

# 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.

### Let Music Change Your Mind

[1] In the early 1990s, much was made of the so-called Mozart effect, whereby listening to Mozart's music for ten minutes boosted a person's spatial intelligence. [2] The effect, however, **1** came up short, lasting for only about ten to fifteen minutes after the listening period. [3] Nevertheless, the discovery inspired other efforts to understand the effects of music on human brain function. [4] Research indicates that learning to play a musical instrument has profound implications for

1. The word "short" in the passage is used to mean

- A) NO CHANGE
- B) was a flash in the pan,
- C) proved temporary,
- D) had a short shelf life,

the mind and that musicians reap lifelong benefits from their craft. [5] Recent scientific interest has spread beyond the effects of just listening to music. **2**

Most research addressing the cognitive benefits of playing musical instruments finds that music lessons have positive effects on school-age children, as the formative years facilitate easy absorption of new skills. Young people who learn to play an instrument **3** strengthen auditory skills, **4** memory and cognitive, development, sensory abilities, creativity, and problem solving. **5** By contrast, some of these improvements occur because the act of playing music

2

To make the paragraph most logical, sentence 5 should be

- A) placed where it is now.
- B) placed after sentence 2.
- C) placed after sentence 3.
- D) DELETED from the paragraph.

3

- A) NO CHANGE
- B) to strengthen
- C) strengthens
- D) is strengthening

4

- A) NO CHANGE
- B) memory but cognitive development,
- C) memory and cognitive development,
- D) memory, and cognitive development

5

- A) NO CHANGE
- B) In fact,
- C) However,
- D) Similarly,

changes the way the mind itself works. **6** Brain function in areas such as verbal memory and visual-spatial judgment is enhanced in a way that results in significant differences **7** from a musician's brain and a nonmusician's.

6

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

Scientists who study perfect pitch, which is the ability to identify any tone, are attempting to determine how much of a role early musical training plays in the development of perfect pitch in children already genetically predisposed to it.

Should the writer make this addition here?

- A) Yes, because it offers another example of skills strengthened by children who learn to play music.
- B) Yes, because it introduces information about brain function that is discussed in the next sentence.
- C) No, because it details scientific findings that call into question the benefits of learning to play music.
- D) No, because it blurs the paragraph's focus by introducing new information that is unaddressed elsewhere.

7

- A) NO CHANGE
- B) than
- C) between
- D) to

8 Adults also receive many of the same cognitive advantages by continuing to refine musical skills formed in childhood or even by beginning to play later in life.

9 For instance, musicians tend to show increased aptitude for spatial reasoning. Musicians have better verbal memory and motor skills well into adulthood. Due to the fact that musical skill increases and preserves

8

Which choice best introduces the paragraph?

- A) Children are not the only ones who gain from learning to play a musical instrument.
- B) After adolescence, young people often become too busy to play music.
- C) Most studies on the benefits of playing music yield a consistent body of results.
- D) Curiosity about musical skill should be encouraged at all stages of life.

9

Which choice most effectively combines the underlined sentences?

- A) For instance, musicians well into adulthood tend to show greater aptitude for spatial reasoning, and also with better verbal memory and motor skills.
- B) In addition to verbal memory and motor skills, when they are well into adulthood, musicians tend to show greater aptitude for spatial reasoning.
- C) Musicians tend to show greater aptitude for spatial reasoning, for instance, when they are well into adulthood with better verbal memory and motor skills.
- D) For instance, musicians tend to show increased aptitude for spatial reasoning, verbal memory, and motor skills well into adulthood.

2

neuroplasticity—the **10** brains' ability to reorganize functions in response to stimuli—continued practice may also help to lessen the ordinary deterioration of cognitive ability that can accompany age.

In addition to the many advantages conferred by playing music, musicians young and old may also build important strengths such as organization and perseverance because mastering a musical instrument takes time. Some other **11** affects are less strictly mental. Skill with certain instruments, such as the guitar, flute, or drums, helps to improve hand-eye coordination, lung capacity, breath control, or manual dexterity. With all that may be gained from learning to play a musical instrument, its value as an important part of mental well-being warrants the consideration of anyone looking to adopt a truly rewarding hobby.

2

**10**

- A) NO CHANGE
- B) brains ability
- C) brain's ability
- D) brains' abilities

**11**

- A) NO CHANGE
- B) effects are
- C) effects is
- D) affections are

Questions 12-22 are based on the following passage.

### Walk Away from the Wild Side

To twentieth-century conservationists, the idea of raising fish to sell seemed like the perfect response to the rapid depopulation of wild fish. Fish **12** farming, or aquaculture, was hailed as an environmentally sound way to save overfished species such as salmon, sea bass, and tuna while meeting the human demand for seafood. On farms located near natural bodies of water, elaborate systems of pens would hold the fish as they grew from small fry to market weight. In open-air markets or grocery stores, these fish would be sold like their wild-caught cousins.

However, **13** some fish farms have proved to be financially unsuccessful. Raised as a cash “crop,” thousands of fish were unhealthily crowded together in pens. Waste products, including feces, uneaten food, and dead fish, were flushed from the pens into the ocean, lake, and stream water near the farms, contaminating the water supply. **14** While pests such as sea lice, capable of eating a live fish to the bone, thrived in the artificial environment, as did viral, fungal, and bacterial diseases, which spread to wild fish populations. **15** They often escaped from farms and competed with native species in local waters for food. Pesticides and drugs used to treat afflicted fish **16** effected the entire ecosystem. One domino after another was falling.

Fortunately, these catastrophic developments prompted creative solutions. To begin with, the industry moved inland, at least partially addressing one of

12

- A) NO CHANGE
- B) farming or aquaculture,
- C) farming—or aquaculture.
- D) farming or aquaculture

13

Which choice establishes the best transition from the previous paragraph to this paragraph?

- A) NO CHANGE
- B) many people prefer wild-caught fish.
- C) several problems manifested themselves almost immediately.
- D) fish farmers must take numerous precautions to be successful.

14

- A) NO CHANGE
- B) Besides pests
- C) Since pests
- D) Pests

15

- A) NO CHANGE
- B) Nonnative fish
- C) Others
- D) Some

16

- A) NO CHANGE
- B) affected
- C) affecting
- D) affect

aquaculture's greatest challenges: keeping contaminated water **17** held. Innovation has taken other forms, too.

**18** Therefore, Dave Roeser, owner of Garden Fresh Farms, has created a unique farm-in-a-bubble system in which plants and fish meet each other's needs. In this system, fish exhale what plants inhale, excrete what plants eat, and swim in water that plants clean. Such cycling is evident throughout the farm. Rainbow trout are supplied with cold water pulled directly from Minnesota lakes, because **19** trout is one of the most popular lake fish.

After the trout heat the water, it is piped to **20** tilapia pens, a tropical fish that needs warmer water. Tilapia wastewater is treated and enriched by beneficial bacteria **21** known to be helpful and then forced through pipes to an indoor garden, where it fertilizes tens of thousands of heads of lettuce and herbs. These plants filter the water, which is piped back to the fish tanks, renewing the cycle. Roeser's delicate animal-plant balance produces 40,000 fish and 460,000 edible plants a year in an area the size of four semitrailer trucks. While unique in its particulars, Garden Fresh Farms signals a broader trend: once primarily a wild food caught with nets and hooks and luck, fish on the dinner table today were likely ordered wholesale.

17

- A) NO CHANGE
- B) contained.
- C) restrained.
- D) encompassed.

18

- A) NO CHANGE
- B) Nonetheless,
- C) For example,
- D) Subsequently,

19

Which choice establishes the most critical reason for the action described earlier in the sentence?

- A) NO CHANGE
- B) cold water has the high oxygen level trout need.
- C) Roeser's operation is located near these lakes.
- D) there is no seawater available.

20

- A) NO CHANGE
- B) tropical fish that need warm water in pens called tilapia.
- C) pens holding tilapia, a tropical fish that needs warm water.
- D) pens of tropical fish that need warmer water known as tilapia.

21

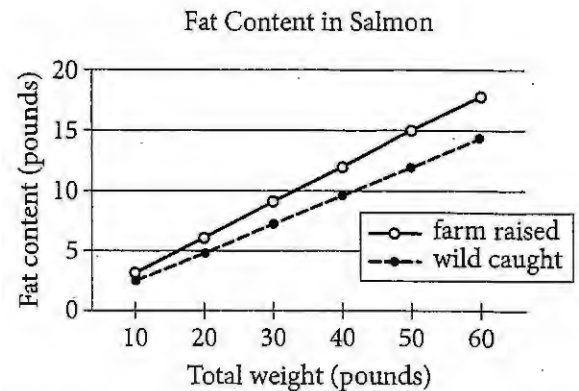
- A) NO CHANGE
- B) that have been identified as helpful
- C) treating the water
- D) DELETE the underlined portion.

Question 22 asks about the previous passage as a whole.

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

22

During further research into the passage's topic, the writer finds the following graphic.



Should the writer include this graphic along with the passage?

- A) Yes, because it offers additional data defining wild-caught and farm-raised fish.
- B) Yes, because it shows that farm-raised salmon have a higher fat content than do wild-caught salmon.
- C) No, because it weakens a point the passage makes about farm-raised fish.
- D) No, because it lacks clear relevance to the main focus of the passage.



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

### Digital Image Processing

Zoltan Levay spends much of his time visualizing space. As imaging group lead for the Hubble Space Telescope, he oversees the processing of data captured by the **23** telescope's digital detector's. Levay and his team take these data and create stunning astronomical images for use in news stories and scientific research.

Photos taken with consumer digital cameras, smartphones, and tablets use only one "multichannel" color detector. Levay's team, on the other hand, begins with scientific data from a set of single-channel, black-and-white images captured using different filters. A single image can be made up of multiple exposures. Sometimes, when the subject is especially large, multiple images are stitched together to create a mosaic. Additional steps are then taken to optimize the black-and-white images for tonal balance. **24** However, color is added to the single-channel images, and they are merged to produce a composite image. Final adjustments are made to highlight the specific details of interest.

As one might imagine, constructing digital images requires a thorough understanding of the computer software used in **25** imaging and familiarity with the instruments that initially collect the data. Basic mathematical skills and an understanding of the scientific

23

- A) NO CHANGE
- B) telescopes' digital detector's.
- C) telescope's digital detectors.
- D) telescopes' digital detectors'.

24

- A) NO CHANGE
- B) Next,
- C) Therefore,
- D) Nonetheless,

25

- A) NO CHANGE
- B) imaging; and
- C) imaging also
- D) imaging; also

principles being investigated are essential, but so is the eye of an artist. **26** The goal is to produce a beautiful image. It also presents scientific information accurately. Anyone wanting to learn more about image processing can search the online MAST astronomical data archive and use free software to create and share images. In fact, professionals in image processing are even available through social media to answer questions and share **27** his or her thoughts.

Using digital imaging techniques to interpret scientific information is important in other disciplines too. One of the most familiar is medical imaging. The use of medical imaging technology for noninjury emergency room visits **28** have grown significantly, **29** and there is a need for skilled technologists to operate the imaging devices that help provide accurate diagnoses. The US Bureau of Labor Statistics projects that job growth

26

Which choice most effectively combines the underlined sentences?

- A) The goal is to produce a beautiful image that also presents scientific information accurately.
- B) The goal is to produce a beautiful image—it also presents scientific information accurately.
- C) The goal is to produce a beautiful image; the image also presents scientific information accurately.
- D) The goal is to produce a beautiful image, and the goal also presents scientific information accurately.

27

- A) NO CHANGE
- B) their
- C) our
- D) your

28

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

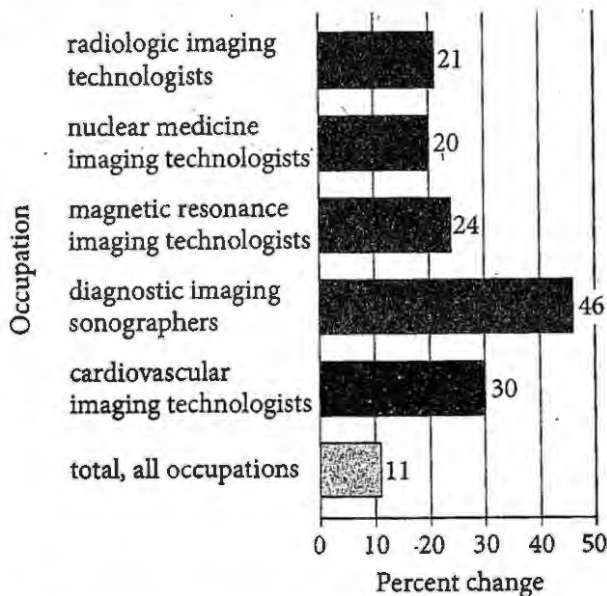
29

Which choice most effectively sets up the information that follows?

- A) NO CHANGE
- B) which is most likely due to an increase in age-related injuries as people live longer.
- C) probably because of the rise in the number of patients visiting emergency rooms each year.
- D) but the production of new imaging machines has not kept pace with this demand.

between 2012 and 2022 is expected to be **30** 20 percent for diagnostic imaging sonographers and **31** many sonographers earn above the average salary of US workers.

Percent Change in Employment Projected 2012–2022



Source: *Occupational Outlook Handbook*. ©2014 by the Bureau of Labor Statistics, US Department of Labor.

In addition to being used in astronomy and **32** medicine. Digital image processing techniques are used in fields as diverse as conservation, industrial inspection, law enforcement, the fine arts, and the design of human-computer interfaces. With so much variety, **33** there's an assortment; careers involving digital image processing may be easier to find than you think.

30

After reviewing the chart included in the passage, the writer realizes the information provided in the underlined portion is not accurate. Which of the following changes would correct the inaccuracy?

- A) Change "20 percent" to "11 percent"
- B) Change "20 percent" to "21 percent"
- C) Change "20 percent" to "24 percent"
- D) Change "20 percent" to "46 percent"

31

Which of the following choices most effectively supports the paragraph's claim about job growth with accurate and relevant data from the chart included in the passage?

- A) NO CHANGE
- B) 24 percent for magnetic resonance imaging technologists.
- C) most sonographers complete training in less than three years.
- D) may include working evenings, overnight shifts, and weekends.

32

- A) NO CHANGE
- B) medicine; digital
- C) medicine: digital
- D) medicine, digital

33

- A) NO CHANGE
- B) there are lots of choices;
- C) it's a multitude of options;
- D) DELETE the underlined portion.

Questions 34-44 are based on the following passage.

### The Texas Longhorn of Dinosaurs

Of all the horned dinosaurs, *Triceratops* is probably best known. But even that behemoth's impressive three bony spikes **34** pales by comparison to the massive horns found atop a newly discovered dinosaur, the *Nasutoceratops titusi*. When paleontologists unearthed the fossils of a *Nasutoceratops* in the Utah desert in 2013, they said it was unlike anything they had seen before. The *Nasutoceratops*'s intimidatingly large horns were forward pointing, curving nearly all the way to the tip of the dinosaur's outsized nose. These horns immediately became this dinosaur's primary identifying feature: Its name, *Nasutoceratops*, is Latin for "big-nosed horn face." *Nasutoceratops* was even **35** nicknamed "the Texas longhorn of dinosaurs," because of **36** its horns similarity to those that adorn the heads of that breed of Texas cattle.

**37** *Nasutoceratops* lived some 76 million years ago. *Nasutoceratops* lived during the late Cretaceous period. It had a wide body, weighed as much as two and a half tons, and **38** a length of fifteen feet. Like its "cousin" *Triceratops*, *Nasutoceratops* was also part of the ceratopsid group—rhinoceros-like dinosaurs that walked on four legs and ate plants. Evidence indicates that *Nasutoceratops* inhabited what is now the western United

34

- A) NO CHANGE
- B) pale in
- C) pales of
- D) pales in

35

- A) NO CHANGE
- B) nicknamed, "the Texas longhorn of dinosaurs."
- C) nicknamed, "the Texas longhorn of dinosaurs"
- D) nicknamed "the Texas longhorn of dinosaurs"

36

- A) NO CHANGE
- B) its horns'
- C) its horns'
- D) its horns

37

Which choice most effectively combines the underlined sentences?

- A) *Nasutoceratops* lived some 76 million years ago, during the late Cretaceous period.
- B) *Nasutoceratops* lived some 76 million years ago, and that was during the late Cretaceous period.
- C) When *Nasutoceratops* lived some 76 million years ago; that was during the late Cretaceous period.
- D) During the time when *Nasutoceratops* lived, it was some 76 million years ago during the late Cretaceous period.

38

- A) NO CHANGE
- B) growth to fifteen feet in length.
- C) growing a length of fifteen feet.
- D) grew to fifteen feet in length.

States, a region that was once as verdant and wet as

**39** what the Mississippi Delta is like.

Along with its impressive horns, *Nasutoceratops* had **40** a massive nose. Researchers remain uncertain about the purpose of *Nasutoceratops*'s enormous snout. Its olfactory receptors were further back in the head, refuting the theory that the big nose may have led to a heightened sense of smell. The reason for the dinosaur's large nose remains a mystery.

**41** Similarly unknown is which of the *Nasutoceratops* had those characteristic horns atop their heads. Was it only the males of the species that had horns, the way male elk and deer do in modern times? Or did both *Nasutoceratops* sexes wear those horns, as male and female water buffalo do today? **42** Scientists wonder if it was just older *Nasutoceratops* that grew the horns or did the young ones, too? Scientists aren't completely sure.

39

- A) NO CHANGE
- B) where the Mississippi Delta region is.
- C) those of the Mississippi Delta.
- D) the Mississippi Delta.

40

Given that all the choices are accurate, which one most effectively completes the sentence so that it introduces the main topic of the paragraph?

- A) NO CHANGE
- B) a low and narrow horn on its nose.
- C) features similar to those of modern cattle.
- D) a unique combination of features.

41

- A) NO CHANGE
- B) Therefore, it is unknown
- C) In sharp contrast, it is unknown
- D) Yet it is unknown

42

Which choice most closely maintains the sentence pattern established in this paragraph?

- A) NO CHANGE
- B) There are questions about whether it was just older *Nasutoceratops* that grew the horns or if the young ones did, too.
- C) Was it just older *Nasutoceratops* that grew the horns or did the young ones, too?
- D) Scientists are wondering, "Was it just older *Nasutoceratops* that grew the horns or did the young ones, too?"

More obvious to the researchers, however, is why the Texas longhorn of dinosaurs had such large horns atop its head. They believe *Nasutoceratops's* horns had a variety of functions. The horns most likely served to ward off predators that may have been considering an attack.

**43** Whatever their function during *Nasutoceratops's* lifetime, the horns have since accomplished one thing:

**44** the deserts of Utah have yielded a fascinating discovery.

**43**

At this point, the writer wants to add another example of a likely function of *Nasutoceratops's* horns. Which choice best accomplishes this goal?

- A) Researchers have proposed several likely functions of *Nasutoceratops's* horns.
- B) *Nasutoceratops's* horns could have been used for any number of purposes.
- C) They were also probably used to battle with rival dinosaurs for dominance.
- D) But it's likely that warding off predators wasn't the horns' only function.

**44**

Which choice best concludes the essay and recalls a point made early in the essay?

- A) NO CHANGE
- B) *Triceratops* may now have some competition for most famous horned dinosaur.
- C) the *Nasutoceratops* is now known as a great example of the ceratopsid family.
- D) the *Nasutoceratops's* horns were unlike those of any other dinosaur yet discovered.

## STOP

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