	27 D	38 A	49 B
6 D	17 D	28 A	39 B	50 A
7 B	18 D	29 D	40 D	51 A
8 C	19 C	30 A	41 D	52 C
9 C	20 B	31 A	42 C	
10 A	21 A	32 B	43 B	
11 D	22 D	33 D	44 C	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 C	12 D	23 B	34 B
2 C	13 A	24 B	35 D
3 B	14 B	25 C	36 B
4 D	15 A	26 D	37 A
5 B	16 D	27 B	38 D
6 D	17 A	28 A	39 C
7 B	18 D	29 D	40 C
8 C	19 A	30 C	41 B
9 A	20 B	31 A	42 C
10 A	21 C	32 D	43 A
11 D	22 D	33 A	44 C

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 D	11 B
2 B	12 D
3 A	13 D
4 D	14 A
5 D	15 D
6 A	16 2
7 D	17 6
8 B	18 1.2, 6/5
9 B	19 124
10 C	20 26

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 C	11 B	21 D	31 351
2 C	12 C	22 A	32 10
3 A	13 C	23 A	33 5/8
4 C	14 A	24 C	34 5
5 B	15 B	25 C	35 9.4
6 C	16 B	26 B	36 6
7 C	17 D	27 C	37 4
8 D	18 B	28 A	38 3
9 A	19 C	29 C	
10 D	20 B	30 B	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

ANSWER KEY

Reading Test Answers

1 B	12 C	23 C	34 A	45 D
2 D	13 A	24 D	35 D	46 A
3 A	14 D	25 B	36 D	47 B
4 A	15 D	26 B	37 A	48 B
5 C	16 B	27 C	38 B	49 C
6 B	17 D	28 A	39 B	50 D
7 B	18 C	29 A	40 C	51 B
8 C	19 B	30 D	41 D	52 C
9 A	20 B	31 B	42 D	
10 D	21 D	32 C	43 A	
11 A	22 D	33 B	44 C	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 B	12 D	23 D	34 D
2 C	13 A	24 D	35 C
3 C	14 B	25 C	36 C
4 A	15 D	26 B	37 D
5 C	16 A	27 A	38 C
6 B	17 D	28 B	39 B
7 C	18 C	29 A	40 C
8 A	19 C	30 B	41 B
9 D	20 D	31 D	42 A
10 B	21 C	32 A	43 A
11 D	22 B	33 C	44 D

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 D	11 A
2 B	12 D
3 C	13 C
4 A	14 C
5 D	15 B
6 A	16 4
7 B	17 2
8 B	18 12
9 B	19 7
10 C	20 376

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 B	11 D	21 B	31 6
2 B	12 C	22 B	32 0, 8
3 C	13 D	23 D	33 24
4 A	14 A	24 D	34 $9/5$, 1.8
5 A	15 A	25 C	35 31, 32, 33, 34, 35
6 A	16 B	26 B	36 3
7 D	17 C	27 C	37 $4/5$, .8
8 A	18 D	28 B	38 $2/3$, 1.66, 1.67
9 C	19 B	29 D	
10 D	20 A	30 A	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

December 4, 2021 International

ANSWER KEY

Reading Test Answers

1 D	12 D	23 C	34 A	45 B
2 D	13 D	24 C	35 D	46 C
3 B	14 A	25 D	36 A	47 A
4 C	15 D	26 A	37 C	48 A
5 D	16 D	27 A	38 B	49 C
6 B	17 C	28 C	39 C	50 D
7 A	18 A	29 D	40 B	51 D
8 A	19 D	30 A	41 A	52 B
9 C	20 D	31 B	42 B	
10 B	21 A	32 C	43 C	
11 B	22 C	33 A	44 D	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 B	12 C	23 C	34 B
2 A	13 A	24 C	35 C
3 B	14 D	25 D	36 A
4 D	15 A	26 C	37 C
5 B	16 D	27 D	38 D
6 D	17 B	28 B	39 A
7 A	18 C	29 B	40 C
8 D	19 A	30 B	41 D
9 B	20 D	31 C	42 B
10 D	21 D	32 A	43 A
11 C	22 C	33 B	44 C

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – No Calculator Answers

1 C	11 D
2 D	12 B
3 D	13 D
4 B	14 A
5 A	15 B
6 D	16 $\frac{8}{3}$, 2.66, 2.67
7 A	17 9
8 A	18 7
9 B	19 3
10 A	20 34

MATH TEST –
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test – Calculator Answers

1 D	11 C	21 C	31 80
2 B	12 A	22 D	32 3
3 C	13 A	23 C	33 $\frac{3}{2}$, 1.5
4 B	14 C	24 D	34 32
5 B	15 D	25 A	35 15
6 B	16 A	26 A	36 115
7 A	17 D	27 B	37 10
8 A	18 A	28 B	38 4, 12
9 B	19 D	29 A	
10 C	20 B	30 A	

MATH TEST –
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)