AL NOOR INTERNATIONAL SCHOOL

College Board
SAT STUDY and PRACTICE GUIDE
Redesigned SAT

"Your gateway in achieving your dreams."

Student's Name: _____

Grade 11___

ANIS

Introduction to the SAT Exam

A. What is SAT

It's one of two standardized college admissions tests. It's run by the College Board, a non-profit that also administers the PSAT and the AP (Advanced Placement) program.

The SAT was originally adapted from an Army IQ test and administered as a college admissions test for the first time in 1926. However, it didn't really catch on until 1933, when the president of Harvard started using the test to assess scholarship applicants because he believed it was an effective measurement of intellectual potential. This view of the SAT helped propel its popularity—by the 1940s, it had become the standard test for all college applicants and was administered to over 300,000 people across the country.

The SAT's dominance of college admissions testing was challenged with the creation of the ACT in 1959. Though initially much less popular than the SAT, the ACT took hold in the Midwest and the mountain states and, in 2010, surpassed the SAT to become the most popular college admissions test.

In part because of the increased competition from the ACT, the SAT recently underwent some big changes in 2016. The basic purpose and form of the test are the same (it's still a multiple-choice test used for college admissions decisions), but certain aspects of the structure and content have changed. Schools must have approved of these changes because, in 2018, the SAT reclaimed its title and once again became the most popular college admissions test.

B. Why SAT

The SAT (Scholastic Aptitude Test) is a standardized test meant to show schools how prepared you are for college by measuring key skills like reading comprehension, computational ability, and clarity of expression. Because so many students take the test, it also provides schools with data about how you compare to your peers nationwide.

You'll almost certainly need to take the SAT if you're applying to colleges or universities, since most require you to submit test scores with your application. Depending on where you want to apply, your SAT score can account for as much as 50% of the admission decision, so a strong standardized test score is vital.

C. SAT Scoring Protocol

When you take the SAT, you'll be given a total score between 400 and 1600. The SAT has two major sections: Evidence-Based Reading and Writing (combined from Reading + Writing and Language), and Math. You can earn a scaled score of between 200 and 800 points on each section. But where does the scoring scale come from?

You start with a raw score for each topic area. Your raw score is simply the number of questions you answered correctly; skipped or wrong questions do not add or subtract from your raw score. That number is then converted into a scaled score through a process called equating—the College Board is a bit cagey about how exactly this works, but it's based on years' worth of data rather than how people do on a specific test date.

The average SAT score is 1068, with some variation from year to year, but what counts as a good score for you will really depend on where you're looking to apply. To get into a top-tier school you'll likely need to score about 1500 or higher, but for the local branch of the state university you might be just fine with a 1050.

D. How and where to apply SAT exam

SAT registration deadlines fall approximately five weeks before each test date. Register online on the College Board website. The College Board may require SAT registration by mail under special circumstances.
SAT tests dates can be found on the College Board website. You can also register to take the SAT test online with the College Board. Be sure to register using your name as it appears on your photo identification.

E. Cost of SAT Exam

The registration fee for the SAT exam for international students is $60. Remember that the additional services may vary with different locations and test centers. International students can only attempt the Digital SAT, and only the students in the US can access the pen and paper version of the SAT exam.

F. Ways to prepare for taking SAT Exam

If you've started thinking about college, career, or life after high school, you've heard about tests like the SAT. Colleges—including those that are test optional use test scores to help them make admissions, financial aid, and course placement decisions. It makes sense to plan to do your best on the exam. Here are some tips to help you do that:

Best Way to Prepare

The best way to prepare for the SAT is to work hard both inside and outside the classroom. Take challenging courses, study hard, and read and write as much as you can.

Know what to expect.

Being familiar with the format of the SAT will help you feel more comfortable on test day. Go to our website to learn about each section. Talk to friends or siblings who've already taken the SAT. You'll feel more confident if you know the test format beforehand, and you can save valuable time during the exam.

Use our free, personalized practice tools.
By practicing with thousands of interactive problems, instant feedback, and video lessons, you can prepare for the test and keep track of your progress at satpractice.org.

Take practice tests — for free.
You can find free practice exams on various websites as well as in study guides in the library, and bookstores. These practice exams can help you discover your strengths and weaknesses and learn to manage your time wisely during the test.

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Test begins on the next page.

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Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

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

Questions 1-10 are based on the following passage.

This passage is from Lydia Minatoya, *The Strangeness of Beauty*. ©1999 by Lydia Minatoya. The setting is Japan in 1920. Chie and her daughter Naomi are members of the House of Fuji, a noble family.

Akira came directly, breaking all tradition. Was that it? Had he followed form—had he asked his mother to speak to his father to approach a go-between—would Chie have been more receptive?

He came on a winter's eve. He pounded on the door while a cold rain beat on the shuttered veranda, so at first Chie thought him only the wind. The maid knew better. Chie heard her soft scuttling footsteps, the creak of the door. Then the maid brought a calling card to the drawing room, for Chie.

Chie was reluctant to go to her guest; perhaps she was feeling too cozy. She and Naomi were reading at a low table set atop a charcoal brazier. A thick quilt spread over the sides of the table so their legs were tucked inside with the heat.

"Who is it at this hour, in this weather?" Chie questioned as she picked the name card off the maid's lacquer tray.

"Shinoda, Akira. Kobe Dental College," she read.

Naomi recognized the name. Chie heard a soft intake of air.

"I think you should go," said Naomi.

Akira was waiting in the entry. He was in his early twenties, slim and serious, wearing the black military-style uniform of a student. As he bowed—his hands hanging straight down, a black cap in one, a yellow oil-paper umbrella in the other—Chie glanced beyond him. In the glistening surface of the courtyard's rain-drenched paving stones, she saw his reflection like a dark double.

"Madame," said Akira, "forgive my disruption, but I come with a matter of urgency."

His voice was soft, refined. He straightened and stole a deferential peek at her face.

In the dim light his eyes shone with sincerity. Chie felt herself starting to like him.

"Come inside, get out of this nasty night. Surely your business can wait for a moment or two."

"I don't want to trouble you. Normally I would approach you more properly but I've received word of a position. I've an opportunity to go to America, as dentist for Seattle's Japanese community."

"Congratulations," Chie said with amusement. "That is an opportunity, I'm sure. But how am I involved?"

Even noting Naomi's breathless reaction to the name card, Chie had no idea. Akira's message, delivered like a formal speech, filled her with maternal amusement. You know how children speak so earnestly, so hurriedly, so endearingly about things that have no importance in an adult's mind? That's how she viewed him, as a child.

It was how she viewed Naomi. Even though Naomi was eighteen and training endlessly in the arts needed to make a good marriage, Chie had made no effort to find her a husband.

Akira blushed.

"Depending on your response, I may stay in Japan. I've come to ask for Naomi's hand."

Suddenly Chie felt the dampness of the night.

"Does Naomi know anything of your . . . ambitions?"

"We have an understanding. Please don't judge my candidacy by the unseemliness of this proposal. I ask directly because the use of a go-between takes much time. Either method comes down to the same thing: a matter of parental approval. If you give your consent, I become Naomi's yoshi.* We'll live in the House of Fuji. Without your consent, I must go to America, to secure a new home for my bride."

Eager to make his point, he'd been looking her full in the face. Abruptly, his voice turned gentle. "I see I've startled you. My humble apologies. I'll take no more of your evening. My address is on my card. If you don't wish to contact me, I'll reapproach you in two weeks' time. Until then, good night."

He bowed and left. Taking her ease, with effortless grace, like a cat making off with a fish.

"Mother?" Chie heard Naomi's low voice and turned from the door. "He has asked you?"

The sight of Naomi's clear eyes, her dark brows gave Chie strength. Maybe his hopes were preposterous.

"Where did you meet such a fellow? Imagine! He thinks he can marry the Fuji heir and take her to America all in the snap of his fingers!"

Chie waited for Naomi's ripe laughter.

Naomi was silent. She stood a full half minute looking straight into Chie's eyes. Finally, she spoke. "I met him at my literary meeting."

Naomi turned to go back into the house, then stopped.

"Mother."

"Yes?"

"I mean to have him."

* a man who marries a woman of higher status and takes her family's name

1

Which choice best describes what happens in the passage?

A) One character argues with another character who intrudes on her home.

B) One character receives a surprising request from another character.

C) One character reminisces about choices she has made over the years.

D) One character criticizes another character for pursuing an unexpected course of action.

2

Which choice best describes the developmental pattern of the passage?

A) A careful analysis of a traditional practice

B) A detailed depiction of a meaningful encounter

C) A definitive response to a series of questions

D) A cheerful recounting of an amusing anecdote

3

As used in line 1 and line 65, "directly" most nearly means

A) frankly.

B) confidently.

C) without mediation.

D) with precision.

4

Which reaction does Akira most fear from Chie?

A) She will consider his proposal inappropriate.

B) She will mistake his earnestness for immaturity.

C) She will consider his unscheduled visit an imposition.

D) She will underestimate the sincerity of his emotions.

5

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

A) Line 33 ("His voice . . . refined")

B) Lines 49-51 ("You . . . mind")

C) Lines 63-64 ("Please . . . proposal")

D) Lines 71-72 ("Eager . . . face")

6

In the passage, Akira addresses Chie with

A) affection but not genuine love.

B) objectivity but not complete impartiality.

C) amusement but not mocking disparagement.

D) respect but not utter deference.

7

The main purpose of the first paragraph is to

A) describe a culture.

B) criticize a tradition.

C) question a suggestion.

D) analyze a reaction.

8

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

A) appearance.

B) custom.

C) structure.

D) nature.

9

Why does Akira say his meeting with Chie is "a matter of urgency" (line 32)?

A) He fears that his own parents will disapprove of Naomi.

B) He worries that Naomi will reject him and marry someone else.

C) He has been offered an attractive job in another country.

D) He knows that Chie is unaware of his feelings for Naomi.

10

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

A) Line 39 ("I don't . . . you")

B) Lines 39-42 ("Normally . . . community")

C) Lines 58-59 ("Depending . . . Japan")

D) Lines 72-73 ("I see . . . you")

ANS

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

This passage is adapted from Francis J. Flynn and Gabrielle S. Adams, "Money Can't Buy Love: Asymmetric Beliefs about Gift Price and Feelings of Appreciation." ©2008 by Elsevier Inc.

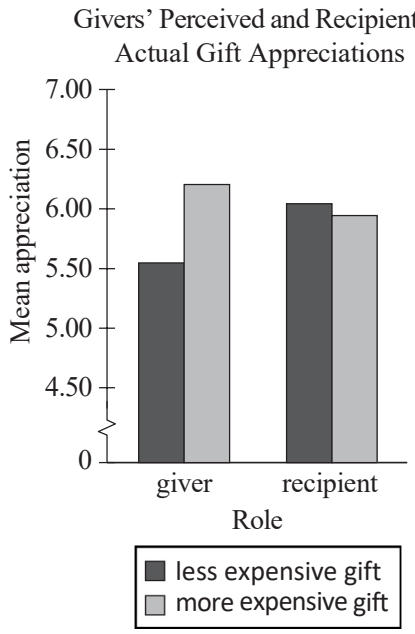
Every day, millions of shoppers hit the stores in full force—both online and on foot—searching frantically for the perfect gift. Last year, Americans spent over $30 billion at retail stores in the month of December alone. Aside from purchasing holiday gifts, most people regularly buy presents for other occasions throughout the year, including weddings, birthdays, anniversaries, graduations, and baby showers. This frequent experience of gift-giving can engender ambivalent feelings in gift-givers. Many relish the opportunity to buy presents because gift-giving offers a powerful means to build stronger bonds with one's closest peers. At the same time, many dread the thought of buying gifts; they worry that their purchases will disappoint rather than delight the intended recipients.

Anthropologists describe gift-giving as a positive social process, serving various political, religious, and psychological functions. Economists, however, offer a less favorable view. According to Waldfogel (1993), gift-giving represents an objective waste of resources. People buy gifts that recipients would not choose to buy on their own, or at least not spend as much money to purchase (a phenomenon referred to as "the deadweight loss of Christmas"). To wit, givers are likely to spend $100 to purchase a gift that receivers would spend only $80 to buy themselves. This "deadweight loss" suggests that gift-givers are not very good at predicting what gifts others will appreciate. That in itself is not surprising to social psychologists. Research has found that people often struggle to take account of others' perspectives—their insights are subject to egocentrism, social projection, and multiple attribution errors.

What is surprising is that gift-givers have considerable experience acting as both gift-givers and gift-recipients, but nevertheless tend to overspend each time they set out to purchase a meaningful gift. In the present research, we propose a unique psychological explanation for this overspending problem—i.e., that gift-givers equate how much they spend with how much recipients will appreciate the gift (the more expensive the gift, the stronger a gift-recipient's feelings of appreciation). Although a link between gift price and feelings of appreciation might seem intuitive to gift-givers, such an assumption may be unfounded. Indeed, we propose that gift-recipients will be less inclined to base their feelings of appreciation on the magnitude of a gift than givers assume.

Why do gift-givers assume that gift price is closely linked to gift-recipients' feelings of appreciation? Perhaps givers believe that bigger (i.e., more expensive) gifts convey stronger signals of thoughtfulness and consideration. According to Camerer (1988) and others, gift-giving represents a symbolic ritual, whereby gift-givers attempt to signal their positive attitudes toward the intended recipient and their willingness to invest resources in a future relationship. In this sense, gift-givers may be motivated to spend more money on a gift in order to send a "stronger signal" to their intended recipient. As for gift-recipients, they may not construe smaller and larger gifts as representing smaller and larger signals of thoughtfulness and consideration.

The notion of gift-givers and gift-recipients being unable to account for the other party's perspective seems puzzling because people slip in and out of these roles every day, and, in some cases, multiple times in the course of the same day. Yet, despite the extensive experience that people have as both givers and receivers, they often struggle to transfer information gained from one role (e.g., as a giver) and apply it in another, complementary role (e.g., as a receiver). In theoretical terms, people fail to utilize information about their own preferences and experiences in order to produce more efficient outcomes in their exchange relations. In practical terms, people spend hundreds of dollars each year on gifts, but somehow never learn to calibrate their gift expenditures according to personal insight.



11

The authors most likely use the examples in lines 1-9 of the passage ("Every . . . showers") to highlight the

A) regularity with which people shop for gifts.

B) recent increase in the amount of money spent on gifts.

C) anxiety gift shopping causes for consumers.

D) number of special occasions involving gift-giving.

12

In line 10, the word "ambivalent" most nearly means

A) unrealistic.

B) conflicted.

C) apprehensive.

D) supportive.

13

The authors indicate that people value gift-giving because they feel it

A) functions as a form of self-expression.

B) is an inexpensive way to show appreciation.

C) requires the gift-recipient to reciprocate.

D) can serve to strengthen a relationship.

14

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

A) Lines 10-13 ("Many . . . peers")

B) Lines 22-23 ("People . . . own")

C) Lines 31-32 ("Research . . . perspectives")

D) Lines 44-47 ("Although . . . unfounded")

15

The "social psychologists" mentioned in paragraph 2 (lines 17-34) would likely describe the "deadweight loss" phenomenon as

A) predictable.

B) questionable.

C) disturbing.

D) unprecedented.

16

The passage indicates that the assumption made by gift-givers in lines 41-44 may be

A) insincere.

B) unreasonable.

C) incorrect.

D) substantiated.

ANS

17

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

A) Lines 53-55 ("Perhaps . . . consideration")

B) Lines 55-60 ("According . . . relationship")

C) Lines 63-65 ("As . . . consideration")

D) Lines 75-78 ("In . . . relations")

18

As it is used in line 54, "convey" most nearly means

A) transport.

B) counteract.

C) exchange.

D) communicate.

19

The authors refer to work by Camerer and others (line 56) in order to

A) offer an explanation.

B) introduce an argument.

C) question a motive.

D) support a conclusion.

20

The graph following the passage offers evidence that gift-givers base their predictions of how much a gift will be appreciated on

A) the appreciation level of the gift-recipients.

B) the monetary value of the gift.

C) their own desires for the gifts they purchase.

D) their relationship with the gift-recipients.

21

The authors would likely attribute the differences in gift-giver and recipient mean appreciation as represented in the graph to

A) an inability to shift perspective.

B) an increasingly materialistic culture.

C) a growing opposition to gift-giving.

D) a misunderstanding of intentions.

ANS

Questions 22-31 are based on the following passage and supplementary material.

This passage is adapted from J. D. Watson and F. H. C. Crick, "Genetical Implications of the Structure of Deoxyribonucleic Acid." ©1953 by Nature Publishing Group. Watson and Crick deduced the structure of DNA using evidence from Rosalind Franklin and R. G. Gosling's X-ray crystallography diagrams of DNA and from Erwin Chargaff's data on the base composition of DNA.

The chemical formula of deoxyribonucleic acid (DNA) is now well established. The molecule is a very long chain, the backbone of which consists of a regular alternation of sugar and phosphate groups. To each sugar is attached a nitrogenous base, which can be of four different types. Two of the possible bases—adenine and guanine—are purines, and the other two—thymine and cytosine—are pyrimidines. So far as is known, the sequence of bases along the chain is irregular. The monomer unit, consisting of phosphate, sugar and base, is known as a nucleotide.

The first feature of our structure which is of biological interest is that it consists not of one chain, but of two. These two chains are both coiled around a common fiber axis. It has often been assumed that since there was only one chain in the chemical formula there would only be one in the structural unit. However, the density, taken with the X-ray evidence, suggests very strongly that there are two.

The other biologically important feature is the manner in which the two chains are held together. This is done by hydrogen bonds between the bases. The bases are joined together in pairs, a single base from one chain being hydrogen-bonded to a single base from the other. The important point is that only certain pairs of bases will fit into the structure. One member of a pair must be a purine and the other a pyrimidine in order to bridge between the two chains. If a pair consisted of two purines, for example, there would not be room for it.

We believe that the bases will be present almost entirely in their most probable forms. If this is true, the conditions for forming hydrogen bonds are more restrictive, and the only pairs of bases possible are: adenine with thymine, and guanine with cytosine. Adenine, for example, can occur on either chain; but when it does, its partner on the other chain must always be thymine.

The phosphate-sugar backbone of our model is completely regular, but any sequence of the pairs of bases can fit into the structure. It follows that in a long molecule many different permutations are possible, and it therefore seems likely that the precise sequence of bases is the code which carries the genetical information. If the actual order of the bases on one of the pair of chains were given, one could write down the exact order of the bases on the other one, because of the specific pairing. Thus one chain is, as it were, the complement of the other, and it is this feature which suggests how the deoxyribonucleic acid molecule might duplicate itself.

The table shows, for various organisms, the percentage of each of the four types of nitrogenous bases in that organism's DNA.

Base Composition of DNA				
Organism	Percentage of base in organism's DNA			
	adenine (%)	guanine (%)	cytosine (%)	thymine (%)
Maize	26.8	22.8	23.2	27.2
Octopus	33.2	17.6	17.6	31.6
Chicken	28.0	22.0	21.6	28.4
Rat	28.6	21.4	20.5	28.4
Human	29.3	20.7	20.0	30.0
Grasshopper	29.3	20.5	20.7	29.3
Sea urchin	32.8	17.7	17.3	32.1
Wheat	27.3	22.7	22.8	27.1
Yeast	31.3	18.7	17.1	32.9
E. coli	24.7	26.0	25.7	23.6

Adapted from Manju Bansal, "DNA Structure: Revisiting the Watson-Crick Double Helix." ©2003 by Current Science Association, Bangalore.

22

The authors use the word "backbone" in lines 3 and 39 to indicate that

A) only very long chains of DNA can be taken from an organism with a spinal column.

B) the main structure of a chain in a DNA molecule is composed of repeating units.

C) a chain in a DNA molecule consists entirely of phosphate groups or of sugars.

D) nitrogenous bases form the main structural unit of DNA.

23

A student claims that nitrogenous bases pair randomly with one another. Which of the following statements in the passage contradicts the student's claim?

A) Lines 5-6 ("To each . . . types")

B) Lines 9-10 ("So far . . . irregular")

C) Lines 23-25 ("The bases . . . other")

D) Lines 27-29 ("One member . . . chains")

24

In the second paragraph (lines 12-19), what do the authors claim to be a feature of biological interest?

A) The chemical formula of DNA

B) The common fiber axis

C) The X-ray evidence

D) DNA consisting of two chains

25

The authors' main purpose of including the information about X-ray evidence and density is to

A) establish that DNA is the molecule that carries the genetic information.

B) present an alternate hypothesis about the composition of a nucleotide.

C) provide support for the authors' claim about the number of chains in a molecule of DNA.

D) confirm the relationship between the density of DNA and the known chemical formula of DNA.

26

Based on the passage, the authors' statement "If a pair consisted of two purines, for example, there would not be room for it" (lines 29-30) implies that a pair

A) of purines would be larger than the space between a sugar and a phosphate group.

B) of purines would be larger than a pair consisting of a purine and a pyrimidine.

C) of pyrimidines would be larger than a pair of purines.

D) consisting of a purine and a pyrimidine would be larger than a pair of pyrimidines.

27

The authors' use of the words "exact," "specific," and "complement" in lines 47-49 in the final paragraph functions mainly to

A) confirm that the nucleotide sequences are known for most molecules of DNA.

B) counter the claim that the sequences of bases along a chain can occur in any order.

C) support the claim that the phosphate-sugar backbone of the authors' model is completely regular.

D) emphasize how one chain of DNA may serve as a template to be copied during DNA replication.

28

Based on the table and passage, which choice gives the correct percentages of the purines in yeast DNA?

A) 17.1% and 18.7%

B) 17.1% and 32.9%

C) 18.7% and 31.3%

D) 31.3% and 32.9%

29

Do the data in the table support the authors' proposed pairing of bases in DNA?

A) Yes, because for each given organism, the percentage of adenine is closest to the percentage of thymine, and the percentage of guanine is closest to the percentage of cytosine.

B) Yes, because for each given organism, the percentage of adenine is closest to the percentage of guanine, and the percentage of cytosine is closest to the percentage of thymine.

C) No, because for each given organism, the percentage of adenine is closest to the percentage of thymine, and the percentage of guanine is closest to the percentage of cytosine.

D) No, because for each given organism, the percentage of adenine is closest to the percentage of guanine, and the percentage of cytosine is closest to the percentage of thymine.

30

According to the table, which of the following pairs of base percentages in sea urchin DNA provides evidence in support of the answer to the previous question?

A) 17.3% and 17.7%

B) 17.3% and 32.1%

C) 17.3% and 32.8%

D) 17.7% and 32.8%

31

Based on the table, is the percentage of adenine in each organism's DNA the same or does it vary, and which statement made by the authors is most consistent with that data?

A) The same; "Two of . . . pyrimidines" (lines 6-8)

B) The same; "The important . . . structure" (lines 25-26)

C) It varies; "Adenine . . . thymine" (lines 36-38)

D) It varies; "It follows . . . information" (lines 41-45)

ANS

Questions 32-41 are based on the following passage.

This passage is adapted from Virginia Woolf, *Three Guineas*. ©1938 by Harcourt, Inc. Here, Woolf considers the situation of women in English society.

Close at hand is a bridge over the River Thames, an admirable vantage ground for us to make a survey. The river flows beneath; barges pass, laden with timber, bursting with corn; there on one side are the domes and spires of the city; on the other, Westminster and the Houses of Parliament. It is a place to stand on by the hour, dreaming. But not now. Now we are pressed for time. Now we are here to consider facts; now we must fix our eyes upon the procession—the procession of the sons of educated men.

There they go, our brothers who have been educated at public schools and universities, mounting those steps, passing in and out of those doors, ascending those pulpits, preaching, teaching, administering justice, practising medicine, transacting business, making money. It is a solemn sight always—a procession, like a caravanserai crossing a desert .....But now, for the past twenty years or so, it is no longer a sight merely, a photograph, or fresco scrawled upon the walls of time, at which we can look with merely an esthetic appreciation. For there, trapesing along at the tail end of the procession, we go ourselves. And that makes a difference. We who have looked so long at the pageant in books, or from a curtained window watched educated men leaving the house at about nine-thirty to go to an office, returning to the house at about six-thirty from an office, need look passively no longer. We too can leave the house, can mount those steps, pass in and out of those doors, . make money, administer justice.....We who now agitate these humble pens may in another century or two speak from a pulpit. Nobody will dare contradict us then; we shall be the mouthpieces of the divine spirit—a solemn thought, is it not? Who can say whether, as time goes on, we may not dress in military uniform, with gold lace on our breasts, swords at our sides, and something like the old family coal-scuttle on our heads, save that that venerable object was never decorated with plumes of white horsehair. You laugh—indeed the shadow of the private house still makes those dresses look a little queer. We have worn private clothes so long..... But we have not come here to laugh, or to talk of fashions—men's and women's. We are here, on the bridge, to ask ourselves certain questions. And they are very important questions; and we have very little time in which to answer them. The questions that we have to ask and to answer about that procession during this moment of transition are so important that they may well change the lives of all men and women for ever. For we have to ask ourselves, here and now, do we wish to join that procession, or don't we? On what terms shall we join that procession? Above all, where is it leading us, the procession of educated men? The moment is short; it may last five years; ten years, or perhaps only a matter of a few months longer.... But, you will object, you have no time to think; you have your battles to fight, your rent to pay, your bazaars to organize. That excuse shall not serve you, Madam. As you know from your own experience, and there are facts that prove it, the daughters of educated men have always done their thinking from hand to mouth; not under green lamps at study tables in the cloisters of secluded colleges. They have thought while they stirred the pot, while they rocked the cradle. It was thus that they won us the right to our brand-new sixpence. It falls to us now to go on thinking; how are we to spend that sixpence? Think we must. Let us think in offices; in omnibuses; while we are standing in the crowd watching Coronations and Lord Mayor's Shows; let us think ..in the gallery of the House of Commons; in the Law Courts; let us think at baptisms and marriages and funerals. Let us never cease from thinking—what is this "civilization" in which we find ourselves? What are these ceremonies and why should we take part in them? What are these professions and why should we make money out of them? Where in short is it leading us, the procession of the sons of educated men?

32

The main purpose of the passage is to

A) emphasize the value of a tradition.

B) stress the urgency of an issue.

C) highlight the severity of social divisions.

D) question the feasibility of an undertaking.

33

The central claim of the passage is that

A) educated women face a decision about how to engage with existing institutions.

B) women can have positions of influence in English society only if they give up some of their traditional roles.

C) the male monopoly on power in English society has had grave and continuing effects.

D) the entry of educated women into positions of power traditionally held by men will transform those positions.

34

Woolf uses the word "we" throughout the passage mainly to

A) reflect the growing friendliness among a group of people.

B) advance the need for candor among a group of people.

C) establish a sense of solidarity among a group of people.

D) reinforce the need for respect among a group of people.

35

According to the passage, Woolf chooses the setting of the bridge because it

A) is conducive to a mood of fanciful reflection.

B) provides a good view of the procession of the sons of educated men.

C) is within sight of historic episodes to which she alludes.

D) is symbolic of the legacy of past and present sons of educated men.

36

Woolf indicates that the procession she describes in the passage

A) has come to have more practical influence in recent years.

B) has become a celebrated feature of English public life.

C) includes all of the richest and most powerful men in England.

D) has become less exclusionary in its membership in recent years.

37

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

A) Lines 12-17 ("There . . . money")

B) Lines 17-19 ("It . . . desert")

C) Lines 23-24 ("For . . . ourselves")

D) Lines 30-34 ("We . . . pulpit")

ANS

38

Woolf characterizes the questions in lines 53-57 ("For we . . . men") as both

A) controversial and threatening.

B) weighty and unanswerable.

C) momentous and pressing.

D) provocative and mysterious.

39

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

A) Lines 46-47 ("We . . . questions")

B) Lines 48-49 ("And . . . them")

C) Line 57 ("The moment . . . short")

D) Line 62 ("That . . . Madam")

40

Which choice most closely captures the meaning of the figurative "sixpence" referred to in lines 70 and 71?

A) Tolerance

B) Knowledge

C) Opportunity

D) Perspective

41

The range of places and occasions listed in lines 72-76 ("Let us . . . funerals") mainly serves to emphasize how

A) novel the challenge faced by women is.

B) pervasive the need for critical reflection is.

C) complex the political and social issues of the day are.

D) enjoyable the career possibilities for women are.

ANS

Questions 42-52 are based on the following passages.

Passage 1 is adapted from Michael Slezak, "Space Mining: the Next Gold Rush?" ©2013 by New Scientist. Passage 2 is from the editors of *New Scientist*, "Taming the Final Frontier." ©2013 by New Scientist.

Passage 1

Follow the money and you will end up in space. That's the message from a first-of-its-kind forum on mining beyond Earth.

Line Convened in Sydney by the Australian Centre for Space Engineering Research, the event brought together mining companies, robotics experts, lunar scientists, and government agencies that are all working to make space mining a reality.

The forum comes hot on the heels of the 2012 unveiling of two private asteroid-mining firms. Planetary Resources of Washington says it will launch its first prospecting telescopes in two years, while Deep Space Industries of Virginia hopes to be harvesting metals from asteroids by 2020. Another commercial venture that sprung up in 2012, Golden Spike of Colorado, will be offering trips to the moon, including to potential lunar miners.

Within a few decades, these firms may be meeting earthly demands for precious metals, such as platinum and gold, and the rare earth elements vital for personal electronics, such as yttrium and lanthanum. But like the gold rush pioneers who transformed the western United States, the first space miners won't just enrich themselves. They also hope to build an off-planet economy free of any bonds with Earth, in which the materials extracted and processed from the moon and asteroids are delivered for space-based projects.

In this scenario, water mined from other worlds could become the most desired commodity. "In the desert, what's worth more: a kilogram of gold or a kilogram of water?" asks Kris Zacny of HoneyBee Robotics in New York. "Gold is useless. Water will let you live."

Water ice from the moon's poles could be sent to astronauts on the International Space Station for drinking or as a radiation shield. Splitting water into oxygen and hydrogen makes spacecraft fuel, so ice-rich asteroids could become interplanetary refuelling stations.

Companies are eyeing the iron, silicon, and aluminium in lunar soil and asteroids, which could be used in 3D printers to make spare parts or machinery. Others want to turn space dirt into concrete for landing pads, shelters, and roads.

Passage 2

The motivation for deep-space travel is shifting from discovery to economics. The past year has seen a flurry of proposals aimed at bringing celestial riches down to Earth. No doubt this will make a few billionaires even wealthier, but we all stand to gain: the mineral bounty and spin-off technologies could enrich us all.

But before the miners start firing up their rockets, we should pause for thought. At first glance, space mining seems to sidestep most environmental concerns: there is (probably!) no life on asteroids, and thus no habitats to trash. But its consequences —both here on Earth and in space—merit careful consideration.

Part of this is about principles. Some will argue that space's "magnificent desolation" is not ours to despoil, just as they argue that our own planet's poles should remain pristine. Others will suggest that glutting ourselves on space's riches is not an acceptable alternative to developing more sustainable ways of earthly life.

History suggests that those will be hard lines to hold, and it may be difficult to persuade the public that such barren environments are worth preserving. After all, they exist in vast abundance, and even fewer people will experience them than have walked through Antarctica's icy landscapes.

There's also the emerging off-world economy to consider. The resources that are valuable in orbit and beyond may be very different to those we prize on Earth. Questions of their stewardship have barely been broached—and the relevant legal and regulatory framework is fragmentary, to put it mildly.

Space miners, like their earthly counterparts, are often reluctant to engage with such questions.

One speaker at last week's space-mining forum in Sydney, Australia, concluded with a plea that regulation should be avoided. But miners have much to gain from a broad agreement on the for-profit exploitation of space. Without consensus, claims will be disputed, investments risky, and the gains made insecure. It is in all of our long-term interests to seek one out.

42

In lines 9-17, the author of Passage 1 mentions several companies primarily to

A) note the technological advances that make space mining possible.

B) provide evidence of the growing interest in space mining.

C) emphasize the large profits to be made from space mining.

D) highlight the diverse ways to carry out space mining operations.

43

The author of Passage 1 indicates that space mining could have which positive effect?

A) It could yield materials important to Earth's economy.

B) It could raise the value of some precious metals on Earth.

C) It could create unanticipated technological innovations.

D) It could change scientists' understanding of space resources.

44

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

A) Lines 18-22 ("Within . . . lanthanum")

B) Lines 24-28 ("They . . . projects")

C) Lines 29-30 ("In this . . . commodity")

D) Lines 41-44 ("Companies . . . machinery")

45

As used in line 19, "demands" most nearly means

A) offers.

B) claims.

C) inquiries.

D) desires.

46

What function does the discussion of water in lines 35-40 serve in Passage 1?

A) It continues an extended comparison that begins in the previous paragraph.

B) It provides an unexpected answer to a question raised in the previous paragraph.

C) It offers hypothetical examples supporting a claim made in the previous paragraph.

D) It examines possible outcomes of a proposal put forth in the previous paragraph.

47

The central claim of Passage 2 is that space mining has positive potential but

A) it will end up encouraging humanity's reckless treatment of the environment.

B) its effects should be thoughtfully considered before it becomes a reality.

C) such potential may not include replenishing key resources that are disappearing on Earth.

D) experts disagree about the commercial viability of the discoveries it could yield.

48

As used in line 68, "hold" most nearly means

A) maintain.

B) grip.

C) restrain.

D) withstand.

49

Which statement best describes the relationship between the passages?

A) Passage 2 refutes the central claim advanced in Passage 1.

B) Passage 2 illustrates the phenomenon described in more general terms in Passage 1.

C) Passage 2 argues against the practicality of the proposals put forth in Passage 1.

D) Passage 2 expresses reservations about developments discussed in Passage 1.

50

The author of Passage 2 would most likely respond to the discussion of the future of space mining in lines 18-28, Passage 1, by claiming that such a future

A) is inconsistent with the sustainable use of space resources.

B) will be difficult to bring about in the absence of regulations.

C) cannot be attained without technologies that do not yet exist.

D) seems certain to affect Earth's economy in a negative way.

51

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

A) Lines 60-63 ("Some . . . pristine")

B) Lines 74-76 ("The resources . . . Earth")

C) Lines 81-83 ("One . . . avoided")

D) Lines 85-87 ("Without . . . insecure")

52

Which point about the resources that will be highly valued in space is implicit in Passage 1 and explicit in Passage 2?

A) They may be different resources from those that are valuable on Earth.

B) They will be valuable only if they can be harvested cheaply.

C) They are likely to be primarily precious metals and rare earth elements.

D) They may increase in value as those same resources become rare on Earth.

ANS

No Test Material on This Page

ANIS

SAT Practice Test 2

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.

Whey to Go

Greek yogurt—a strained form of cultured yogurt—has grown enormously in popularity in the United States since it was first introduced in the country in the late 1980s.

From 2011 to 2012 alone, sales of Greek yogurt in the US increased by 50 percent. The resulting increase in Greek yogurt production has forced those involved in the business to address the detrimental effects that the yogurt-making process may be having on the environment. Fortunately, farmers and others in the

Greek yogurt business have found many methods of controlling and eliminating most environmental threats. Given these solutions as well as the many health benefits of the food, the advantages of Greek yogurt **1** outdo the potential drawbacks of its production.

[1] The main environmental problem caused by the production of Greek yogurt is the creation of acid whey as a by-product. [2] Because it requires up to four times more milk to make than conventional yogurt does, Greek yogurt produces larger amounts of acid whey, which is difficult to dispose of. [3] To address the problem of disposal, farmers have found a number of uses for acid whey. [4] They can add it to livestock feed as a protein **2** supplement, and people can make their own Greek-style yogurt at home by straining regular yogurt. [5] If it is improperly introduced into the environment, acid-whey runoff **3** can pollute waterways, depleting the oxygen content of streams and rivers as it decomposes. [6] Yogurt manufacturers, food **4** scientists; and government officials are also working together to develop additional solutions for reusing whey. **5**

1

A) NO CHANGE
B) defeat
C) outperform
D) outweigh

2

Which choice provides the most relevant detail?

A) NO CHANGE
B) supplement and convert it into gas to use as fuel in electricity production.
C) supplement, while sweet whey is more desirable as a food additive for humans.
D) supplement, which provides an important element of their diet.

3

A) NO CHANGE
B) can pollute waterway's,
C) could have polluted waterways,
D) has polluted waterway's,

4

A) NO CHANGE
B) scientists: and
C) scientists, and
D) scientists, and,

5

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.

ANS

6 Though these conservation methods can be costly and time-consuming, they are well worth the effort. Nutritionists consider Greek yogurt to be a healthy food: it is an excellent source of calcium and protein, serves 7 to be a digestive aid, and 8 it contains few calories in its unsweetened low- and non-fat forms. Greek yogurt is slightly lower in sugar and carbohydrates than conventional yogurt is. 9 Also, because it is more concentrated, Greek yogurt contains slightly more protein per serving, thereby helping people stay

6

The writer is considering deleting the underlined sentence. Should the writer do this?

A) Yes, because it does not provide a transition from the previous paragraph.
B) Yes, because it fails to support the main argument of the passage as introduced in the first paragraph.
C) No, because it continues the explanation of how acid whey can be disposed of safely.
D) No, because it sets up the argument in the paragraph for the benefits of Greek yogurt.

7

A) NO CHANGE
B) as
C) like
D) for

8

A) NO CHANGE
B) containing
C) contains
D) will contain

9

A) NO CHANGE
B) In other words,
C) Therefore,
D) For instance,

ANS

10 satiated for longer periods of time. These health benefits have prompted Greek yogurt's recent surge in popularity. In fact, Greek yogurt can be found in an increasing number of products such as snack food and frozen desserts. Because consumers reap the nutritional benefits of Greek yogurt and support those who make and sell **11** it, therefore farmers and businesses should continue finding safe and effective methods of producing the food.

10

A) NO CHANGE
B) fulfilled
C) complacent
D) sufficient

11

A) NO CHANGE
B) it, farmers
C) it, so farmers
D) it: farmers

ANIS

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

Dark Snow

Most of Greenland's interior is covered by a thick layer of ice and compressed snow known as the Greenland Ice Sheet. The size of the ice sheet fluctuates seasonally: in summer, average daily high temperatures in Greenland can rise to slightly above 50 degrees Fahrenheit, partially melting the ice; in the winter, the sheet thickens as additional snow falls, and average daily low temperatures can drop **12** to as low as 20 degrees.

12

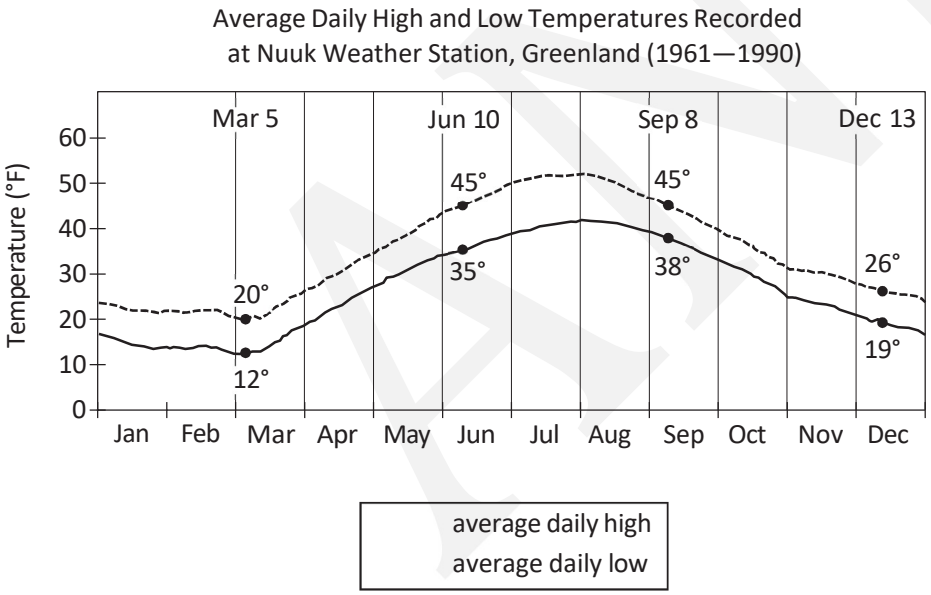
Which choice most accurately and effectively represents the information in the graph?

A) NO CHANGE

B) to 12 degrees Fahrenheit.

C) to their lowest point on December 13.

D) to 10 degrees Fahrenheit and stay there for months.



Adapted from WMO. ©2014 by World Meteorological Organization.

Typically, the ice sheet begins to show evidence of thawing in late **13** summer. This follows several weeks of higher temperatures. **14** For example, in the summer of 2012, virtually the entire Greenland Ice Sheet underwent thawing at or near its surface by mid-July, the earliest date on record. Most scientists looking for the causes of the Great Melt of 2012 have focused exclusively on rising temperatures. The summer of 2012 was the warmest in 170 years, records show. But Jason **15** Box, an associate professor of geology at Ohio State believes that another factor added to the early **16** thaw; the "dark snow" problem.

13

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

A) summer, following
B) summer, and this thawing follows
C) summer, and such thawing follows
D) summer and this evidence follows

14

A) NO CHANGE
B) However,
C) As such,
D) Moreover,

15

A) NO CHANGE
B) Box an associate professor of geology at Ohio State,
C) Box, an associate professor of geology at Ohio State,
D) Box, an associate professor of geology, at Ohio State

16

A) NO CHANGE
B) thaw; and it was
C) thaw:
D) thaw: being

ANS

According to Box, a leading Greenland expert, tundra fires in 2012 from as far away as North America produced great amounts of soot, some **17** of it drifted over Greenland in giant plumes of smoke and then **18** fell as particles onto the ice sheet. Scientists have long known that soot particles facilitate melting by darkening snow and ice, limiting **19** it's ability to reflect the Sun's rays. As Box explains, "Soot is an extremely powerful light absorber. It settles over the ice and captures the Sun's heat." The result is a self-reinforcing cycle. As the ice melts, the land and water under the ice become exposed, and since land and water are darker than snow, the surface absorbs even more heat, which **20** is related to the rising temperatures.

17

A) NO CHANGE
B) soot
C) of which
D) DELETE the underlined portion.

18

A) NO CHANGE
B) falls
C) will fall
D) had fallen

19

A) NO CHANGE
B) its
C) there
D) their

20

Which choice best completes the description of a self-reinforcing cycle?

A) NO CHANGE
B) raises the surface temperature.
C) begins to cool at a certain point.
D) leads to additional melting.

ANS

[1] Box's research is important because the fires of 2012 may not be a one-time phenomenon. [2] According to scientists, rising Arctic temperatures are making northern latitudes greener and thus more fire prone. [3] The pattern Box observed in 2012 may repeat **21** itself again, with harmful effects on the Arctic ecosystem. [4] Box is currently organizing an expedition to gather this crucial information. [5] The next step for Box and his team is to travel to Greenland to perform direct sampling of the ice in order to determine just how much the soot is contributing to the melting of the ice sheet. [6] Members of the public will be able to track his team's progress—and even help fund the expedition—through a website Box has created. **22**

21

A) NO CHANGE
B) itself,
C) itself, with damage and
D) itself possibly,

22

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

A) where it is now.
B) after sentence 1.
C) after sentence 2.
D) after sentence 5.

ANS

Questions 23-33 are based on the following passage.

Coworking: A Creative Solution

When I left my office job as a website developer at a small company for a position that allowed me to work full-time from home, I thought I had it made: I gleefully traded in my suits and dress shoes for sweatpants and slippers, my frantic early-morning bagged lunch packing for a leisurely midday trip to my refrigerator. The novelty of this comfortable work-from-home life, however, **23** soon got worn off quickly. Within a month, I found myself feeling isolated despite having frequent email and instant messaging contact with my colleagues. Having become frustrated trying to solve difficult problems, **24** no colleagues were nearby to share ideas. It was during this time that I read an article **25** into coworking spaces.

23

A) NO CHANGE
B) was promptly worn
C) promptly wore
D) wore

24

A) NO CHANGE
B) colleagues were important for sharing ideas.
C) ideas couldn't be shared with colleagues.
D) I missed having colleagues nearby to consult.

25

A) NO CHANGE
B) about
C) upon
D) for

ANS

The article, published by *Forbes* magazine, explained that coworking spaces are designated locations that, for a fee, individuals can use to conduct their work. The spaces are usually stocked with standard office **26** equipment, such as photocopiers, printers, and fax machines. **27** In these locations, however, the spaces often include small meeting areas and larger rooms for hosting presentations. **28** The cost of launching a new coworking business in the United States is estimated to be approximately $58,000.

26

A) NO CHANGE
B) equipment, such as:
C) equipment such as:
D) equipment, such as,

27

A) NO CHANGE
B) In addition to equipment,
C) For these reasons,
D) Likewise,

28

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

A) Kept, because it provides a detail that supports the main topic of the paragraph.
B) Kept, because it sets up the main topic of the paragraph that follows.
C) Deleted, because it blurs the paragraph's main focus with a loosely related detail.
D) Deleted, because it repeats information that has been provided in an earlier paragraph.

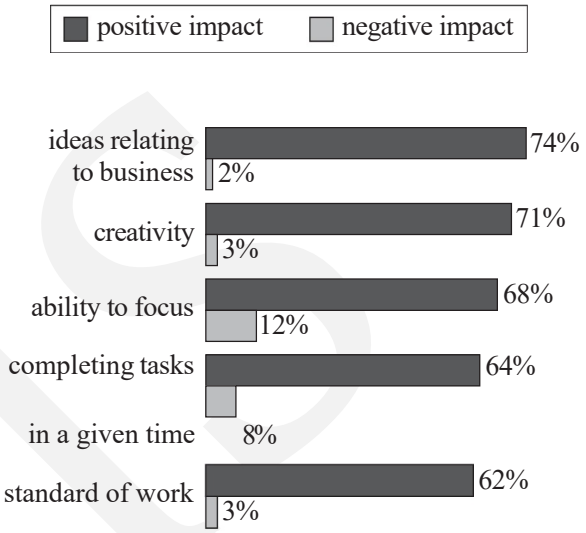
ANS

What most caught my interest, though, was a quotation from someone who described coworking spaces as "melting pots of creativity." The article refers to a 2012 survey in which **29** 64 percent of respondents noted that coworking spaces prevented them from completing tasks in a given time. The article goes on to suggest that the most valuable resources provided by coworking spaces are actually the people **30** whom use them.

29

At this point, the writer wants to add specific information that supports the main topic of the paragraph.

Perceived Effect of Coworking on Business Skills



Adapted from "The 3rd Global Coworking Survey." ©2013 by Deskmag.

Which choice most effectively completes the sentence with relevant and accurate information based on the graph above?

A) NO CHANGE

B) 71 percent of respondents indicated that using a coworking space increased their creativity.

C) respondents credited coworking spaces with giving them 74 percent of their ideas relating to business.

D) respondents revealed that their ability to focus on their work improved by 12 percent in a coworking space.

30

A) NO CHANGE

B) whom uses

C) who uses

D) who use

ANS

[1] Thus, even though I already had all the equipment I needed in my home office, I decided to try using a coworking space in my city. [2] Because I was specifically interested in coworking's reported benefits related to creativity, I chose a facility that offered a bright, open work area where I wouldn't be isolated. [3] Throughout the morning, more people appeared. [4] Periods of quiet, during which everyone worked independently, were broken up occasionally with lively conversation. **31**

I liked the experience so much that I now go to the coworking space a few times a week. Over time, I've gotten to know several of my coworking **32** colleagues: another website developer, a graphic designer, a freelance writer, and several mobile app coders. Even those of us who work in disparate fields are able to **33** share advice and help each other brainstorm. In fact, it's the diversity of their talents and experiences that makes my coworking colleagues so valuable.

31

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

> After filling out a simple registration form and taking a quick tour of the facility, I took a seat at a table and got right to work on my laptop.

The best placement for the sentence is immediately

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

32

A) NO CHANGE
B) colleagues;
C) colleagues,
D) colleagues

33

A) NO CHANGE
B) give some wisdom
C) proclaim our opinions
D) opine

ANS

Questions 34-44 are based on the following passage.

The Consolations of Philosophy

Long viewed by many as the stereotypical useless major, philosophy is now being seen by many students and prospective employers as in fact a very useful and practical major, offering students a host of transferable skills with relevance to the modern workplace. **34** In broad terms, philosophy is the study of meaning and the values underlying thought and behavior. But **35** more pragmatically, the discipline encourages students to analyze complex material, question conventional beliefs, and express thoughts in a concise manner.

Because philosophy **36** teaching students not what to think but how to think, the age-old discipline offers consistently useful tools for academic and professional achievement. **37** A 1994 survey concluded that only 18 percent of American colleges required at least one philosophy course. **38** Therefore, between 1992 and 1996, more than 400 independent philosophy departments were eliminated from institutions.

34

A) NO CHANGE
B) For example,
C) In contrast,
D) Nevertheless,

35

A) NO CHANGE
B) speaking in a more pragmatic way,
C) speaking in a way more pragmatically,
D) in a more pragmatic-speaking way,

36

A) NO CHANGE
B) teaches
C) to teach
D) and teaching

37

Which choice most effectively sets up the information that follows?

A) Consequently, philosophy students have been receiving an increasing number of job offers.
B) Therefore, because of the evidence, colleges increased their offerings in philosophy.
C) Notwithstanding the attractiveness of this course of study, students have resisted majoring in philosophy.
D) However, despite its many utilitarian benefits, colleges have not always supported the study of philosophy.

38

A) NO CHANGE
B) Thus,
C) Moreover,
D) However,

ANS

More recently, colleges have recognized the practicality and increasing popularity of studying philosophy and have markedly increased the number of philosophy programs offered. By 2008 there were 817 programs, up from 765 a decade before. In addition, the number of four-year graduates in philosophy has grown 46 percent in a decade. Also, studies have found that those students who major in philosophy often do better than students from other majors in both verbal reasoning and analytical **39** writing. These results can be measured by standardized test scores. On the Graduate Record Examination (GRE), for example, students intending to study philosophy in graduate school **40** has scored higher than students in all but four other majors.

These days, many **41** student's majoring in philosophy have no intention of becoming philosophers; instead they plan to apply those skills to other disciplines. Law and business specifically benefit from the complicated theoretical issues raised in the study of philosophy, but philosophy can be just as useful in engineering or any field requiring complex analytic skills. **42** That these skills are transferable across professions

39

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

A) writing as
B) writing, and these results can be
C) writing, which can also be
D) writing when the results are

40

A) NO CHANGE
B) have scored
C) scores
D) scoring

41

A) NO CHANGE
B) students majoring
C) students major
D) student's majors

42

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

> The ancient Greek philosopher Plato, for example, wrote many of his works in the form of dialogues.

Should the writer make this addition here?

A) Yes, because it reinforces the passage's main point about the employability of philosophy majors.
B) Yes, because it acknowledges a common counterargument to the passage's central claim.
C) No, because it blurs the paragraph's focus by introducing a new idea that goes unexplained.
D) No, because it undermines the passage's claim about the employability of philosophy majors.

ANS

43 which makes them especially beneficial to twenty-first-century students. Because today's students can expect to hold multiple jobs—some of which may not even exist yet—during **44** our lifetime, studying philosophy allows them to be flexible and adaptable. High demand, advanced exam scores, and varied professional skills all argue for maintaining and enhancing philosophy courses and majors within academic institutions.

43

A) NO CHANGE
B) that
C) and
D) DELETE the underlined portion.

44

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

ANIS

SAT® Practice Test 2

ANJIS

Test begins on the next page.

ANIS

Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

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

Questions 1-10 are based on the following passage.

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

No man likes to acknowledge that he has made a mistake in the choice of his profession, and every man, worthy of the name, will row long against wind and tide before he allows himself to cry out, "I am baffled!" and submits to be floated passively back to land. From the first week of my residence in X—— I felt my occupation irksome. The thing itself—the work of copying and translating business-letters—was a dry and tedious task enough, but had that been all, I should long have borne with the nuisance; I am not of an impatient nature, and influenced by the double desire of getting my living and justifying to myself and others the resolution I had taken to become a tradesman, I should have endured in silence the rust and cramp of my best faculties; I should not have whispered, even inwardly, that I longed for liberty; I should have pent in every sigh by which my heart might have ventured to intimate its distress under the closeness, smoke, monotony, and joyless tumult of Bigben Close, and its panting desire for freer and fresher scenes; I should have set up the image of Duty, the fetish of Perseverance, in my small bedroom at Mrs. King's lodgings, and they two should have been my household gods, from which my darling, my cherished-in-secret, Imagination, the tender and the mighty, should never, either by softness or strength, have severed me. But this was not all; the antipathy which had sprung up between myself and my employer striking deeper root and spreading denser shade daily, excluded me from every glimpse of the sunshine of life; and I began to feel like a plant growing in humid darkness out of the slimy walls of a well.

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

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

1

Which choice best summarizes the passage?

A) A character describes his dislike for his new job and considers the reasons why.

B) Two characters employed in the same office become increasingly competitive.

C) A young man regrets privately a choice that he defends publicly.

D) A new employee experiences optimism, then frustration, and finally despair.

2

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

A) establish the narrator's perspective on a controversy.

B) provide context useful in understanding the narrator's emotional state.

C) offer a symbolic representation of Edward Crimsworth's plight.

D) contrast the narrator's good intentions with his malicious conduct.

3

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

A) recollection of past confidence to acknowledgment of present self-doubt.

B) reflection on his expectations of life as a tradesman to his desire for another job.

C) generalization about job dissatisfaction to the specifics of his own situation.

D) evaluation of factors making him unhappy to identification of alternatives.

4

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

A) They evoke the narrator's sense of dismay.

B) They reflect the narrator's sinister thoughts.

C) They capture the narrator's fear of confinement.

D) They reveal the narrator's longing for rest.

5

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

A) impatience with the narrator's high spirits.

B) scorn of the narrator's humble background.

C) indignation at the narrator's rash actions.

D) jealousy of the narrator's apparent superiority.

6

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

A) harmless rival.

B) sympathetic ally.

C) perceptive judge.

D) demanding mentor.

7

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

A) Lines 28-31 (“the antipathy . . . life”)

B) Lines 38-40 (“My southern . . . irritated him”)

C) Lines 54-56 (“Day . . . slumber”)

D) Lines 61-62 (“I had . . . brother”)

8

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

A) contrasting two hypothetical courses of action.

B) conveying the ferocity of a resolution.

C) suggesting the likelihood of an altercation.

D) illustrating the nature of an adversarial relationship.

9

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

A) treacherous.

B) dreary.

C) predictable.

D) intolerable.

10

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

A) Lines 17-21 (“I should . . . scenes”)

B) Lines 21-23 (“I should . . . lodgings”)

C) Lines 64-67 (“Thoughts . . . phrases”)

D) Lines 68-74 (“I walked . . . gleam”)

ANS

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

This passage is adapted from Iain King, "Can Economics Be Ethical?" ©2013 by Prospect Publishing.

Recent debates about the economy have rediscovered the question, "is that right?", where "right" means more than just profits or efficiency.

Line

Some argue that because the free markets allow for personal choice, they are already ethical. Others have accepted the ethical critique and embraced corporate social responsibility. But before we can label any market outcome as "immoral," or sneer at economists who try to put a price on being ethical, we need to be clear on what we are talking about.

There are different views on where ethics should apply when someone makes an economic decision. Consider Adam Smith, widely regarded as the founder of modern economics. He was a moral philosopher who believed sympathy for others was the basis for ethics (we would call it empathy nowadays). But one of his key insights in *The Wealth of Nations* was that acting on this empathy could be counter-productive—he observed people becoming better off when they put their own empathy aside, and interacted in a self-interested way. Smith justifies selfish behavior by the outcome. Whenever planners use cost-benefit analysis to justify a new railway line, or someone retrains to boost his or her earning power, or a shopper buys one to get one free, they are using the same approach: empathizing with someone, and seeking an outcome that makes that person as well off as possible—although the person they are empathizing with may be themselves in the future.

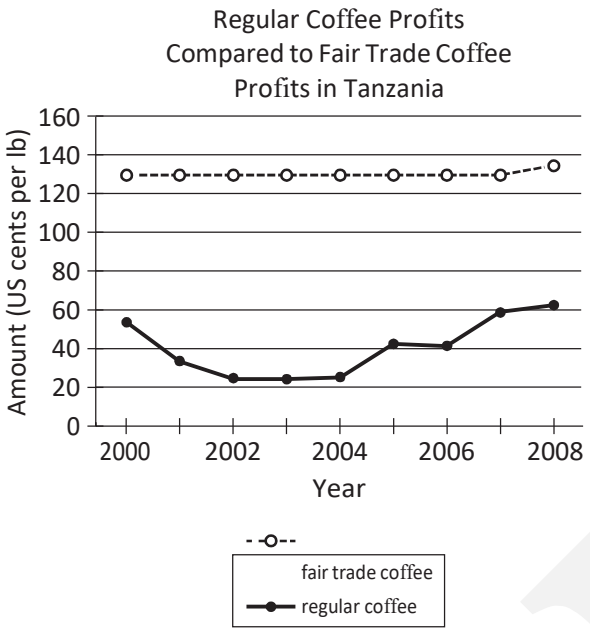
Instead of judging consequences, Aristotle said ethics was about having the right character—displaying virtues like courage and honesty. It is a view put into practice whenever business leaders are chosen for their good character. But it is a hard philosophy to teach—just how much loyalty should you show to a manufacturer that keeps losing money? Show too little and you're a "greed is good" corporate raider; too much and you're wasting money on unproductive capital. Aristotle thought there was a golden mean between the two extremes, and finding it was a matter of fine judgment. But if ethics is about character, it's not clear what those characteristics should be.

There is yet another approach: instead of rooting ethics in character or the consequences of actions, we can focus on our actions themselves. From this perspective some things are right, some wrong—we should buy fair trade goods, we shouldn't tell lies in advertisements. Ethics becomes a list of commandments, a catalog of "dos" and "don'ts." When a finance official refuses to devalue a currency because they have promised not to, they are defining ethics this way. According to this approach devaluation can still be bad, even if it would make everybody better off.

Many moral dilemmas arise when these three versions pull in different directions but clashes are not inevitable. Take fair trade coffee (coffee that is sold with a certification that indicates the farmers and workers who produced it were paid a fair wage), for example: buying it might have good consequences, be virtuous, and also be the right way to act in a flawed market. Common ground like this suggests that, even without agreement on where ethics applies, ethical economics is still possible.

Whenever we feel queasy about "perfect" competitive markets, the problem is often rooted in a phony conception of people. The model of man on which classical economics is based—an entirely rational and selfish being—is a parody, as John Stuart Mill, the philosopher who pioneered the model, accepted. Most people—even economists—now accept that this "economic man" is a fiction. We behave like a herd; we fear losses more than we hope for gains; rarely can our brains process all the relevant facts.

These human quirks mean we can never make purely "rational" decisions. A new wave of behavioral economists, aided by neuroscientists, is trying to understand our psychology, both alone and in groups, so they can anticipate our decisions in the marketplace more accurately. But psychology can also help us understand why we react in disgust at economic injustice, or accept a moral law as universal. Which means that the relatively new science of human behavior might also define ethics for us. Ethical economics would then emerge from one of the least likely places: economists themselves.



Adapted from the Fair Trade Vancouver website.

11

The main purpose of the passage is to

A) consider an ethical dilemma posed by cost-benefit analysis.

B) describe a psychology study of ethical economic behavior.

C) argue that the free market prohibits ethical economics.

D) examine ways of evaluating the ethics of economics.

12

In the passage, the author anticipates which of the following objections to criticizing the ethics of free markets?

A) Smith's association of free markets with ethical behavior still applies today.

B) Free markets are the best way to generate high profits, so ethics are a secondary consideration.

C) Free markets are ethical because they are made possible by devalued currency.

D) Free markets are ethical because they enable individuals to make choices.

13

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

A) Lines 4-5 ("Some . . . ethical")

B) Lines 7-10 ("But . . . about")

C) Lines 21-22 ("Smith . . . outcome")

D) Lines 52-54 ("When . . . way")

14

As used in line 6, "embraced" most nearly means

A) lovingly held.

B) readily adopted.

C) eagerly hugged.

D) reluctantly used.

15

The main purpose of the fifth paragraph (lines 45-56) is to

A) develop a counterargument to the claim that greed is good.

B) provide support for the idea that ethics is about character.

C) describe a third approach to defining ethical economics.

D) illustrate that one's actions are a result of one's character.

16

As used in line 58, "clashes" most nearly means

A) conflicts.

B) mismatches.

C) collisions.

D) brawls.

17

Which choice best supports the author's claim that there is common ground shared by the different approaches to ethics described in the passage?

A) Lines 11-12 ("There . . . decision")

B) Lines 47-50 ("From . . . advertisements")

C) Lines 59-64 ("Take . . . market")

D) Lines 75-77 ("We . . . facts")

18

The main idea of the final paragraph is that

A) human quirks make it difficult to predict people's ethical decisions accurately.

B) people universally react with disgust when faced with economic injustice.

C) understanding human psychology may help to define ethics in economics.

D) economists themselves will be responsible for reforming the free market.

19

Data in the graph about per-pound coffee profits in Tanzania most strongly support which of the following statements?

A) Fair trade coffee consistently earned greater profits than regular coffee earned.

B) The profits earned from regular coffee did not fluctuate.

C) Fair trade coffee profits increased between 2004 and 2006.

D) Fair trade and regular coffee were earning equal profits by 2008.

20

Data in the graph indicate that the greatest difference between per-pound profits from fair trade coffee and those from regular coffee occurred during which period?

A) 2000 to 2002

B) 2002 to 2004

C) 2004 to 2005

D) 2006 to 2008

21

Data in the graph provide most direct support for which idea in the passage?

A) Acting on empathy can be counterproductive.

B) Ethical economics is defined by character.

C) Ethical economics is still possible.

D) People fear losses more than they hope for gains.

Questions 22-32 are based on the following passages.

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

Passage 1

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

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

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

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

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

Passage 2

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

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

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

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

22

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

A) It should be thoroughly studied.

B) It makes the brain increasingly rigid.

C) It has some positive effects.

D) It should be widely encouraged.

23

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

A) Lines 3-4 ("Certain . . . Net")

B) Lines 23-25 ("But . . . smarter")

C) Lines 25-29 ("In a . . . ability")

D) Lines 29-31 ("She . . . others")

24

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

A) make people complacent about their health.

B) undermine the ability to think deeply.

C) increase people's social contacts.

D) improve people's self-confidence.

25

As used in line 40, "plastic" most nearly means

A) creative.

B) artificial.

C) malleable.

D) sculptural.

26

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

A) did not like Tolstoy's writing style.

B) could not comprehend the novel by speed-reading it.

C) had become quite skilled at multitasking.

D) regretted having read such a long novel.

27

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

A) They take risks when they pursue knowledge.

B) They are eager to improve their minds.

C) They are curious about other subjects.

D) They become absorbed in their own fields.

28

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

A) It uses ornate language to illustrate a difficult concept.

B) It employs humor to soften a severe opinion of human behavior.

C) It alludes to the past to evoke a nostalgic response.

D) It criticizes the view of a particular group.

29

The main purpose of each passage is to

A) compare brain function in those who play games on the Internet and those who browse on it.

B) report on the problem-solving skills of individuals with varying levels of Internet experience.

C) take a position on increasing financial support for studies related to technology and intelligence.

D) make an argument about the effects of electronic media use on the brain.

30

Which choice best describes the relationship between the two passages?

A) Passage 2 relates first-hand experiences that contrast with the clinical approach in Passage 1.

B) Passage 2 critiques the conclusions drawn from the research discussed in Passage 1.

C) Passage 2 takes a high-level view of a result that Passage 1 examines in depth.

D) Passage 2 predicts the negative reactions that the findings discussed in Passage 1 might produce.

31

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

A) Computer-savvy children tend to demonstrate better hand-eye coordination than do their parents.

B) Those who criticize consumers of electronic media tend to overreact in their criticism.

C) Improved visual-spatial skills do not generalize to improved skills in other areas.

D) Internet users are unlikely to prefer reading onscreen text to reading actual books.

32

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

A) Lines 51-53 ("Critics . . . brain")

B) Lines 54-56 ("Yes . . . changes")

C) Lines 57-59 ("But . . . experience")

D) Lines 83-84 ("Media . . . consumes")

Questions 33-42 are based on the following passage.

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

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

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

People object to the demands of those whom they choose to call the strong-minded, because they say "the right of suffrage will make the women masculine." That is just the difficulty in which we are involved today. Though disfranchised, we have few women in the best sense; we have simply so many reflections, varieties, and dilutions of the masculine gender. The strong, natural characteristics of womanhood are repressed and ignored in dependence, for so long as man feeds woman she will try to please the giver and adapt herself to his condition. To keep a foothold in society, woman must be as near like man as possible, reflect his ideas, opinions, virtues, motives, prejudices, and vices. She must respect his statutes, though they strip her of every inalienable right, and conflict with that higher law written by the finger of God on her own soul. . . .

. . . [M]an has been molding woman to his ideas by direct and positive influences, while she, if not a negation, has used indirect means to control him, and in most cases developed the very characteristics both in him and herself that needed repression. And now man himself stands appalled at the results of his own excesses, and mourns in bitterness that falsehood, selfishness, and violence are the law of life. The need of this hour is not territory, gold mines, railroads, or specie payments but a new evangel of womanhood, to exalt purity, virtue, morality, true religion, to lift man up into the higher realms of thought and action.

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

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

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

33

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

A) denied equal educational opportunities, which has kept them from reaching their potential.

B) prevented from exerting their positive influence on men, which has led to societal breakdown.

C) prevented from voting, which has resulted in poor candidates winning important elections.

D) blocked by men from serving as legislators, which has allowed the creation of unjust laws.

34

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

A) utter domination of women by men.

B) freewheeling spirit of the age.

C) scandalous decline in moral values.

D) growing power of women in society.

35

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

A) The control of society by men

B) The spread of war and injustice

C) The domination of domestic life by men

D) The acknowledgment of women's true character

36

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

A) Lines 3-7 ("The male . . . death")

B) Lines 15-22 ("The male . . . century")

C) Lines 22-25 ("Society . . . home")

D) Lines 48-52 ("[M]an . . . repression")

37

As used in line 24, "rule" most nearly refers to

A) a general guideline.

B) a controlling force.

C) an established habit.

D) a procedural method.

38

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

A) praise women who fight for their long-denied rights.

B) identify women who demonstrate intellectual skill.

C) criticize women who enter male-dominated professions.

D) condemn women who agitate for the vote for their sex.

39

As used in line 36, "best" most nearly means

A) superior.

B) excellent.

C) genuine.

D) rarest.

40

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

A) lament the problems they have created.

B) join the call for woman suffrage.

C) consider women their social equals.

D) ask women how to improve civic life.

41

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

A) Lines 25-30 (“No one . . . matters”)

B) Lines 53-55 (“And now . . . life”)

C) Lines 56-60 (“The need . . . action”)

D) Lines 61-64 (“We ask . . . nation”)

42

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

A) men and women.

B) the spiritual world and the material world.

C) bad men and good men.

D) men and masculine traits.

ANIS

Questions 43-52 are based on the following passage and supplementary material.

This passage is adapted from Geoffrey Giller, "Long a Mystery, How 500-Meter-High Undersea Waves Form Is Revealed." ©2014 by Scientific American.

Some of the largest ocean waves in the world are nearly impossible to see. Unlike other large waves, these rollers, called internal waves, do not ride the ocean surface. Instead, they move underwater, undetectable without the use of satellite imagery or sophisticated monitoring equipment. Despite their hidden nature, internal waves are fundamental parts of ocean water dynamics, transferring heat to the ocean depths and bringing up cold water from below. And they can reach staggering heights—some as tall as skyscrapers.

Because these waves are involved in ocean mixing and thus the transfer of heat, understanding them is crucial to global climate modeling, says Tom Peacock, a researcher at the Massachusetts Institute of Technology. Most models fail to take internal waves into account. "If we want to have more and more accurate climate models, we have to be able to capture processes such as this," Peacock says.

Peacock and his colleagues tried to do just that. Their study, published in November in *Geophysical Research Letters*, focused on internal waves generated in the Luzon Strait, which separates Taiwan and the Philippines. Internal waves in this region, thought to be some of the largest in the world, can reach about 500 meters high. "That's the same height as the Freedom Tower that's just been built in New York," Peacock says.

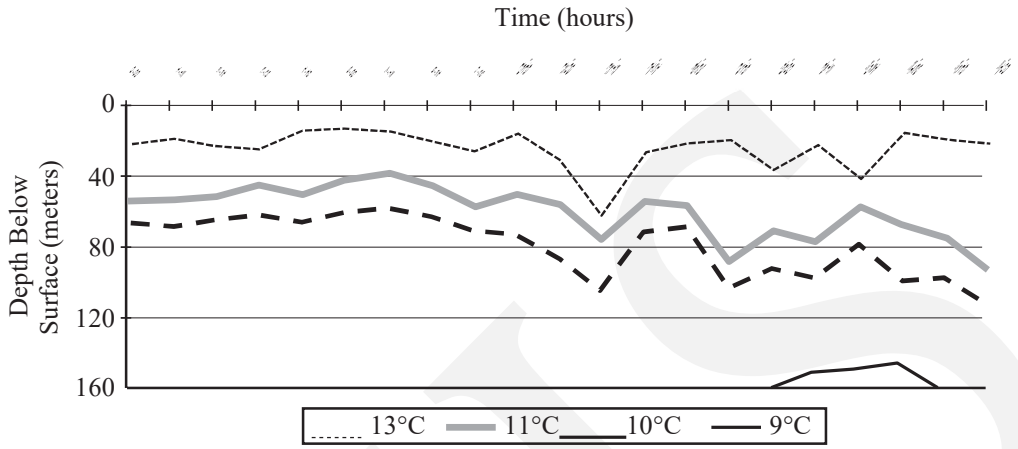
Although scientists knew of this phenomenon in the South China Sea and beyond, they didn't know exactly how internal waves formed. To find out, Peacock and a team of researchers from M.I.T. and Woods Hole Oceanographic Institution worked with France's National Center for Scientific Research using a giant facility there called the Coriolis Platform. The rotating platform, about 15 meters (49.2 feet) in diameter, turns at variable speeds and can simulate Earth's rotation. It also has walls, which means scientists can fill it with water and create accurate, large-scale simulations of various oceanographic scenarios.

Peacock and his team built a carbon-fiber resin scale model of the Luzon Strait, including the islands and surrounding ocean floor topography. Then they filled the platform with water of varying salinity to replicate the different densities found at the strait, with denser, saltier water below and lighter, less briny water above. Small particles were added to the solution and illuminated with lights from below in order to track how the liquid moved. Finally, they re-created tides using two large plungers to see how the internal waves themselves formed.

The Luzon Strait's underwater topography, with a distinct double-ridge shape, turns out to be responsible for generating the underwater waves. As the tide rises and falls and water moves through the strait, colder, denser water is pushed up over the ridges into warmer, less dense layers above it. This action results in bumps of colder water trailed by warmer water that generate an internal wave. As these waves move toward land, they become steeper—much the same way waves at the beach become taller before they hit the shore—until they break on a continental shelf.

The researchers were also able to devise a mathematical model that describes the movement and formation of these waves. Whereas the model is specific to the Luzon Strait, it can still help researchers understand how internal waves are generated in other places around the world. Eventually, this information will be incorporated into global climate models, making them more accurate. "It's very clear, within the context of these [global climate] models, that internal waves play a role in driving ocean circulations," Peacock says.

CHANGES IN DEPTH OF ISOTHERMS*
IN AN INTERNAL WAVE OVER A 24-HOUR PERIOD



* Bands of water of constant temperatures

Adapted from Justin Small et al., "Internal Solitons in the Ocean: Prediction from SAR." ©1998 by Oceanography, Defence Evaluation and Research Agency.

43

The first paragraph serves mainly to

A) explain how a scientific device is used.

B) note a common misconception about an event.

C) describe a natural phenomenon and address its importance.

D) present a recent study and summarize its findings.

44

As used in line 19, "capture" is closest in meaning to

A) control.

B) record.

C) secure.

D) absorb.

45

According to Peacock, the ability to monitor internal waves is significant primarily because

A) it will allow scientists to verify the maximum height of such waves.

B) it will allow researchers to shift their focus to improving the quality of satellite images.

C) the study of wave patterns will enable regions to predict and prevent coastal damage.

D) the study of such waves will inform the development of key scientific models.

46

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

A) Lines 1-2 ("Some . . . see")

B) Lines 4-6 ("they . . . equipment")

C) Lines 17-19 ("If . . . this")

D) Lines 24-26 ("Internal . . . high")

47

As used in line 65, “devise” most nearly means

A) create.

B) solve.

C) imagine.

D) begin.

48

Based on information in the passage, it can reasonably be inferred that all internal waves

A) reach approximately the same height even though the locations and depths of continental shelves vary.

B) may be caused by similar factors but are influenced by the distinct topographies of different regions.

C) can be traced to inconsistencies in the tidal patterns of deep ocean water located near islands.

D) are generated by the movement of dense water over a relatively flat section of the ocean floor.

49

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

A) Lines 29-31 (“Although . . . formed”)

B) Lines 56-58 (“As the . . . it”)

C) Lines 61-64 (“As these . . . shelf”)

D) Lines 67-70 (“Whereas . . . world”)

50

In the graph, which isotherm displays an increase in depth below the surface during the period 19:12 to 20:24?

A) 9°C

B) 10°C

C) 11°C

D) 13°C

51

Which concept is supported by the passage and by the information in the graph?

A) Internal waves cause water of varying salinity to mix.

B) Internal waves push denser water above layers of less dense water.

C) Internal waves push bands of cold water above bands of warmer water.

D) Internal waves do not rise to break the ocean’s surface.

52

How does the graph support the author’s point that internal waves affect ocean water dynamics?

A) It demonstrates that wave movement forces warmer water down to depths that typically are colder.

B) It reveals the degree to which an internal wave affects the density of deep layers of cold water.

C) It illustrates the change in surface temperature that takes place during an isolated series of deep waves.

D) It shows that multiple waves rising near the surface of the ocean disrupt the flow of normal tides.

No Test Material On This Page

ANIS

Writing and Language Test

35 MINUTES, 44 QUESTIONS

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.

Librarians Help Navigate in the Digital Age

In recent years, public libraries in the United States have experienced ■ reducing in their operating funds due to cuts imposed at the federal, state, and local government levels. ■ However, library staffing has been cut by almost four percent since 2008, and the demand for librarians continues to decrease, even though half of public libraries report that they have an insufficient number of staff to meet their patrons' needs. Employment in all job sectors in the United States is projected to grow by fourteen percent over the next

1

A) NO CHANGE
B) reductions
C) deducting
D) deducts

2

A) NO CHANGE
B) Consequently,
C) Nevertheless,
D) Previously,

decade, yet the expected growth rate for librarians is predicted to be only seven percent, or half of the overall rate. This trend, combined with the increasing accessibility of information via the Internet, ___ has led some to claim that librarianship is in decline as a profession. As public libraries adapt to rapid technological advances in information distribution, librarians' roles are actually expanding.

The share of library materials that is in nonprint formats ___ is increasing steadily; in 2010, at least 18.5 million e-books were available ___ for them to circulate. As a result, librarians must now be proficient curators of electronic information, compiling, ___ catalog, and updating these collections. But perhaps even more importantly, librarians function as first responders for their communities' computer needs. Since

3

A) NO CHANGE
B) have
C) which have
D) which has

4

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

—e-books, audio and video materials, and online journals—

Should the writer make this addition here?

A) Yes, because it provides specific examples of the materials discussed in the sentence.
B) Yes, because it illustrates the reason for the increase mentioned later in the sentence.
C) No, because it interrupts the flow of the sentence by supplying irrelevant information.
D) No, because it weakens the focus of the passage by discussing a subject other than librarians.

5

A) NO CHANGE
B) to be circulated by them.
C) for their circulating.
D) for circulation.

6

A) NO CHANGE
B) librarians cataloging,
C) to catalog,
D) cataloging,

one of the fastest growing library services is public access computer use, there is great demand for computer instruction. ■ In fact, librarians' training now includes courses on research and Internet search methods. Many of whom teach classes in Internet navigation, database and software use, and digital information literacy. While these classes are particularly helpful to young students developing basic research skills, ■ but adult patrons can also benefit from librarian assistance in that they can acquire job-relevant computer skills. ■ Free to all who utilize their services, public libraries and librarians are especially valuable, because they offer free resources that may be difficult to find elsewhere, such as help with online job

7

Which choice most effectively combines the underlined sentences?

A) In fact, librarians' training now includes courses on research and Internet search methods; many librarians teach classes in Internet navigation, database and software use, and digital information literacy is taught by them.

B) In fact, many librarians, whose training now includes courses on research and Internet search methods, teach classes in Internet navigation, database and software use, and digital information literacy.

C) Training now includes courses on research and Internet search methods; many librarians, in fact, are teaching classes in Internet navigation, database and software use, and digital information literacy.

D) Including courses on research and Internet search methods in their training is, in fact, why many librarians teach classes in Internet navigation, database and software use, and digital information literacy.

8

A) NO CHANGE

B) and

C) for

D) DELETE the underlined portion.

9

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

A) NO CHANGE

B) During periods of economic recession,

C) Although their value cannot be measured,

D) When it comes to the free services libraries provide,

searches as well as résumé and job material development. An overwhelming number of public libraries also report that they provide help with electronic government resources related to income taxes, ■ law troubles, and retirement programs.

In sum, the Internet does not replace the need for librarians, and librarians are hardly obsolete. ■ Like books, librarians have been around for a long time, but the Internet is extremely useful for many types of research.

10

A) NO CHANGE
B) legal issues,
C) concerns related to law courts,
D) matters for the law courts,

11

Which choice most clearly ends the passage with a restatement of the writer's primary claim?

A) NO CHANGE
B) Although their roles have diminished significantly, librarians will continue to be employed by public libraries for the foreseeable future.
C) The growth of electronic information has led to a diversification of librarians' skills and services, positioning them as savvy resource specialists for patrons.
D) However, given their extensive training and skills, librarians who have been displaced by budget cuts have many other possible avenues of employment.

ANS

Questions 12-22 are based on the following passage.

Tiny Exhibit, Big Impact

— 1 —

The first time I visited the Art Institute of Chicago, I expected to be impressed by its famous large paintings. ■ On one hand, I couldn't wait to view ■ painter, Georges Seurat's, 10-foot-wide *A Sunday Afternoon on the Island of La Grande Jatte* in its full size. It took me by surprise, then, when my favorite exhibit at the museum was one of ■ it's tiniest; the Thorne Miniature Rooms.

12

A) NO CHANGE
B) For instance,
C) However,
D) Similarly,

13

A) NO CHANGE
B) painter, Georges Seurat's
C) painter Georges Seurat's,
D) painter Georges Seurat's

14

A) NO CHANGE
B) its tiniest;
C) its tiniest:
D) it's tiniest,

ANS

—2—

Viewing the exhibit, I was amazed by the intricate details of some of the more ornately decorated rooms. I marveled at a replica of a salon (a formal living room) dating back to the reign of French king Louis XV. ■ Built into the dark paneled walls are bookshelves stocked with leather-bound volumes. The couch and chairs, in keeping with the style of the time, are characterized by elegantly curved arms and ■ legs, they are covered in luxurious velvet. A dime-sized portrait of a French aristocratic woman hangs in a golden frame.

—3—

This exhibit showcases sixty-eight miniature rooms inserted into a wall at eye level. Each furnished room consists of three walls; the fourth wall is a glass pane through which museumgoers observe. The rooms and their furnishings were painstakingly created to scale at 1/12th their actual size, so that one inch in the exhibit correlates with one foot in real life. A couch, for example, is seven inches long, and ■ that is based on a seven-foot-long couch. Each room represents a distinctive style of European, American, or Asian interior design from the thirteenth to twentieth centuries.

15

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

> Some scholars argue that the excesses of King Louis XV's reign contributed significantly to the conditions that resulted in the French Revolution.

Should the writer make this addition here?

A) Yes, because it provides historical context for the Thorne Miniature Rooms exhibit.

B) Yes, because it explains why salons are often ornately decorated.

C) No, because it interrupts the paragraph's description of the miniature salon.

D) No, because it implies that the interior designer of the salon had political motivations.

16

A) NO CHANGE

B) legs, the couch and chairs

C) legs and

D) legs,

17

Which choice gives a second supporting example that is most similar to the example already in the sentence?

A) NO CHANGE

B) a tea cup is about a quarter of an inch.

C) there are even tiny cushions on some.

D) household items are also on this scale.

— 4 —

The plainer rooms are more sparsely ■ furnished. Their architectural features, furnishings, and decorations are just as true to the periods they represent. One of my favorite rooms in the whole exhibit, in fact, is an 1885 summer kitchen. The room is simple but spacious, with a small sink and counter along one wall, a cast-iron wood stove and some hanging pots and pans against another wall, and ■ a small table under a window of the third wall. Aside from a few simple wooden chairs placed near the edges of the room, the floor is open and obviously well worn.

18

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

A) furnished by their
B) furnished, but their
C) furnished: their
D) furnished, whereas

19

Which choice most closely matches the stylistic pattern established earlier in the sentence?

A) NO CHANGE
B) a small table is under the third wall's window.
C) the third wall has a window and small table.
D) the third wall has a small table against it and a window.

— 5 —

As I walked through the exhibit, I overheard a [redacted] visitors' remark, "You know, that grandfather clock actually runs. Its glass door swings open, and the clock can be wound up." [redacted] Dotted with pin-sized knobs, another visitor noticed my fascination with a tiny writing desk and its drawers. "All of those little drawers pull out. And you see that hutch? Can you believe it has a secret compartment?" Given the exquisite craftsmanship and level of detail I'd already seen, I certainly could.

Question 22 asks about the previous passage as a whole.

20

A) NO CHANGE
B) visitors remarking,
C) visitor remarked,
D) visitor remark,

21

A) NO CHANGE
B) Another visitor, dotted with pin-sized knobs, noticed my fascination with a tiny writing desk and its drawers.
C) Another visitor dotted with pin-sized knobs noticed my fascination with a tiny writing desk and its drawers.
D) Another visitor noticed my fascination with a tiny writing desk and its drawers, dotted with pin-sized knobs.

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

22

To make the passage most logical, paragraph 2 should be placed

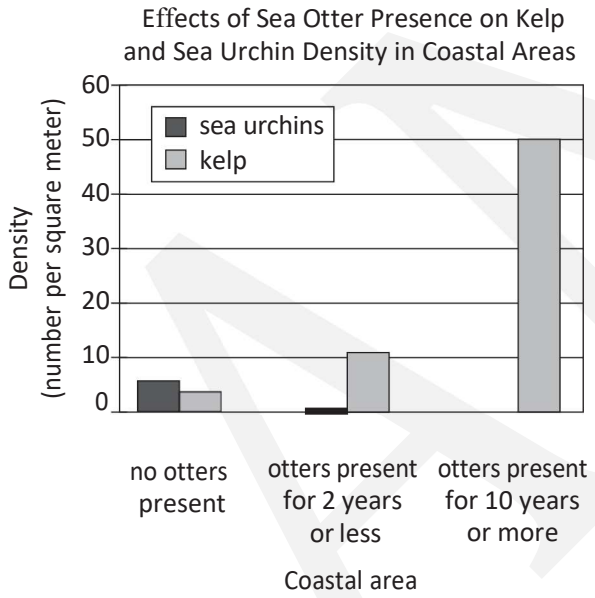
A) where it is now.
B) after paragraph 3.
C) after paragraph 4.
D) after paragraph 5.

ANS

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

Environmentalist Otters

It has long been known that the sea otters ■ living along the West Coast of North America help keep kelp forests in their habitat healthy and vital. They do this by feeding on sea urchins and other herbivorous invertebrates that graze voraciously on kelp. With sea otters to keep the population of sea urchins in check, kelp forests can flourish. In fact, ■ two years or less of sea otters can completely eliminate sea urchins in a coastal area (see chart).



Adapted from David O. Duggins, "Kelp Beds and Sea Otters: An Experimental Approach." ©1980 by the Ecological Society of America.

Without sea otters present, ■ nevertheless, kelp forests run the danger of becoming barren stretches of coastal wasteland known as urchin barrens.

23

A) NO CHANGE
B) living along the West Coast of North America, they help
C) that live along the West Coast of North America and help to
D) that live along the West Coast of North America, where they help

24

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

A) NO CHANGE
B) even two years or less of sea otter presence can reduce the sea urchin threat
C) kelp density increases proportionally as sea urchin density increases
D) even after sea otters were present for ten years or more, kelp density was still lower than sea urchin density

25

A) NO CHANGE
B) however,
C) hence,
D) likewise,

[1] What was less well-known, until recently at least, was how this relationship among sea otters, sea urchins, and kelp forests might help fight global warming. [2] The amount of carbon dioxide in the atmosphere has increased 40 percent ▇. [3] A recent study by two professors at the University of California, Santa Cruz, Chris Wilmers and James Estes, ▇ suggests, that kelp forests protected by sea otters can absorb as much as twelve times the amount of carbon dioxide from the atmosphere as those where sea urchins are allowed to ▇ devour the kelp. [4] Like ▇ their terrestrial plant cousins, kelp removes carbon dioxide from the atmosphere, turning it into sugar fuel through photosynthesis, and releases oxygen back into the air.

26

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

> since the start of the Industrial Revolution, resulting in a rise in global temperatures

Should the writer make this addition here?

A) Yes, because it establishes the relationship between the level of carbon dioxide in the atmosphere and global warming.

B) Yes, because it explains the key role sea otters, sea urchins, and kelp forests play in combating global warming.

C) No, because it contradicts the claim made in the previous paragraph that sea otters help keep kelp forests healthy.

D) No, because it mentions the Industrial Revolution, blurring the focus of the paragraph.

27

A) NO CHANGE

B) suggests—that

C) suggests, "that

D) suggests that

28

A) NO CHANGE

B) dispatch

C) overindulge on

D) dispose of

29

A) NO CHANGE

B) they're

C) its

D) it's

[5] Scientists knew this but did not recognize ■ how large a role they played in helping kelp forests to

significantly decrease the amount of carbon dioxide in the atmosphere. [6] Far from making no difference to the ecosystem, the presence of otters was found to increase the carbon storage of kelp forests by 4.4 to 8.7 megatons annually, offsetting the amount of carbon dioxide emitted by three million to six million passenger cars each year.■

Wilmers and Estes caution, however, that ■ having more otters will not automatically solve the problem of higher levels of carbon dioxide in the air. But they suggest that the presence of otters provides a good model of how carbon can be sequestered, ■ or removed; from the atmosphere through the management of animal populations. If ecologists can better understand what kinds of impacts animals might have on the environment, Wilmers contends, "there might be opportunities for win-win conservation scenarios, whereby animal species are protected or enhanced, and carbon gets sequestered."

30

A) NO CHANGE

B) how large a role that it played

C) how large a role sea otters played

D) that they played such a large role

31

Where is the most logical place in this paragraph to add the following sentence?

What Wilmers and Estes discovered in their study, therefore, surprised them.

A) After sentence 1

B) After sentence 3

C) After sentence 4

D) After sentence 5

32

A) NO CHANGE

B) increasing the otter population

C) the otters multiplying

D) having more otters than other locations

33

A) NO CHANGE

B) or removed from,

C) or, removed from,

D) or removed, from

Questions 34-44 are based on the following passage.

A Quick Fix in a Throwaway Culture

Planned obsolescence, a practice ___ at which products are designed to have a limited period of ___ usefulness, has been a cornerstone of manufacturing strategy for the past 80 years. This approach increases sales, but it also stands in ___ austere contrast to a time when goods were produced to be durable. Planned obsolescence wastes materials as well as energy in making and shipping new products. It also reinforces the belief that it is easier to replace goods than to mend them, as repair shops are rare and ___ repair methods are often specialized. In 2009, an enterprising movement, the Repair Café, challenged this widely accepted belief.

34

A) NO CHANGE
B) from which
C) so that
D) whereby

35

A) NO CHANGE
B) usefulness—
C) usefulness;
D) usefulness

36

A) NO CHANGE
B) egregious
C) unmitigated
D) stark

37

Which choice provides information that best supports the claim made by this sentence?

A) NO CHANGE
B) obsolete goods can become collectible items.
C) no one knows whether something will fall into disrepair again.
D) new designs often have "bugs" that must be worked out.

[1] More like a ___ fair then an actual café, the first Repair Café took place in Amsterdam, the Netherlands. [2] It was the brainchild of former journalist Martine Postma, ___ wanting to take a practical stand in a throwaway culture. [3] Her goals were ___ straightforward, however: reduce waste, maintain and perpetuate knowledge and skills, and strengthen community. [4] Participants bring all manner of damaged articles—clothing, appliances, furniture, and more—to be repaired by a staff of volunteer specialists including tailors, electricians, and carpenters. [5] Since the inaugural Repair Café, others have been hosted in theater foyers, community centers, hotels, and auditoriums. [6] While ___ they await for service, patrons can enjoy coffee and snacks and mingle with their neighbors in need. ___

38

A) NO CHANGE
B) fair than
C) fare than
D) fair, then

39

A) NO CHANGE
B) whom wants
C) who wanted
D) she wanted

40

A) NO CHANGE
B) straightforward, therefore:
C) straightforward, nonetheless:
D) straightforward:

41

A) NO CHANGE
B) awaiting
C) they waited
D) waiting

42

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

A) where it is now.
B) before sentence 1.
C) after sentence 3.
D) after sentence 6.

Though only about 3 percent of the Netherlands' municipal waste ends up in landfills, Repair Cafés still raise awareness about what may otherwise be mindless acts of waste by providing a venue for people to share and learn valuable skills that are in danger of being lost. ■ It is easy to classify old but fixable items as "junk" in an era that places great emphasis on the next big thing. In helping people consider how the goods they use on a daily basis work and are made, Repair Cafés restore a sense of relationship between human beings and material goods.

Though the concept remained a local trend at first, international Repair Cafés, all affiliated with the Dutch Repair Café via its website, have since arisen in France, Germany, South Africa, the United States, and other countries ■ <u>on top of that.</u> The original provides a central source for start-up tips and tools, as well as marketing advice to new Repair Cafés. As a result, the Repair Café has become a global network united by common ideals. Ironically, innovators are now looking back to old ways of doing things and applying them in today's cities in an effort to transform the way people relate to and think about the goods they consume.

43

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

> As the number of corporate and service-based jobs has increased, the need for people who work with their hands has diminished.

Should the writer make this addition here?

A) Yes, because it provides an example of specific repair skills being lost.

B) Yes, because it elaborates on the statistic about the Netherlands' municipal waste.

C) No, because it blurs the paragraph's focus by introducing a topic that is not further explained.

D) No, because it contradicts the claims made in the rest of the paragraph.

44

A) NO CHANGE

B) in addition.

C) likewise.

D) DELETE the underlined portion, and end the sentence with a period.

SAT® Practice Test 3

ANIS

ANIS

Test begins on the next page.

ANIS

Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

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

Questions 1-10 are based on the following passage.

This passage is adapted from Saki, "The Schartz-Metterklume Method." Originally published in 1911.

Lady Carlotta stepped out on to the platform of the small wayside station and took a turn or two up and down its uninteresting length, to kill time till the train should be pleased to proceed on its way. Then, in the roadway beyond, she saw a horse struggling with a more than ample load, and a carter of the sort that seems to bear a sullen hatred against the animal that helps him to earn a living. Lady Carlotta promptly betook her to the roadway, and put rather a different complexion on the struggle. Certain of her acquaintances were wont to give her plentiful admonition as to the undesirability of interfering on behalf of a distressed animal, such interference being "none of her business." Only once had she put the doctrine of non-interference into practice, when one of its most eloquent exponents had been besieged for nearly three hours in a small and extremely uncomfortable may-tree by an angry boar-pig, while Lady Carlotta, on the other side of the fence, had proceeded with the water-colour sketch she was engaged on, and refused to interfere between the boar and his prisoner. It is to be feared that she lost the friendship of the ultimately rescued lady. On this occasion she merely lost the train, which gave way to the first sign of impatience it had shown throughout the journey, and steamed off without her. She bore the desertion with philosophical indifference; her friends and relations were thoroughly well used to the fact of her luggage arriving without her. She wired a vague non-committal message to her destination to say that she was coming on "by another train." Before she had time to think what her next move might be she was confronted by an imposingly attired lady, who seemed to be taking a prolonged mental inventory of her clothes and looks.

"You must be Miss Hope, the governess I've come to meet," said the apparition, in a tone that admitted of very little argument.

"Very well, if I must I must," said Lady Carlotta to herself with dangerous meekness.

"I am Mrs. Quabarl," continued the lady; "and where, pray, is your luggage?"

"It's gone astray," said the alleged governess, falling in with the excellent rule of life that the absent are always to blame; the luggage had, in point of fact, behaved with perfect correctitude. "I've just telegraphed about it," she added, with a nearer approach to truth.

"How provoking," said Mrs. Quabarl; "these railway companies are so careless. However, my maid can lend you things for the night," and she led the way to her car.

During the drive to the Quabarl mansion Lady Carlotta was impressively introduced to the nature of the charge that had been thrust upon her; she learned that Claude and Wilfrid were delicate, sensitive young people, that Irene had the artistic temperament highly developed, and that Viola was

something or other else of a mould equally commonplace among children of that class and type in the twentieth century.

"I wish them not only to be TAUGHT," said Mrs. Quabarl, "but INTERESTED in what they learn. In their history lessons, for instance, you must try to make them feel that they are being introduced to the life-stories of men and women who really lived, not merely committing a mass of names and dates to memory. French, of course, I shall expect you to talk at meal-times several days in the week."

"I shall talk French four days of the week and Russian in the remaining three."

"Russian? My dear Miss Hope, no one in the house speaks or understands Russian."

"That will not embarrass me in the least," said Lady Carlotta coldly.

Mrs. Quabarl, to use a colloquial expression, was knocked off her perch. She was one of those imperfectly self-assured individuals who are magnificent and autocratic as long as they are not seriously opposed. The least show of unexpected resistance goes a long way towards rendering them cowed and apologetic. When the new governess failed to express wondering admiration of the large newly-purchased and expensive car, and lightly alluded to the superior advantages of one or two makes which had just been put on the market, the discomfiture of her patroness became almost abject. Her feelings were those which might have animated a general of ancient warfaring days, on beholding his heaviest battle-elephant ignominiously driven off the field by slingers and javelin throwers.

1

Which choice best summarizes the passage?

A) A woman weighs the positive and negative aspects of accepting a new job.

B) A woman does not correct a stranger who mistakes her for someone else.

C) A woman impersonates someone else to seek revenge on an acquaintance.

D) A woman takes an immediate dislike to her new employer.

2

In line 2, "turn" most nearly means

A) slight movement.

B) change in rotation.

C) short walk.

D) course correction.

3

The passage most clearly implies that other people regarded Lady Carlotta as

A) outspoken.

B) tactful.

C) ambitious.

D) unfriendly.

4

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

A) Lines 10-14 ("Certain… business")

B) Lines 22-23 ("It is… lady")

C) Lines 23-26 ("On this… her")

D) Lines 30-32 ("She… train")

5

The description of how Lady Carlotta "put the doctrine of non-interference into practice" (lines 14-15) mainly serves to

A) foreshadow her capacity for deception.

B) illustrate the subtle cruelty in her nature.

C) provide a humorous insight into her character.

D) explain a surprising change in her behavior.

6

In line 55, "charge" most nearly means

A) responsibility.

B) attack.

C) fee.

D) expense.

7

The narrator indicates that Claude, Wilfrid, Irene, and Viola are

A) similar to many of their peers.

B) unusually creative and intelligent.

C) hostile to the idea of a governess.

D) more educated than others of their age.

8

The narrator implies that Mrs. Quabarl favors a form of education that emphasizes

A) traditional values.

B) active engagement.

C) artistic experimentation.

D) factual retention.

9

As presented in the passage, Mrs. Quabarl is best described as

A) superficially kind but actually selfish.

B) outwardly imposing but easily defied.

C) socially successful but irrationally bitter.

D) naturally generous but frequently imprudent.

10

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

A) Lines 49-50 ("How… careless")

B) Lines 62-68 ("I wish… memory")

C) Lines 70-73 ("I shall… Russian")

D) Lines 77-82 ("She was… apologetic")

ANS

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

This passage is adapted from Taras Grescoe, *Straphanger: Saving Our Cities and Ourselves from the Automobile*. ©2012 by Taras Grescoe.

Though there are 600 million cars on the planet, and counting, there are also seven billion people, which means that for the vast majority of us getting around involves taking buses, ferryboats, commuter trains, streetcars, and subways. In other words, traveling to work, school, or the market means being a straphanger: somebody who, by choice or necessity, relies on public transport, rather than a privately owned automobile.

Half the population of New York, Toronto, and London do not own cars. Public transport is how most of the people of Asia and Africa, the world's most populous continents, travel. Every day, subway systems carry 155 million passengers, thirty-four times the number carried by all the world's airplanes, and the global public transport market is now valued at $428 billion annually. A century and a half after the invention of the internal combustion engine, private car ownership is still an anomaly.

And yet public transportation, in many minds, is the opposite of glamour—a squalid last resort for those with one too many impaired driving charges, too poor to afford insurance, or too decrepit to get behind the wheel of a car. In much of North America, they are right: taking transit is a depressing experience. Anybody who has waited far too long on a street corner for the privilege of boarding a lurching, overcrowded bus, or wrestled luggage onto subways and shuttles to get to a big city airport, knows that transit on this continent tends to be underfunded, ill-maintained, and ill-planned. Given the opportunity, who wouldn't drive? Hopping in a car almost always gets you to your destination more quickly.

It doesn't have to be like this. Done right, public transport can be faster, more comfortable, and cheaper than the private automobile. In Shanghai, German-made magnetic levitation trains skim over elevated tracks at 266 miles an hour, whisking people to the airport at a third of the speed of sound. In provincial French towns, electric-powered streetcars run silently on rubber tires, sliding through narrow networks, allowing commuters to work on laptops as they prepare for same-day meetings in once distant capital cities. In Latin America, China, and India, working people board fast-loading buses that move like subway trains along dedicated busways, leaving the sedans and SUVs of the rich mired in dawn-to-dusk traffic jams. And some cities have transformed their streets into cycle-path freeways, making giant strides in public health and safety and the sheer livability of their neighborhoods—in the process turning the workaday bicycle into a viable form of mass transit.

If you credit the demographers, this transit trend has legs. The "Millenials," who reached adulthood around the turn of the century and now outnumber baby boomers, tend to favor cities over suburbs, and are far more willing than their parents to ride buses and subways. Part of the reason is their ease with iPads, MP3 players, Kindles, and smartphones: you can get some serious texting done when you're not driving, and earbuds offer effective insulation from all but the most extreme commuting annoyances. Even though there are more teenagers in the country than ever, only ten million have a driver's license (versus twelve million a generation ago). Baby boomers may have been raised in Leave It to Beaver suburbs, but as they retire, a significant contingent is favoring older cities and compact towns where they have the option of walking and riding bikes. Seniors, too, are more likely to use transit, and by 2025, there will be 64 million Americans over the age of sixty-five. Already, dwellings in older neighborhoods in Washington, D.C., Atlanta, and Denver, especially those near light-rail or subway stations, are commanding enormous price premiums over suburban homes. The experience of European and Asian cities shows that if you make buses, subways, and trains convenient, comfortable, fast, and safe, a surprisingly large percentage of citizens will opt to ride rather than drive.

streets along a single guide rail set into cobblestones.
From Spain to Sweden, Wi-Fi equipped high-speed
45 trains seamlessly connect with highly ramified metro

ANIS

Figure 1

Primary Occupation of Public Transportation Passengers in US Cities

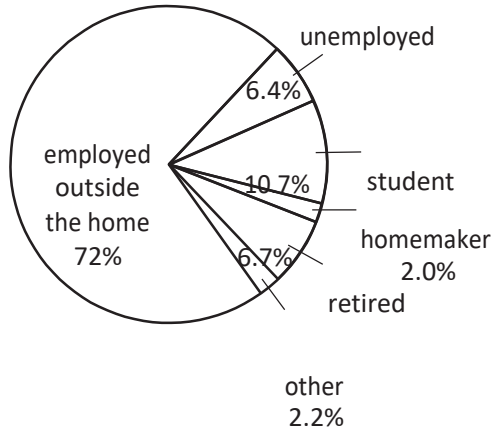


Figure 2

Purpose of Public Transportation Trips in US Cities

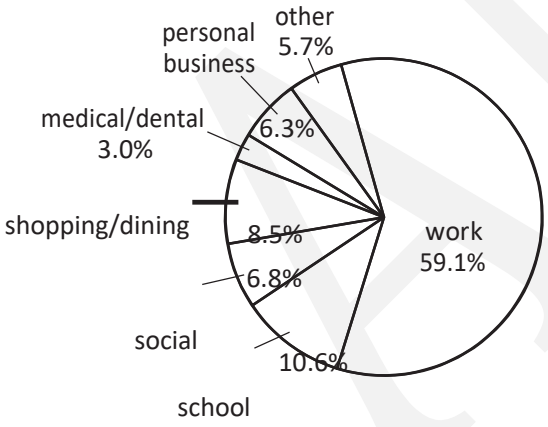


Figure 1 and figure 2 are adapted from the American Public Transportation Association, "A·Profile of Public Transportation Passenger Demographics and Travel Characteristics Reported in On-Board Surveys." ©2007 by American Public Transportation Association.

11

What function does the third paragraph (lines 20-34) serve in the passage as a whole?

A) It acknowledges that a practice favored by the author of the passage has some limitations.

B) It illustrates with detail the arguments made in the first two paragraphs of the passage.

C) It gives an overview of a problem that has not been sufficiently addressed by the experts mentioned in the passage.

D) It advocates for abandoning a practice for which the passage as a whole provides mostly favorable data.

12

Which choice does the author explicitly cite as an advantage of automobile travel in North America?

A) Environmental impact

B) Convenience

C) Speed

D) Cost

13

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

A) Lines 5-9 ("In . . . automobile")

B) Lines 20-24 ("And . . . car")

C) Lines 24-26 ("In . . . experience")

D) Lines 32-34 ("Hopping . . . quickly")

14

The central idea of the fourth paragraph (lines 35-57) is that

A) European countries excel at public transportation.

B) some public transportation systems are superior to travel by private automobile.

C) Americans should mimic foreign public transportation systems when possible.

D) much international public transportation is engineered for passengers to work while on board.

15

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

A) Line 35 ("It . . . this")

B) Lines 35-37 ("Done . . . automobile")

C) Lines 37-40 ("In . . . sound")

D) Lines 44-48 ("From . . . cities")

16

As used in line 58, "credit" most nearly means

A) endow.

B) attribute.

C) believe.

D) honor.

17

As used in line 61, "favor" most nearly means

A) indulge.

B) prefer.

C) resemble.

D) serve.

18

Which choice best supports the conclusion that public transportation is compatible with the use of personal electronic devices?

A) Lines 59-63 ("The . . . subways")

B) Lines 63-67 ("Part . . . annoyances")

C) Lines 68-70 ("Even . . . ago")

D) Lines 77-81 ("Already . . . homes")

19

Which choice is supported by the data in the first figure?

A) The number of students using public transportation is greater than the number of retirees using public transportation.

B) The number of employed people using public transportation and the number of unemployed people using public transportation is roughly the same.

C) People employed outside the home are less likely to use public transportation than are homemakers.

D) Unemployed people use public transportation less often than do people employed outside the home.

20

Taken together, the two figures suggest that most people who use public transportation

A) are employed outside the home and take public transportation to work.

B) are employed outside the home but take public transportation primarily in order to run errands.

C) use public transportation during the week but use their private cars on weekends.

D) use public transportation only until they are able to afford to buy a car.

Questions 21-30 are based on the following passage.

This passage is adapted from Thor Hanson, *Feathers*. ©2011 by Thor Hanson. Scientists have long debated how the ancestors of birds evolved the ability to fly. The ground-up theory assumes they were fleet-footed ground dwellers that captured prey by leaping and flapping their upper limbs. The tree-down theory assumes they were tree climbers that leapt and glided among branches.

At field sites around the world, Ken Dial saw a pattern in how young pheasants, quail, tinamous, and other ground birds ran along behind their parents. "They jumped up like popcorn," he said, describing how they would flap their half-formed wings and take short hops into the air. So when a group of graduate students challenged him to come up with new data on the age-old ground-up-tree-down debate, he designed a project to see what clues might lie in how baby game birds learned to fly.

Ken settled on the Chukar Partridge as a model species, but he might not have made his discovery without a key piece of advice from the local rancher in Montana who was supplying him with birds. When the cowboy stopped by to see how things were going, Ken showed him his nice, tidy laboratory setup and explained how the birds' first hops and flights would be measured. The rancher was incredulous. "He took one look and said, in pretty colorful language, 'What are those birds doing on the ground? They hate to be on the ground! Give them something to climb on!' " At first it seemed unnatural—ground birds don't like the ground? But as he thought about it Ken realized that all the species he'd watched in the wild preferred to rest on ledges, low branches, or other elevated perches where they were safe from predators. They really only used the ground for feeding and traveling. So he brought in some hay bales for the Chukars to perch on and then left his son in charge of feeding and data collection while he went away on a short work trip.

Barely a teenager at the time, young Terry Dial was visibly upset when his father got back. "I asked him how it went," Ken recalled, "and he said, 'Terrible! The birds are cheating!' " Instead of flying up to their perches, the baby Chukars were using their legs. Time and again Terry had watched them run right up the side of a hay bale, flapping all the while. Ken dashed out to see for himself, and that was the "aha" moment. "The birds were using their wings and legs cooperatively," he told me, and that single observation opened up a world of possibilities.

Working together with Terry (who has since gone on to study animal locomotion), Ken came up with a series of ingenious experiments, filming the birds as they raced up textured ramps tilted at increasing angles. As the incline increased, the partridges began to flap, but they angled their wings differently from birds in flight. They aimed their flapping down and backward, using the force not for lift but to keep their feet firmly pressed against the ramp. "It's like the spoiler on the back of a race car," he explained, which is a very apt analogy. In Formula One racing, spoilers are the big aerodynamic fins that push the cars downward as they speed along, increasing traction and handling. The birds were doing the very same thing with their wings to help them scramble up otherwise impossible slopes.

Ken called the technique WAIR, for wing-assisted incline running, and went on to document it in a wide range of species. It not only allowed young birds to climb vertical surfaces within the first few weeks of life but also gave adults an energy-efficient alternative to flying. In the Chukar experiments, adults regularly used WAIR to ascend ramps steeper than 90 degrees, essentially running up the wall and onto the ceiling.

In an evolutionary context, WAIR takes on surprising explanatory powers. With one fell swoop, the Dials came up with a viable origin for the flapping flight stroke of birds (something gliding animals don't do and thus a shortcoming of the tree-down theory) and an aerodynamic function for half-formed wings (one of the main drawbacks to the ground-up hypothesis).

21

Which choice best reflects the overall sequence of events in the passage?

A) An experiment is proposed but proves unworkable; a less ambitious experiment is attempted, and it yields data that give rise to a new set of questions.

B) A new discovery leads to reconsideration of a theory; a classic study is adapted, and the results are summarized.

C) An anomaly is observed and simulated experimentally; the results are compared with previous findings, and a novel hypothesis is proposed.

D) An unexpected finding arises during the early phase of a study; the study is modified in response to this finding, and the results are interpreted and evaluated.

22

As used in line 7, "challenged" most nearly means

A) dared.

B) required.

C) disputed with.

D) competed with.

23

Which statement best captures Ken Dial's central assumption in setting up his research?

A) The acquisition of flight in young birds sheds light on the acquisition of flight in their evolutionary ancestors.

B) The tendency of certain young birds to jump erratically is a somewhat recent evolved behavior.

C) Young birds in a controlled research setting are less likely than birds in the wild to require perches when at rest.

D) Ground-dwelling and tree-climbing predecessors to birds evolved in parallel.

24

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

A) Lines 1-4 ("At field . . . parents")

B) Lines 6-11 ("So when . . . fly")

C) Lines 16-19 ("When . . . measured")

D) Lines 23-24 ("At first . . . the ground")

25

In the second paragraph (lines 12-32), the incident involving the local rancher mainly serves to

A) reveal Ken Dial's motivation for undertaking his project.

B) underscore certain differences between laboratory and field research.

C) show how an unanticipated piece of information influenced Ken Dial's research.

D) introduce a key contributor to the tree-down theory.

26

After Ken Dial had his "'aha' moment" (line 41), he

A) tried to train the birds to fly to their perches.

B) studied videos to determine why the birds no longer hopped.

C) observed how the birds dealt with gradually steeper inclines.

D) consulted with other researchers who had studied Chukar Partridges.

27

The passage identifies which of the following as a factor that facilitated the baby Chukars' traction on steep ramps?

A) The speed with which they climbed

B) The position of their flapping wings

C) The alternation of wing and foot movement

D) Their continual hopping motions

28

As used in line 61, "document" most nearly means

A) portray.

B) record.

C) publish.

D) process.

29

What can reasonably be inferred about gliding animals from the passage?

A) Their young tend to hop along beside their parents instead of flying beside them.

B) Their method of locomotion is similar to that of ground birds.

C) They use the ground for feeding more often than for perching.

D) They do not use a flapping stroke to aid in climbing slopes.

30

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

A) Lines 4-6 ("They jumped . . . air")

B) Lines 28-29 ("They really . . . traveling")

C) Lines 57-59 ("The birds . . . slopes")

D) Lines 72-74 ("something . . . theory")

Questions 31-41 are based on the following passages.

Passage 1 is adapted from Talleyrand et al., *Report on Public Instruction*. Originally published in 1791. Passage 2 is adapted from Mary Wollstonecraft, *A Vindication of the Rights of Woman*. Originally published in 1792. Talleyrand was a French diplomat; the *Report* was a plan for national education. Wollstonecraft, a British novelist and political writer, wrote *Vindication* in response to Talleyrand.

Passage 1

That half the human race is excluded by the other half from any participation in government; that they are native by birth but foreign by law in the very land where they were born; and that they are property-owners yet have no direct influence or representation: are all political phenomena apparently impossible to explain on abstract principle. But on another level of ideas, the question changes and may be easily resolved. The purpose of all these institutions must be the happiness of the greatest number. Everything that leads us farther from this purpose is in error; everything that brings us closer is truth. If the exclusion from public employments decreed against women leads to a greater sum of mutual happiness for the two sexes, then this becomes a law that all Societies have been compelled to acknowledge and sanction.

Any other ambition would be a reversal of our primary destinies; and it will never be in women's interest to change the assignment they have received.

It seems to us incontestable that our common happiness, above all that of women, requires that they never aspire to the exercise of political rights and functions. Here we must seek their interests in the wishes of nature. Is it not apparent, that their delicate constitutions, their peaceful inclinations, and the many duties of motherhood, set them apart from strenuous habits and onerous duties, and summon them to gentle occupations and the cares of the home? And is it not evident that the great conserving principle of Societies, which makes the division of powers a source of harmony, has been expressed and revealed by nature itself, when it divided the functions of the two sexes in so obviously distinct a manner? This is sufficient; we need not invoke principles that are inapplicable to the question. Let us not make rivals of life's companions. You must, you truly must allow the persistence of a union that no interest, no rivalry, can possibly undo. Understand that the good of all demands this of you.

Passage 2

Contending for the rights of woman, my main argument is built on this simple principle, that if she be not prepared by education to become the companion of man, she will stop the progress of knowledge and virtue; for truth must be common to all, or it will be inefficacious with respect to its influence on general practice. And how can woman be expected to co-operate unless she know why she ought to be virtuous? unless freedom strengthen her reason till she comprehend her duty, and see in what manner it is connected with her real good? If children are to be educated to understand the true principle of patriotism, their mother must be a patriot; and the love of mankind, from which an orderly train of virtues spring, can only be produced by considering the moral and civil interest of mankind; but the education and situation of woman, at present, shuts her out from such investigations. . . .

Consider, sir, dispassionately, these observations—for a glimpse of this truth seemed to open before you when you observed, "that to see one half of the human race excluded by the other from all participation of government, was a political phenomenon that, according to abstract principles, it was impossible to explain." If so, on what does your constitution rest? If the abstract rights of man will bear discussion and explanation, those of woman, by a parity of reasoning, will not shrink from the same test: though a different opinion prevails in this country, built on the very arguments which you use to justify the oppression of woman—prescription.

Consider—I address you as a legislator—whether, when men contend for their freedom, and to be allowed to judge for themselves respecting their own happiness, it be not inconsistent and unjust to subjugate women, even though you firmly believe that you are acting in the manner best calculated to promote their happiness? Who made man the exclusive judge, if woman partake with him the gift of reason?

In this style, argue tyrants of every denomination, from the weak king to the weak father of a family; they are all eager to crush reason; yet always assert that they usurp its throne only to be useful. Do you not act a similar part, when you force all women, by denying them civil and political rights, to remain immured in their families groping in the dark?

31

As used in line 21, "common" most nearly means

A) average.

B) shared.

C) coarse.

D) similar.

32

It can be inferred that the authors of Passage 1 believe that running a household and raising children

A) are rewarding for men as well as for women.

B) yield less value for society than do the roles performed by men.

C) entail very few activities that are difficult or unpleasant.

D) require skills similar to those needed to run a country or a business.

33

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

A) Lines 4-6 ("they are . . . representation")

B) Lines 13-17 ("If the . . . sanction")

C) Lines 25-30 ("Is it . . . home")

D) Lines 30-35 ("And . . . manner")

34

According to the author of Passage 2, in order for society to progress, women must

A) enjoy personal happiness and financial security.

B) follow all currently prescribed social rules.

C) replace men as figures of power and authority.

D) receive an education comparable to that of men.

35

As used in line 50, "reason" most nearly means

A) motive.

B) sanity.

C) intellect.

D) explanation.

36

In Passage 2, the author claims that freedoms granted by society's leaders have

A) privileged one gender over the other.

B) resulted in a general reduction in individual virtue.

C) caused arguments about the nature of happiness.

D) ensured equality for all people.

37

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

A) Lines 41-45 ("Contending . . . virtue")

B) Lines 45-47 ("truth . . . practice")

C) Lines 65-66 ("If so . . . rest")

D) Lines 72-75 ("Consider . . . happiness")

38

In lines 61-65, the author of Passage 2 refers to a statement made in Passage 1 in order to

A) call into question the qualifications of the authors of Passage 1 regarding gender issues.

B) dispute the assertion made about women in the first sentence of Passage 1.

C) develop her argument by highlighting what she sees as flawed reasoning in Passage 1.

D) validate the concluding declarations made by the authors of Passage 1 about gender roles.

39

Which best describes the overall relationship between Passage 1 and Passage 2?

A) Passage 2 strongly challenges the point of view in Passage 1.

B) Passage 2 draws alternative conclusions from the evidence presented in Passage 1.

C) Passage 2 elaborates on the proposal presented in Passage 1.

D) Passage 2 restates in different terms the argument presented in Passage 1.

40

The authors of both passages would most likely agree with which of the following statements about women in the eighteenth century?

A) Their natural preferences were the same as those of men.

B) They needed a good education to be successful in society.

C) They were just as happy in life as men were.

D) They generally enjoyed fewer rights than men did.

41

How would the authors of Passage 1 most likely respond to the points made in the final paragraph of Passage 2?

A) Women are not naturally suited for the exercise of civil and political rights.

B) Men and women possess similar degrees of reasoning ability.

C) Women do not need to remain confined to their traditional family duties.

D) The principles of natural law should not be invoked when considering gender roles.

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

This passage is adapted from Richard J. Sharpe and Lisa Heyden, "Honey Bee Colony Collapse Disorder is Possibly Caused by a Dietary Pyrethrum Deficiency." ©2009 by Elsevier Ltd. Colony collapse disorder is characterized by the disappearance of adult worker bees from hives.

Honey bees are hosts to the pathogenic large ectoparasitic mite *Varroa destructor* (Varroa mites). These mites feed on bee hemolymph (blood) and can kill bees directly or by increasing their susceptibility to secondary infection with fungi, bacteria or viruses. Little is known about the natural defenses that keep the mite infections under control.

Pyrethrums are a group of flowering plants which include *Chrysanthemum coccineum*, *Chrysanthemum cinerariifolium*, *Chrysanthemum marschalli*, and related species. These plants produce potent insecticides with anti-mite activity. The naturally occurring insecticides are known as pyrethrums. A synonym for the naturally occurring pyrethrums is pyrethrin and synthetic analogues of pyrethrums are known as pyrethroids. In fact, the human mite infestation known as scabies (*Sarcoptes scabiei*) is treated with a topical pyrethrum cream.

We suspect that the bees of commercial bee colonies which are fed mono-crops are nutritionally deficient. In particular, we postulate that the problem is a diet deficient in anti-mite toxins: pyrethrums, and possibly other nutrients which are inherent in such plants. Without, at least, intermittent feeding on the pyrethrum producing plants, bee colonies are susceptible to mite infestations which can become fatal either directly or due to a secondary infection of immunocompromised or nutritionally deficient bees. This secondary infection can be viral, bacterial or fungal and may be due to one or more pathogens. In addition, immunocompromised or nutritionally deficient bees may be further weakened when commercially produced insecticides are introduced into their hives by bee keepers in an effort to fight mite infestation. We further postulate that the proper dosage necessary to prevent mite infestation may be better left to the bees, who may seek out or avoid pyrethrum containing plants depending on the amount necessary to defend against mites and the amount already consumed by the bees, which in higher doses could be potentially toxic to them.

This hypothesis can best be tested by a trial wherein a small number of commercial honey bee colonies are offered a number of pyrethrum producing plants, as well as a typical bee food source such as clover, while controls are offered only the clover. Mites could then be introduced to each hive with note made as to the choice of the bees, and the effects of the mite parasites on the experimental colonies versus control colonies.

It might be beneficial to test wild-type honey bee colonies in this manner as well, in case there could be some genetic difference between them that affects the bees' preferences for pyrethrum producing flowers.

Pathogen Occurence in Honey Bee Colonies With and Without Colony Collapse Disorder

	Percent of colonies affected by pathogen	
Pathogen	Colonies with colony collapse disorder (%)	Colonies without colony collapse disorder (%)
Viruses		
IAPV	83	5
KBV	100	76
Fungi		
Nosema apis	90	48
Nosema ceranae	100	81
All four pathogens	77	0

Adapted from Diana L. Cox-Foster et al., "A Metagenomic Survey of Microbes in Honey Bee Colony Collapse Disorder." ©2007 by American Association for the Advancement of Science.

The table above shows, for colonies with colony collapse disorder and for colonies without colony collapse disorder, the percent of colonies having honey bees infected by each of four pathogens and by all four pathogens together.

42

How do the words "can," "may," and "could" in the third paragraph (lines 19-41) help establish the tone of the paragraph?

A) They create an optimistic tone that makes clear the authors are hopeful about the effects of their research on colony collapse disorder.

B) They create a dubious tone that makes clear the authors do not have confidence in the usefulness of the research described.

C) They create a tentative tone that makes clear the authors suspect but do not know that their hypothesis is correct.

D) They create a critical tone that makes clear the authors are skeptical of claims that pyrethrums are inherent in mono-crops.

43

In line 42, the authors state that a certain hypothesis "can best be tested by a trial." Based on the passage, which of the following is a hypothesis the authors suggest be tested in a trial?

A) Honeybees that are exposed to both pyrethrums and mites are likely to develop a secondary infection by a virus, a bacterium, or a fungus.

B) Beekeepers who feed their honeybee colonies a diet of a single crop need to increase the use of insecticides to prevent mite infestations.

C) A honeybee diet that includes pyrethrums results in honeybee colonies that are more resistant to mite infestations.

D) Humans are more susceptible to varroa mites as a result of consuming nutritionally deficient food crops.

44

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

A) Lines 3-5 ("These mites . . . viruses")

B) Lines 16-18 ("In fact . . . cream")

C) Lines 19-21 ("We suspect . . . deficient")

D) Lines 24-28 ("Without . . . bees")

45

The passage most strongly suggests that beekeepers' attempts to fight mite infestations with commercially produced insecticides have what unintentional effect?

A) They increase certain mite populations.

B) They kill some beneficial forms of bacteria.

C) They destroy bees' primary food source.

D) They further harm the health of some bees.

46

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

A) Lines 1-2 ("Honey bees . . . mites")

B) Lines 6-7 ("Little . . . control")

C) Lines 31-35 ("In addition . . . infestation")

D) Lines 47-50 ("Mites . . . control colonies")

47

As used in line 35, "postulate" most nearly means to

A) make an unfounded assumption.

B) put forth an idea or claim.

C) question a belief or theory.

D) conclude based on firm evidence.

48

The main purpose of the fourth paragraph (lines 42-50) is to

A) summarize the results of an experiment that confirmed the authors' hypothesis about the role of clover in the diets of wild-type honeybees.

B) propose an experiment to investigate how different diets affect commercial honeybee colonies' susceptibility to mite infestations.

C) provide a comparative nutritional analysis of the honey produced by the experimental colonies and by the control colonies.

D) predict the most likely outcome of an unfinished experiment summarized in the third paragraph (lines 19-41).

49

An unstated assumption made by the authors about clover is that the plants

A) do not produce pyrethrums.

B) are members of the *Chrysanthemum* genus.

C) are usually located near wild-type honeybee colonies.

D) will not be a good food source for honeybees in the control colonies.

50

Based on data in the table, in what percent of colonies with colony collapse disorder were the honeybees infected by all four pathogens?

A) 0 percent

B) 77 percent

C) 83 percent

D) 100 percent

51

Based on data in the table, which of the four pathogens infected the highest percentage of honeybee colonies without colony collapse disorder?

A) IAPV

B) KBV

C) *Nosema apis*

D) *Nosema ceranae*

52

Do the data in the table provide support for the authors' claim that infection with varroa mites increases a honeybee's susceptibility to secondary infections?

A) Yes, because the data provide evidence that infection with a pathogen caused the colonies to undergo colony collapse disorder.

B) Yes, because for each pathogen, the percent of colonies infected is greater for colonies with colony collapse disorder than for colonies without colony collapse disorder.

C) No, because the data do not provide evidence about bacteria as a cause of colony collapse disorder.

D) No, because the data do not indicate whether the honeybees had been infected with mites.

ANS

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.

Shed Some Light on the Workplace

Studies have shown that employees are happier, 1 healthier, and more productive when they work in an environment 2 in which temperatures are carefully controlled. New buildings may be designed with these studies in mind, but many older buildings were not, resulting in spaces that often depend primarily on artificial lighting. While employers may balk at the expense of reconfiguring such buildings to increase the amount of natural light, the investment has been shown to be well worth it in the long run—for both employees and employers.

1

A) NO CHANGE
B) healthy, and more
C) healthier, and they are
D) healthier, being more

2

Which choice provides the most appropriate introduction to the passage?

A) NO CHANGE
B) that affords them adequate amounts of natural light.
C) that is thoroughly sealed to prevent energy loss.
D) in which they feel comfortable asking managers for special accommodations.

For one thing, lack of exposure to natural light has a significant impact on employees' health. A study conducted in 2013 by Northwestern University in Chicago showed that inadequate natural light could result in eye strain, headaches, and fatigue, as well as interference with the body's circadian rhythms. 3 Circadian rhythms, which are controlled by the 4 bodies biological clocks, influence body temperature, hormone release, cycles of sleep and wakefulness, and other bodily functions. Disruptions of circadian rhythms have been linked to sleep disorders, diabetes, depression, and bipolar disorder. Like any other health problems, these ailments can increase employee absenteeism,

which, in turn, 5 is costly for employers. Employees who feel less than 100 percent and are sleep deprived are also less prone to work at their maximal productivity. One company in California 6 gained a huge boost in its employees' morale when it moved from an artificially lit distribution facility to one with natural illumination.

3

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

> Workers in offices with windows sleep an average of 46 minutes more per night than workers in offices without windows.

Should the writer make this addition here?

A) Yes, because it supplies quantitative data that will be examined in the rest of the paragraph.

B) Yes, because it explains the nature of the bodily functions referred to in the next sentence.

C) No, because it interrupts the discussion of circadian rhythms.

D) No, because it does not take into account whether workers were exposed to sunlight outside the office.

4

A) NO CHANGE

B) bodies' biological clocks',

C) body's biological clocks,

D) body's biological clock's,

5

A) NO CHANGE

B) are

C) is being

D) have been

6

Which choice best supports the statement made in the previous sentence?

A) NO CHANGE

B) saw a 5 percent increase in productivity

C) saved a great deal on its operational costs

D) invested large amounts of time and capital

7 Artificial light sources are also costly aside from lowering worker productivity. They typically constitute anywhere from 25 to 50 percent of a building's energy use. When a plant in Seattle, Washington, was redesigned for more natural light, the company was able to enjoy annual electricity cost reductions of $500,000 8 each year.

7

In context, which choice best combines the underlined sentences?

A) Aside from lowering worker productivity, artificial light sources are also costly, typically constituting anywhere from 25 to 50 percent of a building's energy use.

B) The cost of artificial light sources, aside from lowering worker productivity, typically constitutes anywhere from 25 to 50 percent of a building's energy use.

C) Typically constituting 25 to 50 percent of a building's energy use, artificial light sources lower worker productivity and are costly.

D) Artificial lights, which lower worker productivity and are costly, typically constitute anywhere from 25 to 50 percent of a building's energy use.

8

A) NO CHANGE

B) every year.

C) per year.

D) DELETE the underlined portion and end the sentence with a period.

ANS

Among the possibilities to reconfigure a building's lighting is the installation of full-pane windows to allow the greatest degree of sunlight to reach office interiors. **9** Thus, businesses can install light tubes, **10** these are pipes placed in workplace roofs to capture and funnel sunlight down into a building's interior. Glass walls and dividers can also be used to replace solid walls as a means **11** through distributing natural light more freely. Considering the enormous costs of artificial lighting, both in terms of money and productivity, investment in such improvements should be a natural choice for businesses.

9

A) NO CHANGE
B) Nevertheless,
C) Alternatively,
D) Finally,

10

A) NO CHANGE
B) they are
C) which are
D) those being

11

A) NO CHANGE
B) of
C) from
D) DELETE the underlined portion.

ANS

Questions 12-22 are based on the following passage.

Transforming the American West Through Food and Hospitality

Just as travelers taking road trips today may need to take a break for food at a rest area along the highway, settlers traversing the American West by train in the mid-1800s often found **12** themselves in need of refreshment. However, food available on rail lines was generally of terrible quality. **13** Despite having worked for railroad companies, Fred Harvey, an English-born **14** entrepreneur. He decided to open his own restaurant business to serve rail customers. Beginning in the 1870s, he opened dozens of restaurants in rail stations and dining cars. These Harvey Houses, which constituted the first restaurant chain in the United States, **15** was unique for its high standards of service and quality. The menu was modeled after those of fine restaurants, so the food was leagues beyond the **16** sinister fare travelers were accustomed to receiving in transit.

12

A) NO CHANGE
B) himself or herself
C) their selves
D) oneself

13

Which choice provides the most logical introduction to the sentence?

A) NO CHANGE
B) He had lived in New York and New Orleans, so
C) To capitalize on the demand for good food,
D) DELETE the underlined portion.

14

A) NO CHANGE
B) entrepreneur:
C) entrepreneur; he
D) entrepreneur,

15

A) NO CHANGE
B) were unique for their
C) was unique for their
D) were unique for its

16

Which choice best maintains the tone established in the passage?

A) NO CHANGE
B) surly
C) abysmal
D) icky

His restaurants were immediately successful, but Harvey was not content to follow conventional business practices. **17** Although women did not traditionally work in restaurants in the nineteenth century, Harvey decided to try employing women as waitstaff. In 1883, he placed an advertisement seeking educated, well-mannered, articulate young women between the ages of 18 and 30. **18** Response to the advertisement was overwhelming, even tremendous, and Harvey soon replaced the male servers at his restaurants with women. Those who were hired as "Harvey Girls" joined an elite group of workers, who were expected to complete a 30-day training program and follow a strict code of rules for conduct and curfews. In the workplace, the women donned identical black-and-white uniforms and carried out their duties with precision. Not only were such regulations meant to ensure the efficiency of the business and the safety of the workers, **19** but also helped to raise people's generally low opinion of the restaurant industry.

17

The writer is considering deleting the previous sentence. Should the writer make this change?

A) Yes, because it introduces information that is irrelevant at this point in the passage.

B) Yes, because it does not logically follow from the previous paragraph.

C) No, because it provides a logical introduction to the paragraph.

D) No, because it provides a specific example in support of arguments made elsewhere in the passage.

18

A) NO CHANGE

B) Response to the advertisement was overwhelming,

C) Overwhelming, even tremendous, was the response to the advertisement,

D) There was an overwhelming, even tremendous, response to the advertisement,

19

A) NO CHANGE

B) but also helping

C) also helping

D) but they also helped

In return for the servers' work, the position paid quite well for the time: $17.50 a month, plus tips, meals, room and board, laundry service, and travel expenses. 20

For as long as Harvey Houses served rail travelers through the mid-twentieth century, working there was a steady and lucrative position for women. Living independently and demonstrating an intense work 21 ethic; the Harvey Girls became known as a transformative force in the American 22 West. Advancing the roles of women in the restaurant industry and the American workforce as a whole, the Harvey Girls raised the standards for restaurants and blazed a trail in the fast-changing landscape of the western territories.

20

Which choice most logically follows the previous sentence?

A) The growth of Harvey's business coincided with the expansion of the Santa Fe Railway, which served large sections of the American West.

B) Harvey would end up opening dozens of restaurants and dining cars, plus 15 hotels, over his lucrative career.

C) These benefits enabled the Harvey Girls to save money and build new and exciting lives for themselves in the so-called Wild West.

D) The compensation was considered excellent at the time, though it may not seem like much money by today's standards.

21

A) NO CHANGE

B) ethic:

C) ethic, and

D) ethic,

22

The writer is considering revising the underlined portion of the sentence to read:

West, inspiring books, documentaries, and even a musical.

Should the writer add this information here?

A) Yes, because it provides examples of the Harvey Girls' influence.

B) Yes, because it serves as a transitional point in the paragraph.

C) No, because it should be placed earlier in the passage.

D) No, because it contradicts the main claim of the passage.

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

How Do You Like Those Apples?

Marketed as SmartFresh, the chemical 1-MCP (1-methylcyclopropene) has been used by fruit growers since 2002 in the United States and elsewhere to preserve the crispness and lengthen the storage life of apples and other fruit, which often must travel long distances before being eaten by consumers. 23 1-MCP lengthens storage life by three to four times when applied to apples. This extended life allows producers to sell their apples in the off-season, months after the apples have been harvested. And at a cost of about one cent per pound of apples, 1-MCP is a highly cost-effective treatment. However, 1-MCP is not a panacea for fruit producers or sellers: there are problems and limitations associated with its use.

23

Which choice most effectively combines the underlined sentences?

A) When applied to apples, 1-MCP lengthens storage life by three to four times, allowing producers to sell their apples in the off-season, months after the apples have been harvested.

B) Producers are allowed to sell their apples months after they have been harvested—in the off-season—because 1-MCP, when applied to apples, lengthens their storage life by three to four times.

C) 1-MCP lengthens storage life, when applied to apples, by three to four times, allowing producers to sell their apples months after the apples have been harvested in the off-season.

D) Months after apples have been harvested, producers are allowed to sell their apples, in the off-season, because 1-MCP lengthens storage life when applied to apples by three to four times.

[1] 1-MCP works by limiting a fruit's production of ethylene, **24** it is a chemical that causes fruit to ripen and eventually rot. [2] While 1-MCP keeps apples **25** tight and crisp for months, it also limits **26** their scent production. [3] This may not be much of a problem with certain kinds of apples that are not naturally very fragrant, such as Granny Smith, but for apples that are prized for their fruity fragrance, such as McIntosh, this can be a problem with consumers, **27** that will reject apples lacking the expected aroma. [4] But some fruits do not respond as well to 1-MCP as others **28** did, and some even respond adversely. [5] Furthermore, some fruits, particularly those that naturally produce a large

24

A) NO CHANGE
B) being
C) that is
D) DELETE the underlined portion.

25

A) NO CHANGE
B) firm
C) stiff
D) taut

26

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

27

A) NO CHANGE
B) they
C) which
D) who

28

A) NO CHANGE
B) do,
C) have,
D) will,

ANS

amount of ethylene, do not respond as well to 1-MCP treatment. [6] Take Bartlett 29 pears, for instance, unless they are treated with exactly the right amount of 1-MCP at exactly the right time, they will remain hard and green until they rot, and consumers who experience this will be unlikely to purchase them again. 30

29

A) NO CHANGE
B) pears, for instance:
C) pears for instance,
D) pears. For instance,

30

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

A) where it is now.
B) after sentence 1.
C) after sentence 2.
D) after sentence 5.

ANIS

Finally, researchers have found that 1-MCP actually increases susceptibility to some pathologies in certain apple varieties. For example, Empire apples are prone to a condition that causes the flesh of the apple to turn brown. Traditionally, apple producers have dealt with this problem by leaving the apples in the open air for three weeks before storing them in a controlled atmosphere with tightly regulated temperature, humidity, and carbon dioxide levels. As the graph shows, the flesh of untreated Empire apples that are first stored in the open air undergoes **31** roughly five percent less browning than the flesh of untreated Empire apples that are immediately put into storage in a controlled environment. However, when Empire apples are treated with 1-MCP, **32** their flesh turns brown when the apples are first stored in the open air, though not under other conditions. Although

31

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

A) NO CHANGE

B) slightly more browning than

C) twice as much browning as

D) substantially less browning than

32

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

A) NO CHANGE

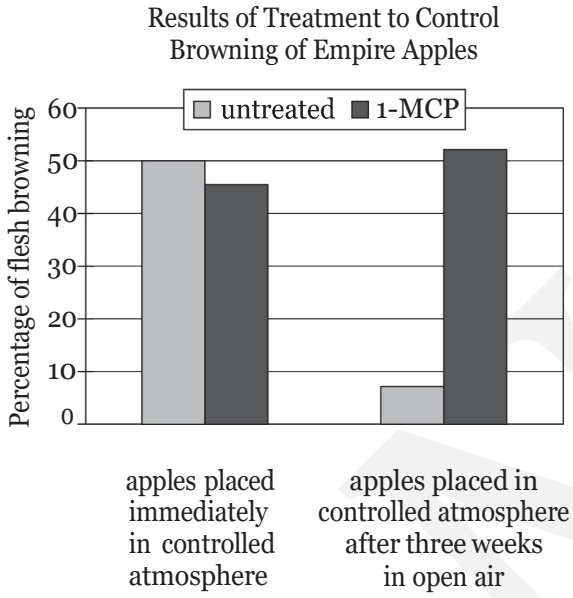
B) roughly half of their flesh turns brown, regardless of whether the apples are first stored in the open air.

C) their flesh browns when they are put directly into a controlled atmosphere but not when they are first stored in the open air.

D) their flesh turns brown when they are first stored in the open air, though not as quickly as the apple flesh in an untreated group does.

ANS

researchers continue to search for the right combination of factors that will keep fruits fresh and attractive, **33** the problem may be that consumers are overly concerned with superficial qualities rather than the actual freshness of the fruit.



Adapted from Hannah J. James, Jacqueline F. Nock, and Chris B. Watkins, "The Failure of Postharvest Treatments to Control Firm Flesh Browning in Empire Apples." ©2010 by The New York State Horticultural Society.

33

The writer wants a conclusion that conveys how the shortcomings of 1-MCP presented in the passage affect the actions of people in the fruit industry. Which choice best accomplishes this goal?

A) NO CHANGE

B) many of the improvements to fruit quality they have discovered so far have required trade-offs in other properties of the fruit.

C) for now many fruit sellers must weigh the relative values of aroma, color, and freshness when deciding whether to use 1-MCP.

D) it must be acknowledged that 1-MCP, despite some inadequacies, has enabled the fruit industry to ship and store fruit in ways that were impossible before.

Questions 34-44 are based on the following passage.

More than One Way to Dress a Cat

From Michelangelo's *David* to Vincent van Gogh's series of self-portraits to Grant Wood's iconic image of a farming couple in *American* 34 *Gothic*. These works by human artists have favored representations of members of their own species to those of other species. Indeed, when we think about animals depicted in well-known works of art, the image of dogs playing poker—popularized in a series of paintings by American artist C. M. 35 Coolidge, may be the first and only one that comes to mind. Yet some of the earliest known works of art, including paintings and drawings tens of thousands of years old found on cave walls in Spain and France, 36 portrays animals. Nor has artistic homage to our fellow creatures entirely died out in the millennia since, 37 despite the many years that have passed between then and now.

34

A) NO CHANGE
B) *Gothic*. Works
C) *Gothic*; these works
D) *Gothic*, works

35

A) NO CHANGE
B) Coolidge—
C) Coolidge;
D) Coolidge

36

A) NO CHANGE
B) portraying
C) portray
D) has portrayed

37

The writer wants to link the first paragraph with the ideas that follow. Which choice best accomplishes this goal?

A) NO CHANGE
B) with special attention being paid to domestic animals such as cats.
C) even though most paintings in museums are of people, not animals.
D) as the example of one museum in Russia shows.

[1] The State Hermitage Museum in St. Petersburg, one of Russia's greatest art museums, has long had a productive partnership with a much loved animal: the cat. [2] For centuries, cats have guarded this famous museum, ridding it of mice, rats, and other rodents that could damage the art, not to mention 38 scared off visitors. [3] Peter the Great introduced the first cat to the Hermitage in the early eighteenth century. [4] Later Catherine the Great declared the cats to be official guardians of the galleries. [5] Continuing the tradition, Peter's daughter Elizaveta introduced the best and strongest cats in Russia to the Hermitage. [6] Today, the museum holds a yearly festival honoring these faithful workers. 39

38

A) NO CHANGE
B) scaring
C) scare
D) have scared

39

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

A) where it is now.
B) after sentence 1.
C) after sentence 3.
D) after sentence 6.

ANS

These cats are so cherished by the museum that officials recently **40** decreed original paintings to be made of six of them. In each, a cat is depicted upright in a humanlike pose and clothed in imperial-era Russian attire. The person chosen for this **41** task, digital artist, Eldar Zakirov painted the cats in the style traditionally used by portrait artists, in so doing **42** presenting the cats as noble individuals worthy of respect. One portrait, *The Hermitage Court Chamber Herald Cat*, includes an

40

A) NO CHANGE
B) commissioned
C) forced
D) licensed

41

A) NO CHANGE
B) task, digital artist, Eldar Zakirov,
C) task digital artist Eldar Zakirov,
D) task, digital artist Eldar Zakirov,

42

Which choice most effectively sets up the examples that follow?

A) NO CHANGE
B) managing to capture unique characteristics of each cat.
C) commenting on the absurdity of dressing up cats in royal robes.
D) indicating that the cats were very talented mouse catchers.

ANS

aristocratic tilt of feline ears as well as a stately sweep of tail emerging from the stiff scarlet and gold of royal court dress. The wise, thoughtful green eyes of the subject of *The Hermitage Court Outrunner Cat* mimic those of a trusted royal advisor. **43** Some may find it peculiar to observe cats portrayed in formal court poses, but these felines, by **44** mastering the art of killing mice and rats, are benefactors of the museum as important as any human.

43

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

> The museum occupies six historic buildings, including the Winter Palace, a former residence of Russian emperors.

Should the writer make this addition here?

A) Yes, because it shows the link between Peter the Great and the cat paintings.

B) Yes, because it helps explain why Russian art celebrates animals.

C) No, because it fails to indicate why the Winter Palace became an art museum.

D) No, because it provides background information that is irrelevant to the paragraph.

44

A) NO CHANGE

B) acting as the lead predator in the museum's ecosystem,

C) hunting down and killing all the mice and rats one by one,

D) protecting the museum's priceless artworks from destructive rodents,

SAT® Practice Test 4

ANIS

Test begins on the next page.

ANIS

Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

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

Questions 1-10 are based on the following passage.

This passage is adapted from MacDonald Harris, *The Balloonist*. ©2011 by The Estate of Donald Heiney. During the summer of 1897, the narrator of this story, a fictional Swedish scientist, has set out for the North Pole in a hydrogen-powered balloon.

My emotions are complicated and not readily verifiable. I feel a vast yearning that is simultaneously a pleasure and a pain. I am certain of the consummation of this yearning, but I don't know yet what form it will take, since I do not understand quite what it is that the yearning desires. For the first time there is borne in upon me the full truth of what I myself said to the doctor only an hour ago: that my motives in this undertaking are not entirely clear. For years, for a lifetime, the machinery of my destiny has worked in secret to prepare for this moment; its clockwork has moved exactly toward this time and place and no other. Rising slowly from the earth that bore me and gave me sustenance, I am carried helplessly toward an uninhabited and hostile, or at best indifferent, part of the earth, littered with the bones of explorers and the wrecks of ships, frozen supply caches, messages scrawled with chilled fingers and hidden in cairns that no eye will ever see. Nobody has succeeded in this thing, and many have died. Yet in freely willing this enterprise, in choosing this moment and no other when the south wind will carry me exactly northward at a velocity of eight knots, I have converted the machinery of my fate into the servant of my will. All this I understand, as I understand each detail of the technique by which this is carried out. What I don't understand is why I am so intent on going to this particular place. Who wants the North Pole! What good is it! Can you eat it? Will it carry you from Gothenburg to Malmö like a railway? The Danish ministers have declared from their pulpits that participation in polar expeditions is beneficial to the soul's eternal well-being, or so I read in a newspaper. It isn't clear how this doctrine is to be interpreted, except that the Pole is something difficult or impossible to attain which must nevertheless be sought for, because man is condemned to seek out and know everything whether or not the knowledge gives him pleasure. In short, it is the same unthinking lust for knowledge that drove our First Parents out of the garden.

And suppose you were to find it in spite of all, this wonderful place that everybody is so anxious to stand on! *What* would you find? Exactly nothing. A point precisely identical to all the others in a completely featureless wasteland stretching around it for hundreds of miles. It is an abstraction, a mathematical fiction. No one but a Swedish madman could take the slightest interest in it. Here I am. The wind is still from the south, bearing us steadily northward at the speed of a trotting dog. Behind us, perhaps forever, lie the Cities of Men with their

teacups and their brass bedsteads. I am going forth of my own volition to join the ghosts of Bering and poor Franklin, of frozen De Long and his men. What I am on the brink of knowing, I now see, is not an ephemeral mathematical spot but myself. The doctor was right, even though I dislike him. Fundamentally I am a dangerous madman, and what I do is both a challenge to my egotism and a surrender to it.

1

Over the course of the passage, the narrator's attitude shifts from

A) fear about the expedition to excitement about it.

B) doubt about his abilities to confidence in them.

C) uncertainty of his motives to recognition of them.

D) disdain for the North Pole to appreciation of it.

2

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

A) Lines 10-12 ("For . . . moment")

B) Lines 21-25 ("Yet . . . will")

C) Lines 42-44 ("And . . . stand on")

D) Lines 56-57 ("What . . . myself")

3

As used in lines 1-2, "not readily verifiable" most nearly means

A) unable to be authenticated.

B) likely to be contradicted.

C) without empirical support.

D) not completely understood.

4

The sentence in lines 10-13 ("For years . . . other") mainly serves to

A) expose a side of the narrator that he prefers to keep hidden.

B) demonstrate that the narrator thinks in a methodical and scientific manner.

C) show that the narrator feels himself to be influenced by powerful and independent forces.

D) emphasize the length of time during which the narrator has prepared for his expedition.

5

The narrator indicates that many previous explorers seeking the North Pole have

A) perished in the attempt.

B) made surprising discoveries.

C) failed to determine its exact location.

D) had different motivations than his own.

6

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

A) Lines 20-21 ("Nobody . . . died")

B) Lines 25-27 ("All . . . out")

C) Lines 31-34 ("The . . . newspaper")

D) Lines 51-53 ("Behind . . . bedsteads")

7

Which choice best describes the narrator's view of his expedition to the North Pole?

A) Immoral but inevitable

B) Absurd but necessary

C) Socially beneficial but misunderstood

D) Scientifically important but hazardous

8

The question the narrator asks in lines 30-31 ("Will it . . . railway") most nearly implies that

A) balloons will never replace other modes of transportation.

B) the North Pole is farther away than the cities usually reached by train.

C) people often travel from one city to another without considering the implications.

D) reaching the North Pole has no foreseeable benefit to humanity.

9

As used in line 49, "take the slightest interest in" most nearly means

A) accept responsibility for.

B) possess little regard for.

C) pay no attention to.

D) have curiosity about.

10

As used in line 50, "bearing" most nearly means

A) carrying.

B) affecting.

C) yielding.

D) enduring.

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

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

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

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

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

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

Much of our perspective on the process of metropolitan settlement dates, whether we realize it or not, from a paper written in 1925 by the University of Chicago sociologist Ernest W. Burgess.

It was Burgess who defined four urban/suburban zones of settlement: a central business district; an area of manufacturing just beyond it; then a residential area inhabited by the industrial and immigrant working class; and finally an outer enclave of single-family dwellings.

Burgess was right about the urban America of 1925; he was right about the urban America of 1974. Virtually every city in the country had a downtown, where the commercial life of the metropolis was conducted; it had a factory district just beyond; it had districts of working-class residences just beyond that; and it had residential suburbs for the wealthy and the upper middle class at the far end of the continuum. As a family moved up the economic ladder, it also moved outward from crowded working-class districts to more spacious apartments and, eventually, to a suburban home. The suburbs of Burgess's time bore little resemblance to those at the end of the twentieth century, but the theory still essentially worked. People moved ahead in life by moving farther out.

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

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

Chart 1

2010 Population Shares by Metro Size (%)

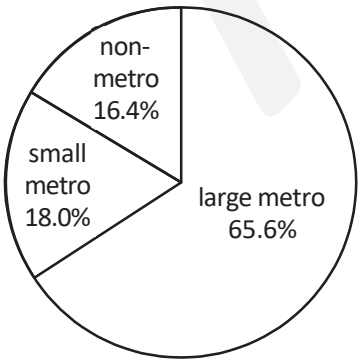
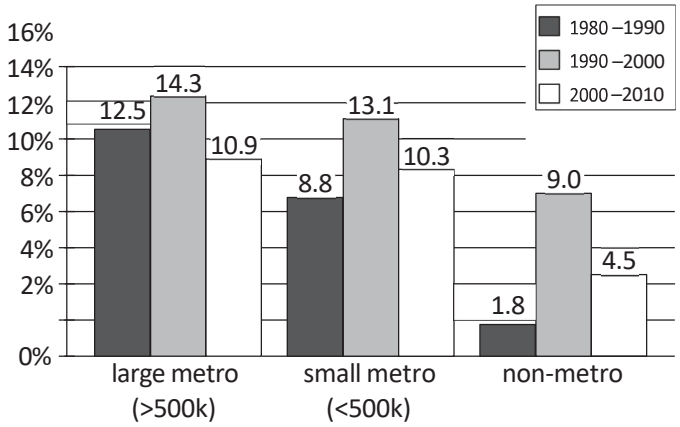


Chart 2

Growth Rates by Metro Size



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

11

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

A) The 2010 census demonstrated a sizeable growth in the number of middle-class families moving into inner cities.

B) The 2010 census is not a reliable instrument for measuring population trends in American cities.

C) Population growth and demographic inversion are distinct phenomena, and demographic inversion is evident in many American cities.

D) Population growth in American cities has been increasing since roughly 2000, while suburban populations have decreased.

12

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

A) The unemployed

B) Immigrants

C) Young professionals

D) African Americans

13

In line 34, "flat" is closest in meaning to

A) static.

B) deflated.

C) featureless.

D) obscure.

14

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

A) Expected tax increases due to demand for public works

B) Economic hardship due to promises made in past years

C) Greater overall prosperity due to an increased inner-city tax base

D) Insufficient revenues due to a decrease in manufacturing

15

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

A) Lines 36-39 ("America's . . . decades")

B) Lines 43-44 ("How . . . not know")

C) Lines 44-46 ("What . . . now")

D) Lines 48-51 ("The truth . . . end")

16

The passage implies that American cities in 1974

A) were witnessing the flight of minority populations to the suburbs.

B) had begun to lose their manufacturing sectors.

C) had a traditional four-zone structure.

D) were already experiencing demographic inversion.

17

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

A) Lines 54-57 ("Much . . . Ernest W. Burgess")

B) Lines 58-59 ("It was . . . settlement")

C) Lines 66-71 ("Virtually . . . continuum")

D) Lines 72-75 ("As . . . home")

18

As used in line 68, "conducted" is closest in meaning to

A) carried out.

B) supervised.

C) regulated.

D) inhibited.

19

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

A) excellent evidence for the arguments made in the passage.

B) possibly accurate but too crude to be truly informative.

C) compelling but lacking in historical information.

D) representative of a perspective with which the author disagrees.

20

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

A) less growth in metropolitan areas of all sizes than had taken place in the 1990s.

B) more growth in small metropolitan areas than in large metropolitan areas.

C) a significant decline in the population of small metropolitan areas compared to the 1980s.

D) roughly equal growth in large metropolitan areas and nonmetropolitan areas.

21

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

A) Large numbers of people moved from suburban areas to urban areas in the 1990s.

B) Growth rates fell in smaller metropolitan areas in the 1990s.

C) Large numbers of people moved from metropolitan areas to nonmetropolitan areas in the 1990s.

D) The US population as a whole grew more in the 1990s than in the 1980s.

Questions 22-31 are based on the following passage.

This passage is adapted from Emily Anthes, *Frankenstein's Cat*. ©2013 by Emily Anthes.

When scientists first learned how to edit the genomes of animals, they began to imagine all the ways they could use this new power. Creating brightly colored novelty pets was not a high priority. Instead, most researchers envisioned far more consequential applications, hoping to create genetically engineered animals that saved human lives. One enterprise is now delivering on this dream. Welcome to the world of "pharming," in which simple genetic tweaks turn animals into living pharmaceutical factories.

Many of the proteins that our cells crank out naturally make for good medicine. Our bodies' own enzymes, hormones, clotting factors, and antibodies are commonly used to treat cancer, diabetes, autoimmune diseases, and more. The trouble is that it's difficult and expensive to make these compounds on an industrial scale, and as a result, patients can face shortages of the medicines they need. Dairy animals, on the other hand, are expert protein producers, their udders swollen with milk. So the creation of the first transgenic animals—first mice, then other species—in the 1980s gave scientists an idea: What if they put the gene for a human antibody or enzyme into a cow, goat, or sheep? If they put the gene in just the right place, under the control of the right molecular switch, maybe they could engineer animals that produced healing human proteins in their milk. Then doctors could collect medicine by the bucketful.

Throughout the 1980s and '90s, studies provided proof of principle, as scientists created transgenic mice, sheep, goats, pigs, cattle, and rabbits that did in fact make therapeutic compounds in their milk. At first, this work was merely gee-whiz, scientific geekery, lab-bound thought experiments come true. That all changed with ATryn, a drug produced by the Massachusetts firm GTC Biotherapeutics. ATryn is antithrombin, an anticoagulant that can be used to prevent life-threatening blood clots. The compound, made by our liver cells, plays a key role in keeping our bodies clot-free. It acts as a molecular bouncer, sidling up to clot-forming compounds and escorting them out of the bloodstream. But as many as 1 in 2,000 Americans are born with a genetic mutation that prevents them from making antithrombin. These patients are prone to clots, especially in their legs and lungs, and they are at elevated risk of suffering from fatal complications during surgery and childbirth. Supplemental antithrombin can reduce this risk, and GTC decided to try to manufacture the compound using genetically engineered goats.

To create its special herd of goats, GTC used microinjection, the same technique that produced GloFish and AquAdvantage salmon. The company's scientists took the gene for human antithrombin and injected it directly into fertilized goat eggs. Then they implanted the eggs in the wombs of female goats. When the kids were born, some of them proved to be transgenic, the human gene nestled safely in their cells. The researchers paired the antithrombin gene with a promoter (which is a sequence of DNA that controls gene activity) that is normally active in the goat's mammary glands during milk production. When the transgenic females lactated, the promoter turned the transgene on and the goats' udders filled with milk containing antithrombin. All that was left to do was to collect the milk, and extract and purify the protein. *Et voilà*—human medicine! And, for GTC, liquid gold. ATryn hit the market in 2006, becoming the world's first transgenic animal drug. Over the course of a year, the "milking parlors" on GTC's 300-acre farm in Massachusetts can collect more than a kilogram of medicine from a single animal.

22

The primary purpose of the passage is to

A) present the background of a medical breakthrough.

B) evaluate the research that led to a scientific discovery.

C) summarize the findings of a long-term research project.

D) explain the development of a branch of scientific study.

23

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

A) apprehension.

B) ambivalence.

C) appreciation.

D) astonishment.

24

As used in line 20, "expert" most nearly means

A) knowledgeable.

B) professional.

C) capable.

D) trained.

25

What does the author suggest about the transgenic studies done in the 1980s and 1990s?

A) They were limited by the expensive nature of animal research.

B) They were not expected to yield products ready for human use.

C) They were completed when an anticoagulant compound was identified.

D) They focused only on the molecular properties of cows, goats, and sheep.

26

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

A) Lines 16-19 ("The trouble . . . need")

B) Lines 25-29 ("If they . . . milk")

C) Lines 35-36 ("At first . . . true")

D) Lines 37-40 ("That all . . . clots")

27

According to the passage, which of the following is true of antithrombin?

A) It reduces compounds that lead to blood clots.

B) It stems from a genetic mutation that is rare in humans.

C) It is a sequence of DNA known as a promoter.

D) It occurs naturally in goats' mammary glands.

28

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

A) Lines 12-16 ("Many . . . more")

B) Lines 42-44 ("It acts . . . bloodstream")

C) Lines 44-46 ("But as . . . antithrombin")

D) Lines 62-65 ("The researchers . . . production")

29

Which of the following does the author suggest about the "female goats" mentioned in line 59?

A) They secreted antithrombin in their milk after giving birth.

B) Some of their kids were not born with the antithrombin gene.

C) They were the first animals to receive microinjections.

D) Their cells already contained genes usually found in humans.

30

The most likely purpose of the parenthetical information in lines 63-64 is to

A) illustrate an abstract concept.

B) describe a new hypothesis.

C) clarify a claim.

D) define a term.

31

The phrase "liquid gold" (line 71) most directly suggests that

A) GTC has invested a great deal of money in the microinjection technique.

B) GTC's milking parlors have significantly increased milk production.

C) transgenic goats will soon be a valuable asset for dairy farmers.

D) ATryn has proved to be a financially beneficial product for GTC.

Questions 32-41 are based on the following passages.

Passage 1 is adapted from Edmund Burke, *Reflections on the Revolution in France*. Originally published in 1790. Passage 2 is adapted from Thomas Paine, *Rights of Man*. Originally published in 1791.

Passage 1

To avoid . . . the evils of inconstancy and versatility, ten thousand times worse than those of obstinacy and the blindest prejudice, we have consecrated the state, that no man should approach to look into its defects or corruptions but with due caution; that he should never dream of beginning its reformation by its subversion; that he should approach to the faults of the state as to the wounds of a father, with pious awe and trembling solicitude. By this wise prejudice we are taught to look with horror on those children of their country who are prompt rashly to hack that aged parent in pieces, and put him into the kettle of magicians, in hopes that by their poisonous weeds, and wild incantations, they may regenerate the paternal constitution, and renovate their father's life.

Society is indeed a contract. Subordinate contracts for objects of mere occasional interest may be dissolved at pleasure—but the state ought not to be considered as nothing better than a partnership agreement in a trade of pepper and coffee, calico or tobacco, or some other such low concern, to be taken up for a little temporary interest, and to be dissolved by the fancy of the parties. It is to be looked on with other reverence; because it is not a partnership in things subservient only to the gross animal existence of a temporary and perishable nature. It is a partnership in all science; a partnership in all art; a partnership in every virtue, and in all perfection. As the ends of such a partnership cannot be obtained in many generations, it becomes a partnership not only between those who are living, but between those who are living, those who are dead, and those who are to be born.....The municipal corporations of that universal kingdom are not morally at liberty at their pleasure, and on their speculations of a contingent improvement, wholly to separate and tear asunder the bands of their subordinate community, and to dissolve it into an unsocial, uncivil, unconnected chaos of elementary principles.

Passage 2

Every age and generation must be as free to act for itself, *in all cases*, as the ages and generations which preceded it. The vanity and presumption of governing beyond the grave, is the most ridiculous and insolent of all tyrannies.

Man has no property in man; neither has any generation a property in the generations which are to follow. The Parliament or the people of 1688, or of any other period, had no more right to dispose of the people of the present day, or to bind or to control them in any shape whatever, than the parliament or the people of the present day have to dispose of, bind, or control those who are to live a hundred or a thousand years hence.

Every generation is, and must be, competent to all the purposes which its occasions require. It is the living, and not the dead, that are to be accommodated. When man ceases to be, his power and his wants cease with him; and having no longer any participation in the concerns of this world, he has no longer any authority in directing who shall be its governors, or how its government shall be organized, or how administered. . . .

Those who have quitted the world, and those who are not yet arrived at it, are as remote from each other, as the utmost stretch of mortal imagination can conceive. What possible obligation, then, can exist between them; what rule or principle can be laid down, that two nonentities, the one out of existence, and the other not in, and who never can meet in this world, that the one should control the other to the end of time? . . .

The circumstances of the world are continually changing, and the opinions of men change also; and as government is for the living, and not for the dead, it is the living only that has any right in it. That which may be thought right and found convenient in one age, may be thought wrong and found inconvenient in another. In such cases, who is to decide, the living, or the dead?

32

In Passage 1, Burke indicates that a contract between a person and society differs from other contracts mainly in its

A) brevity and prominence.

B) complexity and rigidity.

C) precision and usefulness.

D) seriousness and permanence.

33

As used in line 4, "state" most nearly refers to a

A) style of living.

B) position in life.

C) temporary condition.

D) political entity.

34

As used in line 22, "low" most nearly means

A) petty.

B) weak.

C) inadequate.

D) depleted.

35

It can most reasonably be inferred from Passage 2 that Paine views historical precedents as

A) generally helpful to those who want to change society.

B) surprisingly difficult for many people to comprehend.

C) frequently responsible for human progress.

D) largely irrelevant to current political decisions.

36

How would Paine most likely respond to Burke's statement in lines 30-34, Passage 1 ("As the . . . born")?

A) He would assert that the notion of a partnership across generations is less plausible to people of his era than it was to people in the past.

B) He would argue that there are no politically meaningful links between the dead, the living, and the unborn.

C) He would question the possibility that significant changes to a political system could be accomplished within a single generation.

D) He would point out that we cannot know what judgments the dead would make about contemporary issues.

37

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

A) Lines 41-43 ("Every . . . it")

B) Lines 43-45 ("The vanity . . . tyrannies")

C) Lines 56-58 ("It is . . . accommodated")

D) Lines 67-72 ("What . . . time")

38

Which choice best describes how Burke would most likely have reacted to Paine's remarks in the final paragraph of Passage 2?

A) With approval, because adapting to new events may enhance existing partnerships.

B) With resignation, because changing circumstances are an inevitable aspect of life.

C) With skepticism, because Paine does not substantiate his claim with examples of governments changed for the better.

D) With disapproval, because changing conditions are insufficient justification for changing the form of government.

39

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

A) Lines 1-4 ("To avoid . . . state")

B) Lines 7-9 ("he should . . . solicitude")

C) Lines 27-29 ("It is . . . perfection")

D) Lines 34-38 ("The municipal . . . community")

40

Which choice best states the relationship between the two passages?

A) Passage 2 challenges the primary argument of Passage 1.

B) Passage 2 advocates an alternative approach to a problem discussed in Passage 1.

C) Passage 2 provides further evidence to support an idea introduced in Passage 1.

D) Passage 2 exemplifies an attitude promoted in Passage 1.

41

The main purpose of both passages is to

A) suggest a way to resolve a particular political struggle.

B) discuss the relationship between people and their government.

C) evaluate the consequences of rapid political change.

D) describe the duties that governments have to their citizens.

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

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

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

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

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

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

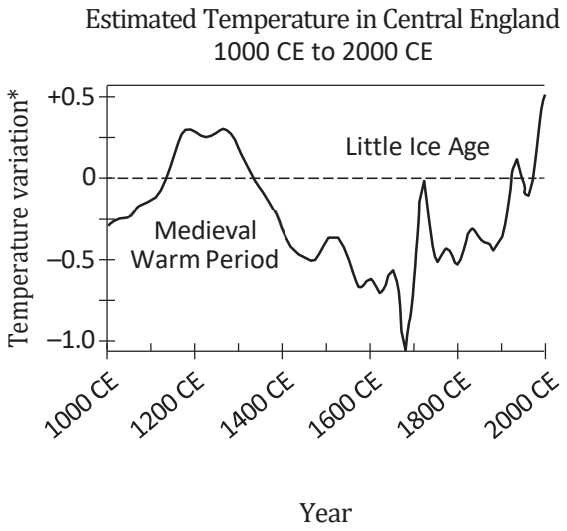
The researchers then began to reconstruct the formation of the large, 800-meter-deep caldera [a basin-shaped volcanic crater] that now sits atop the volcano. They examined 130 outcrops on the flanks of the volcano, exposing sequences of pumice—ash hardened into rock—and other pyroclastic material. The volume of ash deposited, and the estimated height of the eruption plume (43 kilometers above sea level) put the eruption's magnitude at a minimum of 7 on the volcanic explosivity index (which has a scale of 1 to 8)—making it one of the largest known in the Holocene.

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

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

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

ANIS



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

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

42

The main purpose of the passage is to

A) describe periods in Earth's recent geologic history.

B) explain the methods scientists use in radiocarbon analysis.

C) describe evidence linking the volcano Samalas to the Little Ice Age.

D) explain how volcanic glass forms during volcanic eruptions.

43

Over the course of the passage, the focus shifts from

A) a criticism of a scientific model to a new theory.

B) a description of a recorded event to its likely cause.

C) the use of ice core samples to a new method of measuring sulfates.

D) the use of radiocarbon dating to an examination of volcanic glass.

44

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

A) Lines 17-25 ("In 2012 . . . 1455 C.E.")

B) Lines 43-46 ("The researchers . . . atop the volcano")

C) Lines 46-48 ("They examined . . . material")

D) Lines 55-60 ("The team . . . 13th century")

45

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

A) demonstrate the concept of the hands-on nature of the work done by scientists.

B) highlight the fact that scientists often write about their discoveries.

C) underscore the sense of importance that scientists have regarding their work.

D) reinforce the idea that the evidence is there and can be interpreted by scientists.

46

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

A) Near the equator, in Indonesia

B) In the Arctic region

C) In the Antarctic region

D) Near the equator, in Ecuador

47

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

A) Lines 1-3 ("About 750 . . . Ice Age")

B) Lines 26-28 ("Such a . . . the cooling")

C) Lines 49-54 ("The volume . . . the Holocene")

D) Lines 61-64 ("It's not . . . climate impacts")

48

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

A) powerful volcanic eruptions occur frequently.

B) the effects of volcanic eruptions can last for centuries.

C) scientists know of other volcanoes that erupted during the Middle Ages.

D) other volcanoes have calderas that are very large.

49

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

A) Lines 3-4 ("Identifying . . . tricky")

B) Lines 26-28 ("Such a . . . cooling")

C) Lines 43-46 ("The researchers . . . atop the volcano")

D) Lines 71-75 ("But . . . closer match")

50

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

A) 1200 CE

B) 1375 CE

C) 1675 CE

D) 1750 CE

51

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

A) around 1150 CE.

B) just before 1300 CE.

C) just before 1500 CE.

D) around 1650 CE.

52

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

A) The greatest cooling during the Little Ice Age occurred hundreds of years after the temperature peaks of the Medieval Warm Period.

B) The sharp decline in temperature supports the hypothesis of an equatorial volcanic eruption in the Middle Ages.

C) Pyroclastic flows from volcanic eruptions continued for hundreds of years after the eruptions had ended.

D) Radiocarbon analysis is the best tool scientists have to determine the temperature variations after volcanic eruptions.

ANS

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.

Ghost Mural

In 1932 the well-known Mexican muralist David Alfaro Siqueiros was commissioned to paint a mural on the second-story exterior wall of a historic building in downtown Los Angeles. Siqueiros was asked to celebrate tropical America in his work, **1** <u>he accordingly titled it</u> "América Tropical." He painted the mural's first two sections, featuring images of a tropical rainforest and a Maya pyramid, during the day. **2** <u>Also,</u> to avoid

1

A) NO CHANGE
B) which he accordingly titled
C) accordingly he titled it
D) it was titled accordingly

2

A) NO CHANGE
B) However,
C) Although,
D) Moreover,

scrutiny, Siqueiros painted the final section of the mural, the **3** centerpiece at night.

4 The reason for Siqueiros's secrecy became clear when the mural was **5** confided. The centerpiece of the work was dominated by images of native people being oppressed and **6** including an eagle symbolizing the United States. Siqueiros's political message did not please the wealthy citizens who had commissioned his work. They eventually ordered the mural to be literally whitewashed, or painted over with white paint.

However, by the 1970s, the white paint had begun to fade, and the bright colors of the mural were beginning to show through. At the same time, a social and civil rights movement for Mexican Americans was working to raise awareness of Mexican American cultural identity. Artists associated with **7** this began to rediscover and promote the work of the Mexican muralists, particularly Siqueiros. To them, "América Tropical" was an example of how art in public spaces could be used to celebrate Mexican American heritage while at the same time making a political statement. Inspired by Siqueiros and the other muralists, this new generation of artists strove to emulate the old mural masters.

3

A) NO CHANGE
B) centerpiece,
C) centerpiece;
D) centerpiece—

4

Which choice best connects the sentence with the previous paragraph?

A) NO CHANGE
B) All three sections of the mural were on display
C) The community turned out in large numbers
D) Siqueiros was informed of people's reactions

5

A) NO CHANGE
B) promulgated.
C) imparted.
D) unveiled.

6

A) NO CHANGE
B) included
C) includes
D) had included

7

A) NO CHANGE
B) it
C) them
D) this movement

8 The result was an explosion of mural painting that spread throughout California and the southwestern United States in the 1970s. It was the Chicano mural movement. Hundreds of large, colorful new murals depicting elements of Mexican American life and history appeared during this period, some in designated cultural locations but many more in abandoned lots, on unused buildings, or 9 painted on infrastructure such as highways and bridges. Many of these murals can still be seen today, although some have not been well maintained.

8

Which choice most effectively combines the underlined sentences?

A) The result was an explosion, the Chicano mural movement, of mural painting that spread throughout California and the southwestern United States in the 1970s.

B) The result was the Chicano mural movement, an explosion of mural painting that spread throughout California and the southwestern United States in the 1970s.

C) The explosion of mural painting that spread throughout California and the southwestern United States in the 1970s was the resulting Chicano mural movement.

D) An explosion of mural painting resulted and it spread throughout California and the southwestern United States in the 1970s; it was the Chicano mural movement.

9

A) NO CHANGE

B) they were painted on

C) on

D) DELETE the underlined portion.

Fortunately, a new group of artists has discovered the murals, and efforts are underway to clean, restore, and repaint them. Once again, Siqueiros's "América Tropical" is **10** leading the way. After a lengthy and complex restoration process, this powerful work is now a tourist attraction, complete with a visitor center and a rooftop viewing platform. **11** Advocates hope that Siqueiros's mural will once more serve as an inspiration, this time inspiring viewers to save and restore an important cultural and artistic legacy.

10

Which choice most effectively sets up the information that follows?

A) NO CHANGE

B) being cleaned and restored.

C) at risk of destruction.

D) awaiting its moment of appreciation.

11

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

> When it was painted in 1932, Siqueiros's mural was considered offensive, but now it is acclaimed.

Should the writer make this addition here?

A) Yes, because it provides historical context for the changes discussed in the passage.

B) Yes, because it provides a useful reminder of how people once viewed Siqueiros's work.

C) No, because it unnecessarily repeats information from earlier in the passage.

D) No, because it makes a claim about Siqueiros's work that is not supported by the passage.

ANS

Questions 12-22 are based on the following passage.

The Hype of Healthier Organic Food

Some people buy organic food because they believe organically grown crops are more nutritious and safer for consumption than **12** the people who purchase their conventionally grown counterparts, which are usually produced with pesticides and synthetic fertilizers. In the name of health, **13** spending $1.60 for every dollar they would have spent on food that is **14** grown in a manner that is considered conventional. Scientific evidence, **15** therefore, suggests that consumers do not reap significant benefits, in terms of either nutritional value or safety, from organic food.

12

A) NO CHANGE
B) the purchase of
C) purchasing
D) DELETE the underlined portion.

13

A) NO CHANGE
B) these consumers spend
C) having spent
D) to spend

14

A) NO CHANGE
B) grown with conventional methods, using pesticides and synthetic fertilizers.
C) conventionally and therefore not organically grown.
D) conventionally grown.

15

A) NO CHANGE
B) furthermore,
C) however,
D) subsequently,

Although advocates of organic food **16** preserve that organic produce is healthier than conventionally grown produce because it has more vitamins and minerals, this assertion is not supported by scientific research. **17** For instance, one review published in *The American Journal of Clinical Nutrition* provided analysis of the results of comparative studies conducted over a span of 50 years; researchers consistently found no evidence that organic crops are more nutritious than conventionally grown ones in terms of their vitamin and mineral content. **18** Similarly, Stanford University researchers who examined almost 250 studies comparing the nutritional content of different kinds of organic foods with that of their nonorganic counterparts found very little difference between the two.

16

A) NO CHANGE
B) carry on
C) maintain
D) sustain

17

A) NO CHANGE
B) However,
C) In addition,
D) Likewise,

18

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

> The United States Department of Agriculture (USDA) reports that organic agricultural products are now available in approximately 20,000 markets specializing in natural foods.

Should the writer make this addition here?

A) Yes, because it adds a relevant research finding from a government agency.
B) Yes, because it supports the passage's argument that organic food is less nutritious than conventionally grown food.
C) No, because it is not relevant to the paragraph's discussion of scientific evidence.
D) No, because it introduces a term that has not been defined in the passage.

Evidence also undermines the claim that organic food is safer to eat. While researchers have found lower levels of pesticide residue in organic produce than in nonorganic produce, the pesticide residue detected in conventional produce falls within acceptable safety limits. According to such organizations as the US Environmental Protection Agency, the minute amounts of residue falling within such limits **19** have no negative impact on human health. **20**

19

A) NO CHANGE
B) is having
C) has had
D) has

20

At this point, the writer wants to further reinforce the paragraph's claim about the safety of nonorganic food. Which choice most effectively accomplishes this goal?

A) To be labeled organic, a product must meet certain standards determined and monitored by the US Department of Agriculture.
B) Organic food, however, is regulated to eliminate artificial ingredients that include certain types of preservatives, sweeteners, colorings, and flavors.
C) Moreover, consumers who are concerned about ingesting pesticide residue can eliminate much of it by simply washing or peeling produce before eating it.
D) In fact, the Environmental Protection Agency estimates that about one-fifth of the pesticides used worldwide are applied to crops in the United States.

Based on scientific evidence, organic food offers neither significant nutritional nor safety benefits for consumers. Proponents of organic food, of course, are quick to add that **21** their are numerous other reasons to buy organic **22** food, such as, a desire to protect the environment from potentially damaging pesticides or a preference for the taste of organically grown foods. Research regarding these issues is less conclusive than the findings regarding nutritional content and pesticide residue safety limits. What is clear, though, is this: if a consumer's goal is to buy the healthiest and safest food to eat, the increased cost of organic food is a waste of money.

21

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

22

A) NO CHANGE
B) food such as:
C) food such as,
D) food, such as

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

You Are Where You Say

Research on regional variations in English-language use has not only yielded answers to such 23 life-altering questions as how people in different parts of the United States refer to carbonated beverages ("soda"? "pop"? "coke"?) 24 it also illustrates how technology can change the very nature of research. While traditional, human-intensive data collection 25 has all but disappeared in language studies, the explosion of social media has opened new avenues for investigation.

[1] Perhaps the epitome of traditional methodology is the *Dictionary of American Regional English*, colloquially known as *DARE*. [2] Its fifth and final alphabetical volume—ending with "zydeco"—released in 2012, the dictionary represents decades of arduous work. [3] Over a six-year period from 1965 to 1970, university graduate students conducted interviews in more than a thousand communities across the nation. [4] Their goal was to determine what names people used for such everyday objects and concepts as a submarine sandwich

23

The writer wants to convey an attitude of genuine interest and to avoid the appearance of mockery. Which choice best accomplishes this goal?

A) NO CHANGE
B) galvanizing
C) intriguing
D) weird

24

A) NO CHANGE
B) and also illustrates
C) but also illustrates
D) illustrating

25

Which choice most effectively sets up the contrast in the sentence and is consistent with the information in the rest of the passage?

A) NO CHANGE
B) still has an important place
C) remains the only option
D) yields questionable results

(a “hero” in New York City but a “dagwood” in many parts of Minnesota, Iowa, and Colorado) and a heavy rainstorm (variously a “gully washer,” “pour-down,” or “stump mover”). [5] The work that dictionary founder Frederic G. Cassidy had expected to be finished by 1976 was not, in fact, completed in his lifetime. [6] The wait did not dampen enthusiasm among **26** scholars. Scholars consider the work a signal achievement in linguistics. **27**

Not all research into regional English varieties **28** requires such time, effort, and resources, however. Today’s researchers have found that the veritable army of trained volunteers traveling the country conducting face-to-face interviews can sometimes be **29** replaced by another army the vast array of individuals volunteering details about their lives—and, inadvertently, their language—through social media. Brice Russ of Ohio State University, for example, has employed software to sort through postings on one social media **30** cite in search of particular words and phrases of interest as well as the location from which users are posting. From these data,

26

A) NO CHANGE
B) scholars, and these scholars
C) scholars, but scholars
D) scholars, who

27

To improve the cohesion and flow of this paragraph, the writer wants to add the following sentence.

Data gathering proved to be the quick part of the project.

The sentence would most logically be placed after

A) sentence 2.
B) sentence 3.
C) sentence 4.
D) sentence 5.

28

A) NO CHANGE
B) are requiring
C) have required
D) require

29

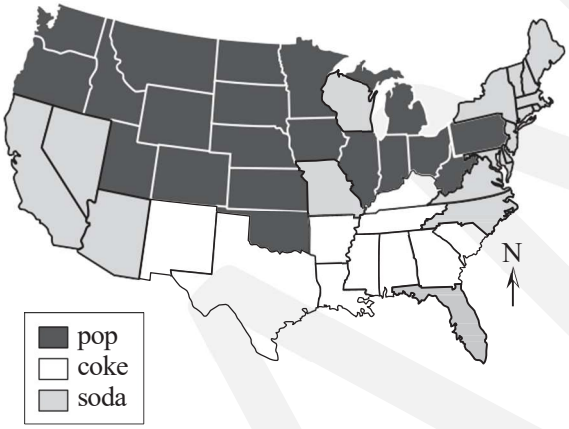
A) NO CHANGE
B) replaced—by another army,
C) replaced by another army;
D) replaced by another army:

30

A) NO CHANGE
B) site in search of
C) sight in search for
D) cite in search for

he was able, among other things, to confirm regional variations in people's terms for soft drinks. As the map shows, "soda" is commonly heard in the middle and western portions of the United States; "pop" is frequently used in many southern states; and "coke" is predominant in the northeastern and southwest regions but used elsewhere as well. **31** As interesting as Russ's findings are, though, **32** they're true value lies in their reminder that the Internet is not merely a sophisticated tool for collecting data but is also **33** itself a rich source of data.

Soft Drink Descriptions by State
Highest Percentage Reported



Adapted from Jennifer M. Smith, Department of Geography, The Pennsylvania State University, with data from www.popvssoda.com

31

The writer wants the information in the passage to correspond as closely as possible with the information in the map. Given that goal and assuming that the rest of the previous sentence would remain unchanged, in which sequence should the three terms for soft drinks be discussed?

A) NO CHANGE
B) "pop," "soda," "coke"
C) "pop," "coke," "soda"
D) "soda," "coke," "pop"

32

A) NO CHANGE
B) their true value lies in their
C) there true value lies in they're
D) their true value lies in there

33

Which choice most effectively concludes the sentence and paragraph?

A) NO CHANGE
B) where we can learn what terms people use to refer to soft drinks.
C) a useful way to stay connected to friends, family, and colleagues.
D) helpful to researchers.

Questions 34-44 are based on the following passage.

Creating Worlds: A Career in Game Design

If you love video games and have thought about how the games you play might be changed or improved, or if you've imagined creating a video game of your own, you might want to consider a career as a video game designer. There **34** were a number of steps you can take to determine whether game design is the right field for you and, if it is, to prepare yourself for such a career.

Before making the choice, you should have some sense of what a video game designer does. Every video game, whether for a console, computer, or mobile device, starts with a concept that originates in the mind of a designer. The designer envisions the game's fundamental **35** elements: the settings, characters, and plots that make each game unique, and is thus a primary creative force behind a video game.

Conceptualizing a game is only the beginning of a video game designer's **36** job, however, no matter how good a concept is, it will never be translated into a video game unless it is communicated effectively to all the other members of the video game development team. **37** A designer must generate extensive documentation and

34

A) NO CHANGE
B) has been
C) are
D) was

35

A) NO CHANGE
B) elements: the settings, characters, and plots that make each game unique—
C) elements—the settings, characters, and plots that make each game unique—
D) elements; the settings, characters, and plots that make each game unique;

36

A) NO CHANGE
B) job, however. No
C) job—however, no
D) job however no

37

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

> Successful communication is essential if a designer's idea is to become a reality.

Should the writer make this addition here?

A) Yes, because it supports the conclusion drawn in the following sentence.
B) Yes, because it illustrates a general principle discussed in the paragraph.
C) No, because it distracts from the focus of the paragraph by introducing irrelevant material.
D) No, because it merely reformulates the thought expressed in the preceding sentence.

38 explain his or her ideas clearly in order to ensure that the programmers, artists, and others on the team all share the same vision. 39 Likewise, anyone considering a career as a video game designer must be 40 skilled writers and speakers. In addition, because video game development is a collaborative effort and because the development of any one game may take months or even years, a designer must be an effective team player as well as detail oriented.

[1] A basic understanding of computer programming is essential. [2] In fact, many designers 41 initially begin their pursuits as programmers. [3] Consider taking some general computer science courses as well as courses in artificial intelligence and graphics in order to increase your understanding of the technical challenges involved in developing a video game. [4] Courses in psychology and human behavior may help you develop 42 emphatic collaboration skills, while courses in the humanities, such as in literature and film, should give you the background necessary to develop effective narrative structures. [5] A

38

Which choice results in a sentence that best supports the point developed in this paragraph?

A) NO CHANGE
B) possess a vivid imagination
C) assess his or her motivations carefully
D) learn to accept constructive criticism

39

A) NO CHANGE
B) Nevertheless,
C) Consequently,
D) However,

40

A) NO CHANGE
B) a skilled writer and speaker.
C) skilled both as writers and speakers.
D) both skilled writers and speakers.

41

A) NO CHANGE
B) start to begin their work
C) initiate their progression
D) begin their careers

42

A) NO CHANGE
B) paramount
C) eminent
D) important

designer also needs careful educational preparation. [6] Finally, because a designer should understand the business aspects of the video game industry, such as budgeting and marketing, you may want to consider taking some business courses. [7] Although demanding and deadline driven, 43 video game design can be a lucrative and rewarding field for people who love gaming and have prepared themselves with the necessary skills and knowledge. 44

43

A) NO CHANGE
B) the choice of video game design
C) you should choose video game design because it
D) choosing to design video games

44

To make this paragraph most logical, sentence 5 should be

A) placed where it is now.
B) placed before sentence 1.
C) placed after sentence 3.
D) DELETED from the paragraph.

ANIS

SAT® Practice Test 5

ANIS

Test begins on the next page.

ANIS

Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

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

Questions 1-10 are based on the following passage.

This passage is from Carlos Ruiz Zafón, *The Angel's Game*. ©2008 by Dragonworks, S.L. Translation ©2009 by Lucia Graves. The narrator, a writer, recalls his childhood in early twentieth-century Barcelona.

Even then my only friends were made of paper and ink. At school I had learned to read and write long before the other children. Where my school friends saw notches of ink on incomprehensible pages, I saw light, streets, and people. Words and the mystery of their hidden science fascinated me, and I saw in them a key with which I could unlock a boundless world, a safe haven from that home, those streets, and those troubled days in which even I could sense that only a limited fortune awaited me. My father didn't like to see books in the house. There was something about them—apart from the letters he could not decipher—that offended him. He used to tell me that as soon as I was ten he would send me off to work and that I'd better get rid of all my scatterbrained ideas if I didn't want to end up a loser, a nobody. I used to hide my books under the mattress and wait for him to go out or fall asleep so that I could read. Once he caught me reading at night and flew into a rage. He tore the book from my hands and flung it out of the window.

"If I catch you wasting electricity again, reading all this nonsense, you'll be sorry."

My father was not a miser and, despite the hardships we suffered, whenever he could he gave me a few coins so that I could buy myself some treats like the other children. He was convinced that I spent them on licorice sticks, sunflower seeds, or sweets, but I would keep them in a coffee tin under the bed, and when I'd collected four or five reales I'd secretly rush out to buy myself a book.

My favorite place in the whole city was the Sempere & Sons bookshop on Calle Santa Ana. It smelled of old paper and dust and it was my sanctuary, my refuge. The bookseller would let me sit on a chair in a corner and read any book I liked to my heart's content. He hardly ever allowed me to pay for the books he placed in my hands, but when he wasn't looking I'd leave the coins I'd managed to collect on the counter before I left. It was only small change—if I'd had to buy a book with that pittance, I would probably have been able to afford only a booklet of cigarette papers. When it was time for me to leave, I would do so dragging my feet, a weight on my soul. If it had been up to me, I would have stayed there forever.

One Christmas Sempere gave me the best gift I have ever received. It was an old volume, read and experienced to the full.

"*Great Expectations*, by Charles Dickens," I read on the cover.

I was aware that Sempere knew a few authors who frequented his establishment and, judging by the care with which he handled the volume, I thought perhaps this Mr. Dickens was one of them.

"A friend of yours?"

"A lifelong friend. And from now on, he's your friend too."

That afternoon I took my new friend home, hidden under my clothes so that my father wouldn't see it. It was a rainy winter, with days as gray as lead, and I read *Great Expectations* about nine times, partly because I had no other book at hand, partly because I did not think there could be a better one in the whole world and I was beginning to suspect that Mr. Dickens had written it just for me. Soon I was convinced that I didn't want to do anything else in life but learn to do what Mr. Dickens had done.

1

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

A) general discussion of the narrator's love of reading to a portrayal of an influential incident.

B) depiction of the narrator's father to an examination of an author with whom the narrator becomes enchanted.

C) symbolic representation of a skill the narrator possesses to an example of its application.

D) tale about the hardships of the narrator's childhood to an analysis of the effects of those hardships.

2

The main purpose of lines 1-10 ("Even . . . awaited me") is to

A) introduce the characters who play a part in the narrator's story.

B) list the difficult conditions the narrator endured in childhood.

C) describe the passion that drives the actions the narrator recounts.

D) depict the narrator's aspirations before he met Sempere.

3

With which of the following statements about his father would the narrator most likely agree?

A) He lacked affection for the narrator.

B) He disliked any unnecessary use of money.

C) He would not have approved of Sempere's gift.

D) He objected to the writings of Charles Dickens.

4

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

A) Lines 24-27 ("My father . . . children")

B) Lines 35-37 ("The bookseller . . . content")

C) Lines 37-38 ("He hardly . . . hands")

D) Lines 59-61 ("That afternoon . . . see it")

5

It can reasonably be inferred from the passage that the main reason that the narrator considers *Great Expectations* to be the best gift he ever received is because

A) reading the book convinced him that he wanted to be a writer.

B) he'd only ever been given sweets and snacks as gifts in the past.

C) the gift meant that Sempere held him in high regard.

D) Sempere was a friend of the book's author.

6

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

A) Lines 38-40 ("when . . . left")

B) Lines 48-49 ("It was . . . full")

C) Lines 52-55 ("I was . . . them")

D) Lines 66-68 ("Soon . . . done")

7

The narrator indicates that he pays Sempere

A) less than Sempere expects him to pay for the books.

B) nothing, because Sempere won't take his money.

C) the money he makes selling sweets to the other children.

D) much less for the books than they are worth.

8

As used in line 44, "weight" most nearly means

A) bulk.

B) burden.

C) force.

D) clout.

9

The word "friend" is used twice in lines 57-58 to

A) underline the importance of the narrator's connection to Sempere.

B) stress how friendships helped the narrator deal with his difficult home situation.

C) emphasize the emotional connection Sempere feels to reading.

D) imply that the narrator's sentiments caused him to make an irrational decision.

10

Which statement best characterizes the relationship between Sempere and Charles Dickens?

A) Sempere models his own writing after Dickens's style.

B) Sempere is an avid admirer of Dickens's work.

C) Sempere feels a personal connection to details of Dickens's biography.

D) Sempere considers himself to be Dickens's most appreciative reader.

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

This passage is adapted from Jeffrey Mervis, "Why Null Results Rarely See the Light of Day." ©2014 by American Association for the Advancement of Science.

The question of what to do with null results—when researchers fail to see an effect that should be detectable—has long been hotly debated among those conducting medical trials, where the results can have a big impact on lives and corporate bottom lines. More recently, the debate has spread to the social and behavioral sciences, which also have the potential to sway public and social policy. There were little hard data, however, on how often or why null results were squelched. "Yes, it's true that null results are not as exciting," political scientist Gary King of Harvard University says. "But I suspect another reason they are rarely published is that there are many, many ways to produce null results by messing up. So they are much harder to interpret."

In a recent study, Stanford political economist Neil Malhotra and two of his graduate students examined every study since 2002 that was funded by a competitive grants program called TESS (Time-sharing Experiments for the Social Sciences). TESS allows scientists to order up Internet-based surveys of a representative sample of US adults to test a particular hypothesis (for example, whether voters tend to favor legislators who boast of bringing federal dollars to their districts over those who tout a focus on policy matters).

Malhotra's team tracked down working papers from most of the experiments that weren't published, and for the rest asked grantees what had happened to their results. In their e-mailed responses, some scientists cited deeper problems with a study or more pressing matters—but many also believed the journals just wouldn't be interested. "The unfortunate reality of the publishing world [is] that null effects do not tell a clear story," said one scientist. Said another, "Never published, definitely disappointed to not see any major effects."

Their answers suggest to Malhotra that rescuing findings from the file drawer will require a shift in expectations. "What needs to change is the culture—the author's belief about what will happen if the research is written up," he says.

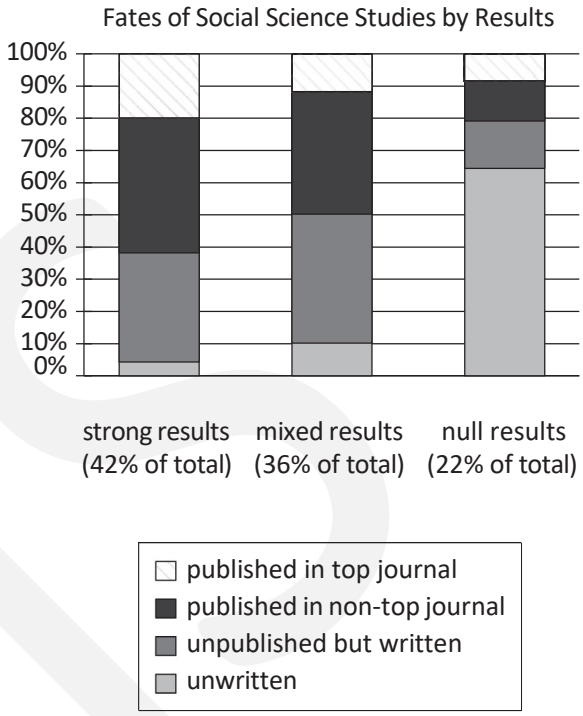
Not unexpectedly, the statistical strength of the findings made a huge difference in whether they were ever published. Overall, 42% of the experiments

produced statistically significant results. Of those, 62% were ultimately published, compared with 21% of the null results. However, the Stanford team was surprised that researchers didn't even write up 65% of the experiments that yielded a null finding.

Scientists not involved in the study praise its "clever" design. "It's a very important paper" that "starts to put numbers on things we want to understand," says economist Edward Miguel of the University of California, Berkeley.

He and others note that the bias against null studies can waste time and money when researchers devise new studies replicating strategies already found to be ineffective. Worse, if researchers publish significant results from similar experiments in the future, they could look stronger than they should because the earlier null studies are ignored. Even more troubling to Malhotra was the fact that two scientists whose initial studies "didn't work out" went on to publish results based on a smaller sample. "The non-TESS version of the same study, in which we used a student sample, did yield fruit," noted one investigator.

A registry for data generated by all experiments would address these problems, the authors argue. They say it should also include a "preanalysis" plan, that is, a detailed description of what the scientist hopes to achieve and how the data will be analyzed. Such plans would help deter researchers from tweaking their analyses after the data are collected in search of more publishable results.



Adapted from Annie Franco, Neil Malhotra, and Gabor Simonovits, "Publication Bias in the Social Sciences: Unlocking the File Drawer." ©2014 by American Association for the Advancement of Science.

11

The passage primarily serves to

A) discuss recent findings concerning scientific studies and dispute a widely held belief about the publication of social science research.

B) explain a common practice in the reporting of research studies and summarize a study that provides support for a change to that practice.

C) describe the shortcomings in current approaches to medical trials and recommend the implementation of a government database.

D) provide context as part of a call for stricter controls on social science research and challenge publishers to alter their mindsets.

12

As used in line 21, "allows" most nearly means

A) admits.

B) tolerates.

C) grants.

D) enables.

13

As used in line 43, "strength" most nearly means

A) attribution.

B) exertion.

C) toughness.

D) significance.

14

The passage indicates that a problem with failing to document null results is that

A) the results of related studies will be misleading.

B) researchers may overlook promising areas of study.

C) mistakes in the collection of null results may be overlooked.

D) the bias against null results will be disregarded.

15

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

A) Lines 38-40 ("Their . . . expectations")

B) Lines 48-50 ("However . . . finding")

C) Lines 56-59 ("He and . . . ineffective")

D) Lines 59-62 ("Worse . . . ignored")

16

Based on the passage, to which of the following hypothetical situations would Malhotra most strongly object?

A) A research team refuses to publish null results in anything less than a top journal.

B) A research team excludes the portion of data that produced null results when reporting its results in a journal.

C) A research team unknowingly repeats a study that produced null results for another research team.

D) A research team performs a follow-up study that expands the scope of an initial study that produced null results.

17

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

A) Lines 36-37 ("Said . . . effects")

B) Lines 45-48 ("Overall . . . null results")

C) Lines 62-68 ("Even . . . investigator")

D) Lines 69-73 ("A registry . . . analyzed")

18

The last paragraph serves mainly to

A) propose a future research project to deal with some of the shortcomings of current publishing practices noted in the passage.

B) introduce a possible solution to problems discussed in the passage regarding the reporting of social science studies.

C) summarize the findings of a study about experimental results explained in the passage.

D) reinforce the importance of reexamining the results of all social science trials.

19

According to the graph, social science studies yielding strong results were

A) unwritten over 50 percent of the time.

B) unpublished but written 50 percent of the time.

C) published in a top journal approximately 20 percent of the time.

D) published in a non-top journal almost 80 percent of the time.

20

Which of the following statements is supported by the graph?

A) Studies with mixed results were just as likely to be published as they were to be left either unpublished or unwritten.

B) Studies with mixed results occurred more frequently than did studies with strong and null results combined.

C) Studies with mixed results were more likely to be published in top journals than they were to be published in non-top journals.

D) Studies with mixed results were the most common type of social science studies.

21

Which statement from the passage is most directly reflected by the data presented in the graph?

A) Lines 30-33 ("In their . . . interested")

B) Lines 33-36 ("The unfortunate . . . scientist")

C) Lines 43-45 ("Not unexpectedly . . . published")

D) Lines 52-55 ("It's a . . . Berkeley")

Questions 22-31 are based on the following passage and supplementary material.

This passage is adapted from Rachel Ehrenberg, "Salt Stretches in Nanoworld." ©2009 by Society for Science & the Public. The "nanoworld" is the world observed on a scale one billionth that of ordinary human experience.

Inflexible old salt becomes a softy in the nanoworld, stretching like taffy to more than twice its length, researchers report. The findings may lead to new approaches for making nanowires that could end up in solar cells or electronic circuits. The work also suggests that these ultra-tiny salt wires may already exist in sea spray and large underground salt deposits.

"We think nanowires are special and go to great lengths to make them," says study coauthor Nathan Moore of Sandia National Laboratories in Albuquerque. "Maybe they are more common than we think."

Metals such as gold or lead, in which bonding angles are loosey-goosey, can stretch out at temperatures well below their melting points. But scientists don't expect this superplasticity in a rigid, crystalline material like salt, Moore says.

This unusual behavior highlights that different forces rule the nanoworld, says theoretical physicist Krzysztof Kempa of Boston College. "Forget about gravity. It plays no role," he says. Surface tension and electrostatic forces are much more important at this scale.

Moore and his colleagues discovered salt's stretchiness accidently. They were investigating how water sticks to a surface such as salt and created a super-dry salt sample for testing. After cleaving a chunk of salt about the size of a sugar cube with a razor, the scientists guided a microscope that detects forces toward the surface. When the tip was far away there was no measured force, but within about seven nanometers a very strong attraction rapidly developed between the diamond tip of the microscope and the salt. The salt actually stretched out to glom on to the microscope tip. Using an electron microscope to see what was happening, the researchers observed the nanowires.

The initial attraction between the tip and salt might be due to electrostatic forces, perhaps good old van der Waals interactions,[1] the researchers speculate. Several mechanisms might lead to the elasticity, including the excessive surface tension found in the nanoworld (the same tension that allows a water strider to skim the surface of a pond).

The surface tension is so strong that as the microscope pulls away from the salt, the salt stretches, Kempa says. "The inside has no choice but to rearrange the atoms, rather than break," he says.

This bizarre behavior is actually mirrored in the macroworld, the researchers say. Huge underground deposits of salt can bend like plastic, but water is believed to play a role at these scales. Perhaps salty nanowires are present in these deposits as well.

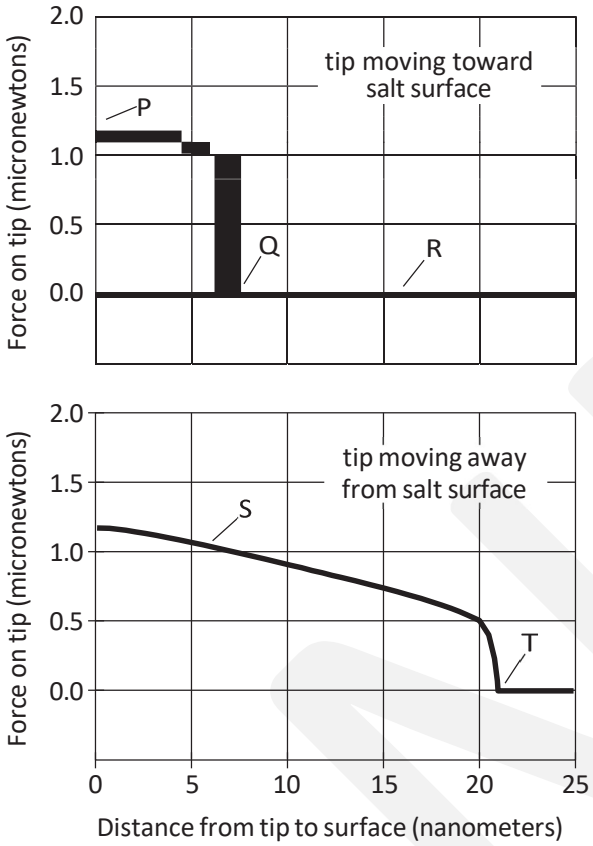
"Sodium chloride[2] is everywhere—in the air, in our bodies," Moore says. "This may change our view of things, of what's happening at the nanoscale."

The work also suggests new techniques for making nanowires, which are often created through nano-imprinting techniques, Kempa says. "We invoke the intuition of the macroworld," he says. "Maybe instead of stamping [nanowires] we should be nano-pulling them."

[1] Attractive forces between nearby atoms

[2] Common salt

Interaction of Microscope Tip with Salt Surface



Adapted from Moore et al., "Superplastic Nanowires Pulled from the Surface of Common Salt." ©2009 by American Chemical Society.

22

One central idea of the passage is that

A) sometimes materials behave contrary to expectations.

B) systems can be described in terms of inputs and outputs.

C) models of materials have both strengths and weaknesses.

D) properties of systems differ from the properties of their parts.

23

Which choice best describes the overall structure of the passage?

A) A list of several ways in which salt's properties differ from researchers' expectations

B) A presentation of a hypothesis regarding salt behavior, description of an associated experiment, and explanation of why the results weaken the hypothesis

C) A description of two salt crystal experiments, the apparent disagreement in their results, and the resolution by more sensitive equipment

D) An introduction to an interesting salt property, description of its discovery, and speculation regarding its application

24

Which choice provides the best evidence for the claim that Moore's group was surprised to observe salt stretching?

A) Lines 17-18 ("But . . . says")

B) Lines 26-28 ("They were . . . testing")

C) Lines 36-38 ("Using . . . nanowires")

D) Lines 55-56 ("Sodium . . . says")

25

As used in line 20, "rule" most nearly means

A) mark.

B) control.

C) declare.

D) restrain.

26

According to the passage, researchers have identified which mechanism as potentially responsible for the initial attraction between the microscope tip and the salt?

A) Gravity
B) Nano-imprinting
C) Surface tension
D) Van der Waals interactions

27

As used in line 42, "lead to" most nearly means

A) guide to.
B) result in.
C) point toward.
D) start with.

28

Based on the passage, which choice best describes the relationship between salt behavior in the nanoworld and in the macroworld?

A) In both the nanoworld and the macroworld, salt can be flexible.
B) Salt flexibility is expected in the nanoworld but is surprising in the macroworld.
C) Salt nanowires were initially observed in the nanoworld and later observed in the macroworld.
D) In the nanoworld, salt's interactions with water lead to very different properties than they do in the macroworld.

29

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

A) Lines 12-13 ("Maybe . . . think")
B) Lines 22-24 ("Surface . . . scale")
C) Lines 39-42 ("The initial . . . speculate")
D) Lines 51-53 ("Huge . . . scales")

30

According to the information in the graph, when the microscope tip is moving away from the salt surface and is 15 nanometers from the surface, what is the approximate force on the microscope tip, in micronewtons?

A) 0
B) 0.25
C) 0.75
D) 1.25

31

Based on the passage and the graph, which label on the graph indicates the point at which a salt nanowire breaks?

A) P
B) Q
C) R
D) T

Questions 32-41 are based on the following passages.

These passages are adapted from the Lincoln-Douglas debates. Passage 1 is from a statement by Stephen Douglas. Passage 2 is from a statement by Abraham Lincoln. Douglas and Lincoln engaged in a series of debates while competing for a US Senate seat in 1858.

Passage 1

Mr. Lincoln likens that bond of the Federal Constitution, joining Free and Slave States together, to a house divided against itself, and says that it is contrary to the law of God, and cannot stand. When did he learn, and by what authority does he proclaim, that this Government is contrary to the law of God and cannot stand? It has stood thus divided into Free and Slave States from its organization up to this day. During that period we have increased from four millions to thirty millions of people; we have extended our territory from the Mississippi to the Pacific Ocean; we have acquired the Floridas and Texas, and other territory sufficient to double our geographical extent; we have increased in population, in wealth, and in power beyond any example on earth; we have risen from a weak and feeble power to become the terror and admiration of the civilized world; and all this has been done under a Constitution which Mr. Lincoln, in substance, says is in violation of the law of God; and under a Union divided into Free and Slave States, which Mr. Lincoln thinks, because of such division, cannot stand. Surely, Mr. Lincoln is a wiser man than those who framed the Government. . . .

I now come back to the question, why cannot this Union exist forever, divided into Free and Slave States, as our fathers made it? It can thus exist if each State will carry out the principles upon which our institutions were founded; to wit, the right of each State to do as it pleases, without meddling with its neighbors. Just act upon that great principle, and this Union will not only live forever, but it will extend and expand until it covers the whole continent, and makes this confederacy one grand, ocean-bound Republic. We must bear in mind that we are yet a young nation, growing with a rapidity unequalled in the history of the world, that our national increase is great, and that the emigration from the old world is increasing, requiring us to expand and acquire new territory from time to time, in order to give our people land to live upon. If we live upon the principle of State rights and State sovereignty, each State regulating its own affairs and minding its own business, we can go on and extend indefinitely, just as fast and as far as we need the territory. . . .

Passage 2

In complaining of what I said in my speech at Springfield, in which he says I accepted my nomination for the Senatorship . . . he again quotes that portion in which I said that "a house divided against itself cannot stand." Let me say a word in regard to that matter. He tries to persuade us that there must be a variety in the different institutions of the States of the Union; that that variety necessarily proceeds from the variety of soil, climate, of the face of the country, and the difference in the natural features of the States. I agree to all that. Have these very matters ever produced any difficulty among us? Not at all. Have we ever had any quarrel over the fact that they have laws in Louisiana designed to regulate the commerce that springs from the production of sugar? Or because we have a different class relative to the production of flour in this State? Have they produced any differences? Not at all. They are the very cements of this Union. They don't make the house a "house divided against itself." They are the props that hold up the house and sustain the Union.

But has it been so with this element of slavery? Have we not always had quarrels and difficulties over it? And when will we cease to have quarrels over it? Like causes produce like effects. It is worth while to observe that we have generally had comparative peace upon the slavery question, and that there has been no cause for alarm until it was excited by the effort to spread it into new territory. Whenever it has been limited to its present bounds, and there has been no effort to spread it, there has been peace. All the trouble and convulsion has proceeded from efforts to spread it over more territory. It was thus at the date of the Missouri Compromise. It was so again with the annexation of Texas; so with the territory acquired by the Mexican War; and it is so now. Whenever there has been an effort to spread it there has been agitation and resistance.....Do you think that the nature of man will be changed, that the same causes that produced agitation at one time will not have the same effect at another?

32

In the first paragraph of Passage 1, the main purpose of Douglas's discussion of the growth of the territory and population of the United States is to

A) provide context for Douglas's defense of continued expansion.

B) suggest that the division into free and slave states does not endanger the Union.

C) imply that Lincoln is unaware of basic facts concerning the country.

D) account for the image of the United States as powerful and admirable.

33

What does Passage 1 suggest about the US government's provisions for the institution of slavery, as framed in the Constitution?

A) They included no means for reconciling differences between free states and slave states.

B) They anticipated the Union's expansion into western territories.

C) They provided a good basic structure that does not need to be changed.

D) They were founded on an assumption that slavery was necessary for economic growth.

34

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

A) Lines 10-16 ("we have . . . earth")

B) Lines 25-27 ("I now . . . made it")

C) Lines 35-39 ("We must . . . increasing")

D) Lines 41-45 ("If we . . . territory")

35

As used in line 67, "element" most nearly means

A) ingredient.

B) environment.

C) factor.

D) quality.

36

Based on Passage 2, Lincoln would be most likely to agree with which claim about the controversy over slavery?

A) It can be ended only if Northern states act unilaterally to abolish slavery throughout the United States.

B) It would abate if attempts to introduce slavery to regions where it is not practiced were abandoned.

C) It has been exacerbated by the ambiguity of laws regulating the holding of slaves.

D) It is fueled in part by differences in religion and social values from state to state.

37

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

A) Lines 56-61 ("I agree . . . sugar")

B) Lines 64-66 ("They don't . . . Union")

C) Lines 74-76 ("Whenever . . . peace")

D) Lines 83-86 ("Do you . . . another")

38

As used in line 84, “nature” most nearly means

A) force.

B) simplicity.

C) world.

D) character.

39

Which choice identifies a central tension between the two passages?

A) Douglas proposes changes to federal policies on slavery, but Lincoln argues that such changes would enjoy no popular support.

B) Douglas expresses concerns about the economic impact of abolition, but Lincoln dismisses those concerns as irrelevant.

C) Douglas criticizes Lincoln for finding fault with the Constitution, and Lincoln argues that this criticism misrepresents his position.

D) Douglas offers an interpretation of federal law that conflicts with Lincoln’s, and Lincoln implies that Douglas’s interpretation is poorly reasoned.

40

Both passages discuss the issue of slavery in relationship to

A) the expansion of the Union.

B) questions of morality.

C) religious toleration.

D) laws regulating commerce.

41

In the context of each passage as a whole, the questions in lines 25-27 of Passage 1 and lines 67-69 of Passage 2 primarily function to help each speaker

A) cast doubt on the other’s sincerity.

B) criticize the other’s methods.

C) reproach the other’s actions.

D) undermine the other’s argument.

Questions 42-52 are based on the following passage.

This passage is adapted from Daniel Chamovitz, *What a Plant Knows: A Field Guide to the Senses*. ©2012 by Daniel Chamovitz.

The Venus flytrap [*Dionaea muscipula*] needs to know when an ideal meal is crawling across its leaves. Closing its trap requires a huge expense of energy, and reopening the trap can take several hours, so *Dionaea* only wants to spring closed when it's sure that the dawdling insect visiting its surface is large enough to be worth its time. The large black hairs on their lobes allow the Venus flytraps to literally feel their prey, and they act as triggers that spring the trap closed when the proper prey makes its way across the trap. If the insect touches just one hair, the trap will not spring shut; but a large enough bug will likely touch two hairs within about twenty seconds, and that signal springs the Venus flytrap into action.

We can look at this system as analogous to short-term memory. First, the flytrap encodes the information (forms the memory) that something (it doesn't know what) has touched one of its hairs. Then it stores this information for a number of seconds (retains the memory) and finally retrieves this information (recalls the memory) once a second hair is touched. If a small ant takes a while to get from one hair to the next, the trap will have forgotten the first touch by the time the ant brushes up against the next hair. In other words, it loses the storage of the information, doesn't close, and the ant happily meanders on. How does the plant encode and store the information from the unassuming bug's encounter with the first hair? How does it remember the first touch in order to react upon the second?

Scientists have been puzzled by these questions ever since John Burdon-Sanderson's early report on the physiology of the Venus flytrap in 1882. A century later, Dieter Hodick and Andreas Sievers at the University of Bonn in Germany proposed that the flytrap stored information regarding how many hairs have been touched in the electric charge of its leaf. Their model is quite elegant in its simplicity. In their studies, they discovered that touching a trigger hair on the Venus flytrap causes an electric action potential [a temporary reversal in the electrical polarity of a cell membrane] that induces calcium channels to open in the trap (this calcium channels is similar to the processes that occur during communication between human neurons), thus causing a rapid increase in the concentration of calcium ions.

They proposed that the trap requires a relatively high concentration of calcium in order to close and that a single action potential from just one trigger hair being touched does not reach this level. Therefore, a second hair needs to be stimulated to push the calcium concentration over this threshold and spring the trap. The encoding of the information requires maintaining a high enough level of calcium so that a second increase (triggered by touching the second hair) pushes the total concentration of calcium over the threshold. As the calcium ion concentrations dissipate over time, if the second touch and potential don't happen quickly, the final concentration after the second trigger won't be high enough to close the trap, and the memory is lost.

Subsequent research supports this model. Alexander Volkov and his colleagues at Oakwood University in Alabama first demonstrated that it is indeed electricity that causes the Venus flytrap to close. To test the model they rigged up very fine coupling of action potentials and the opening of

electrodes and applied an electrical current to the open lobes of the trap. This made the trap close without any direct touch to its trigger hairs (while they didn't measure calcium levels, the current likely led to increases). When they modified this experiment by altering the amount of electrical current, Volkov could determine the exact electrical charge needed for the trap to close. As long as fourteen microcoulombs—a tiny bit more than the static electricity generated by rubbing two balloons together—flowed between the two electrodes, the trap closed. This could come as one large burst or as a series of smaller charges within twenty seconds. If it took longer than twenty seconds to accumulate the total charge, the trap would remain open.

ANIS

42

The primary purpose of the passage is to

A) discuss findings that offer a scientific explanation for the Venus flytrap's closing action.

B) present research that suggests that the Venus flytrap's predatory behavior is both complex and unique among plants.

C) identify the process by which the Venus flytrap's closing action has evolved.

D) provide a brief overview of the Venus flytrap and its predatory behavior.

43

Based on the passage, a significant advantage of the Venus flytrap's requirement for multiple triggers is that it

A) enables the plant to identify the species of its prey.

B) conserves the plant's calcium reserves.

C) safeguards the plant's energy supply.

D) prevents the plant from closing before capturing its prey.

44

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

A) Lines 3-7 ("Closing . . . time")

B) Lines 7-11 ("The large . . . across the trap")

C) Lines 11-14 ("If the . . . action")

D) Lines 16-18 ("First . . . hairs")

45

The use of the phrases "dawdling insect" (line 6), "happily meanders" (line 27), and "unassuming bug's encounter" (lines 28-29) in the first two paragraphs establishes a tone that is

A) academic.

B) melodramatic.

C) informal.

D) mocking.

46

In the second paragraph (lines 15-31), the discussion of short-term memory primarily functions to

A) clarify an explanation of what prompts the Venus flytrap to close.

B) advance a controversial hypothesis about the function of electric charges found in the leaf of the Venus flytrap.

C) stress the distinction between the strategies of the Venus flytrap and the strategies of human beings.

D) emphasize the Venus flytrap's capacity for retaining detailed information about its prey.

47

According to the passage, which statement best explains why the Venus flytrap requires a second trigger hair to be touched within a short amount of time in order for its trap to close?

A) The second trigger produces an electrical charge that reverses the charge produced by the first trigger.

B) The second trigger stabilizes the surge of calcium ions created by the first trigger.

C) The second trigger prompts the calcium channels to open.

D) The second trigger provides a necessary supplement to the calcium concentration released by the first trigger.

48

Which choice describes a scenario in which Hodick and Sievers's model predicts that a Venus flytrap will NOT close around an insect?

A) A large insect's second contact with the plant's trigger hairs results in a total calcium ion concentration above the trap's threshold.

B) A large insect makes contact with a second trigger hair after a period of inactivity during which calcium ion concentrations have diminished appreciably.

C) A large insect's contact with the plant's trigger hairs causes calcium channels to open in the trap.

D) A large insect's contact with a second trigger hair occurs within ten seconds of its contact with the first trigger hair.

49

As used in line 67, "demonstrated" most nearly means

A) protested.

B) established.

C) performed.

D) argued.

50

Based on the passage, what potential criticism might be made of Volkov's testing of Hodick and Sievers's model?

A) Volkov's understanding of Hodick and Sievers's model was incorrect.

B) Volkov's measurements did not corroborate a central element of Hodick and Sievers's model.

C) Volkov's direct application of an electrical current would have been objectionable to Hodick and Sievers.

D) Volkov's technology was not available to Hodick and Sievers.

52

Based on the passage, in studying the Venus flytrap, Volkov and his colleagues made the most extensive use of which type of evidence?

A) Mathematical models to predict the electrical charge required to close the Venus flytrap

B) Analysis of data collected from previous researchers' work involving the Venus flytrap's response to electricity

C) Information obtained from monitoring the Venus flytrap's response to varying amounts of electrical current

D) Published theories of scientists who developed earlier models of the Venus flytrap

51

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

A) Lines 66-69 (“Alexander . . . close”)

B) Lines 69-71 (“To test . . . trap”)

C) Lines 71-74 (“This . . . increases”)

D) Lines 74-77 (“When . . . close”)

ANIS

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 and supplementary material.

Compost: Don't Waste This Waste

Over the past generation, people in many parts of the United States have become accustomed to dividing their household waste products into different categories for recycling. **1** Regardless, paper may go in one container, glass and aluminum in another, regular garbage in a third. Recently, some US cities have added a new category: compost, organic matter such as food scraps and yard debris. Like paper or glass recycling, composting demands a certain amount of effort from the

1

A) NO CHANGE
B) However,
C) Furthermore,
D) For example,

public in order to be successful. But the inconveniences of composting are far outweighed by its benefits.

Most people think of banana peels, eggshells, and dead leaves as "waste," but compost is actually a valuable resource with multiple practical uses. When utilized as a garden fertilizer, compost provides nutrients to soil and improves plant growth while deterring or killing pests and preventing some plant diseases. It also enhances soil texture, encouraging healthy roots and minimizing or **2** annihilating the need for chemical fertilizers. Better than soil at holding moisture, compost minimizes water waste and storm runoff, **3** it increases savings on watering costs, and helps reduce erosion on embankments near bodies of water. In large **4** quantities, which one would expect to see when it is collected for an entire municipality), compost can be converted into a natural gas that can be used as fuel for transportation or heating and cooling systems.

2

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

A) NO CHANGE
B) eliminating
C) ousting
D) closing the door on

3

A) NO CHANGE
B) savings increase
C) increases savings
D) also it increases savings

4

A) NO CHANGE
B) quantities (which
C) quantities which
D) quantities; (which

In spite of all compost's potential uses, however, most of this so-called waste is wasted. According to the Environmental Protection Agency (EPA), over **5** 13 million tons of metal ended up in US landfills in 2009, along with over 13 million tons of yard debris. Remarkably, **6** less glass was discarded in landfills in that year than any other substance, including plastics or paper. Even **7** worse, then the squandering of this useful resource is the fact that compost in landfills cannot break down due to the lack of necessary air and moisture.

5

The writer wants to include information from the graph that is consistent with the description of compost in the passage. Which choice most effectively accomplishes this goal?

A) NO CHANGE
B) 6 million tons of rubber and leather
C) 10 million tons of textiles
D) 33 million tons of food waste

6

The writer wants to support the paragraph's main idea with accurate, relevant information from the graph. Which choice most effectively accomplishes this goal?

A) NO CHANGE
B) more metal
C) more food waste
D) more yard waste

7

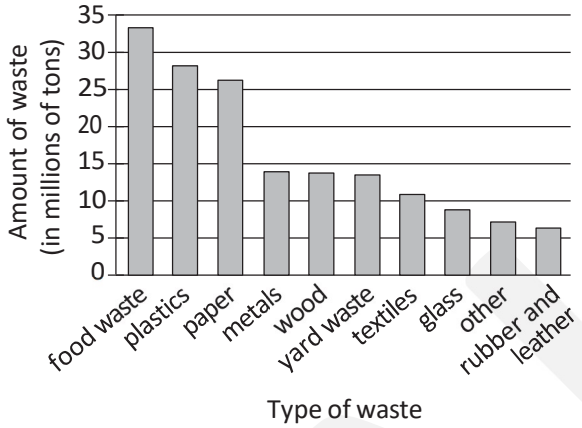
A) NO CHANGE
B) worse than
C) worse then
D) worse, than

As a result, organic material that is sent to landfills

8 contribute to the release of methane, a very

9 potent greenhouse gas.

EPA Estimates of Municipal Solid Waste Discarded in US Landfills in 2009



Adapted from Food Waste Disposal. ©n.d. by Food Waste Disposal, LLC.

8

A) NO CHANGE
B) are contributing
C) contributes
D) have contributed

9

A) NO CHANGE
B) sturdy
C) influential
D) commanding

10 While composting can sometimes lead to accidental pollution through the release of methane gas, cities such as San Francisco and Seattle have instituted mandatory composting laws requiring individuals and businesses to use separate bins for compostable waste. This strict approach may not work everywhere. However, given the clear benefits of composting and the environmental costs of not composting, all municipalities should encourage their residents either to create their own compost piles for use in backyard gardens **11** or to dispose of compostable materials in bins for collection.

10

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

A) NO CHANGE
B) Though government regulations vary,
C) Armed with these facts,
D) Mindful of this setback,

11

A) NO CHANGE
B) nor
C) but
D) and

Questions 12-22 are based on the following passage.

A Lion's Share of Luck

It's the beginning of February, and as they do every year, thousands of people line H Street, the heart of Chinatown in Washington, DC. The crowd has gathered to celebrate Lunar New Year. The street is a sea of **12** red. Red is the traditional Chinese color of luck and happiness. Buildings are **13** draped with festive, red, banners, and garlands. Lampposts are strung with crimson paper lanterns, which bob in the crisp winter breeze. The eager spectators await the highlight of the New Year parade: the lion dance.

Experts agree that the lion dance originated in the Han dynasty (206 BCE–220 CE); however, there is little agreement about the dance's original purpose. Some evidence suggests that the earliest version of the dance was an attempt to ward off an evil spirit; **14** lions are obviously very fierce. Another theory is that an emperor, upon waking from a dream about a lion, hired an artist to

12

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

A) red,
B) red; in addition, red is
C) red; in other words, red is
D) red, the color; that is

13

A) NO CHANGE
B) draped, with festive red banners,
C) draped with festive red banners—
D) draped with festive red banners

14

Which choice most effectively completes the explanation of a possible origin of the lion dance?

A) NO CHANGE
B) the evil spirit was called Nian.
C) villagers dressed in lion costumes to scare the spirit away.
D) the precise location of the village remains lost to history.

choreograph the dance. **15** The current function of the dance is celebration.

The lion dance requires the strength, grace, and coordination of two dancers, **16** both of whom are almost completely hidden by the elaborate bamboo and papier-mâché lion costume that they maneuver. One person operates the lion's head as the other guides the torso and tail. Many of the moves in the dance, such as jumps, rolls, and kicks, are similar to **17** martial arts and acrobatics. The dancers must be synchronized with the music accompanying the dance—drums, cymbals, and gongs that supply the lion's roar—as well as with each other.

15

Which choice most effectively concludes the paragraph?

A) NO CHANGE
B) It turns out that the origins of the lion dance are irrelevant.
C) Whatever its origins, today the lion dance is a joyous spectacle, a celebration of the promise of the New Year.
D) Things are different these days, of course.

16

A) NO CHANGE
B) of which both
C) both of them
D) both

17

A) NO CHANGE
B) the disciplines of martial arts and acrobatics.
C) martial artists and acrobats.
D) those in martial arts and acrobatics.

[1] While there are many regional variations of the lion dance costume, all make extensive use of symbols and colors. [2] The lion's head is often adorned with a phoenix **18** (a mythical bird) or a tortoise (for longevity). [3] Green lions encourage friendliness. [4] Golden and red lions represent liveliness and bravery, respectively. [5] Their older counterparts, yellow and white lions, dance more slowly and deliberately. [6] In some variations, lions of different colors are different ages, and they move accordingly. [7] Black lions are the youngest; therefore, they dance quickly and playfully. [8] The appearance of the lions varies, but their message is consistent: Happy New Year. **19**

18

Which choice provides information that is most consistent in style and content with the information about the symbolism of the tortoise?

A) NO CHANGE
B) (for new beginnings)
C) (from Chinese mythology)
D) (for symbolic reasons)

19

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

A) where it is now.
B) after sentence 1.
C) after sentence 3.
D) after sentence 7.

As the parade winds its way through Chinatown, the music crescendos, and the lion dance reaches **20** it's climax with the "plucking of the greens." Approaching a doorway in which dangles a red envelope filled with green paper money, the **21** lion's teeth snare the envelope. It then chews up the bills and spits out the **22** money-filled envelope instead of chewing it up. The crowd cheers for the lion dancers and for the prosperity and good fortune their dance foretells.

20

A) NO CHANGE
B) its
C) there
D) their

21

A) NO CHANGE
B) lion snares the envelope with its teeth.
C) envelope is snared by the lion with its teeth.
D) teeth of the lion snare the envelope.

22

A) NO CHANGE
B) envelope that had been dangling from the doorway.
C) envelope that had the money in it.
D) envelope.

Questions 23-33 are based on the following passage.

Court Reporting: Humans v. Machines

Court reporters for years have been the record keepers of the court, taking 23 scrupulous notes during 24 hearings; depositions, and other legal proceedings. Despite the increasing use of digital recording technologies, court reporters still play a vital role in

23

Which choice best fits with the tone of the rest of the passage?

A) NO CHANGE
B) super-rigorous
C) spot-on
D) intense

24

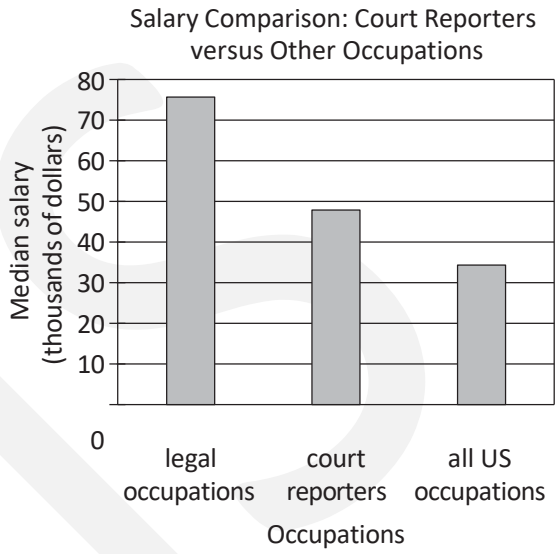
A) NO CHANGE
B) hearings; depositions;
C) hearings, depositions,
D) hearings, depositions;

courtrooms. **25** Although machines can easily make digital audio recordings of court events, they lack the nuance of human court reporters in providing a precise record.

[1] Court reporters record the spoken word in real time, most commonly using the technique of stenography. [2] A stenotype machine allows a person to type about 200 words per minute (the speed of speech is about 180 words per minute). [3] The typed words are instantaneously translated onto a computer screen for the judge to view, and the transcript is used later by people who want to review the case, such as journalists and lawyers. [4] Digital audio recording is becoming increasingly popular in courtrooms across the United States, with six states using solely audio recordings for

25

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



Adapted from Bureau of Labor Statistics, US Department of Labor, *Occupational Outlook Handbook, 2014-15 Edition*.

Should the writer make this addition here?

A) Yes, because it supports the claim that court reporting is an important part of a trial.

B) Yes, because it offers a relevant counterpoint to the argument that the use of digital recorders is on the rise.

C) No, because it presents information that is not directly related to the paragraph's discussion of the role of court reporters.

D) No, because it does not provide information about the pay scale for more experienced court reporters.

general jurisdiction sessions. [5] Proponents of going digital say that technology is the easiest way to get the most accurate record of the proceedings, as the machine records everything faithfully as it occurs and is not **26** subject to human errors such as mishearing or mistyping. [6] However, with the rise of high-quality recording technology, reliance on court reporters **27** as a record keeper is decreasing. **28**

26

A) NO CHANGE
B) subjected to
C) subjected from
D) subject for

27

A) NO CHANGE
B) each as record keepers
C) as record keepers
D) to be a record keeper

28

To make this paragraph most logical, sentence 6 should be placed

A) where it is now.
B) after sentence 1.
C) after sentence 3.
D) after sentence 4.

Champions of court reporting, though, argue the **29** opposite. They argue that with the increased reliance on technology, errors actually increase. Because digital systems record **30** indiscriminately; they cannot discern important parts of the proceedings from other noises in the courtroom. **31** Despite this, a digital device does indeed record everything, but that includes loud noises, such as a book dropping, that can make the actual words spoken impossible to hear. A court reporter, however,

29

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

A) opposite, such
B) opposite—
C) opposite, which is
D) opposite; their opinion is

30

A) NO CHANGE
B) indiscriminately, they
C) indiscriminately. They
D) indiscriminately, therefore they

31

A) NO CHANGE
B) In other words,
C) Therefore,
D) Consequently,

can distinguish between the words **32** and distinguish between the extrinsic noises that need not be recorded. Also, if a witness mumbles, a human court reporter can pause court proceedings to ask the witness to repeat what he or she said. In some cases, digital recording **33** makes it necessary for the judge to make additional announcements at the beginning of a trial. Increasing use of technology is "a transition from accurate records to adequate records," says Bob Tate, president of the Certified Court Reporters Association of New Jersey.

Despite the apparent benefits of using digital recording systems in courtrooms, there is still a need for the human touch in legal proceedings. At least for the foreseeable future, machines simply cannot replicate the invaluable clarification skills and adaptability of human court reporters.

32

A) NO CHANGE
B) also between the
C) and when there are
D) and the

33

Which choice provides the best supporting example for the main idea of the paragraph?

A) NO CHANGE
B) requires a courtroom monitor to ensure the equipment is functioning properly.
C) leads to changes in the roles and duties of several members of the courtroom staff.
D) has led to the need for retrial because of indistinct testimony from key witnesses.

Questions 34-44 are based on the following passage.

Fire in Space

On Earth, fire provides light, heat, and comfort. Its creation, by a process called combustion, requires a chemical reaction between a fuel source and oxygen. The shape that fire assumes on Earth is a result of gravitational influence and the movement of molecules. In the microgravity environment of space, **34** moreover, combustion and the resulting fire behave in fundamentally different ways than they do on Earth—differences that have important implications for researchers.

A group of engineering students from the University of California at San Diego (UCSD), for example, **35** tried to find a method to make their biofuel combustion study (fuels derived from once-living material) free of the drawbacks researchers face on Earth. The standard method involves burning droplets of fuel, but Earth's gravitational influence causes the droplets to lose

34

A) NO CHANGE
B) however,
C) accordingly,
D) subsequently,

35

A) NO CHANGE
B) strove for a method to make their study of biofuel combustion
C) looked for a method to study biofuel combustion
D) sought a method to study combustion of biofuels

spherical symmetry while burning. This **36** deformation results in subtle variations in density that both **37** causes uneven heat flow and limits the size of the droplets that can be tested. Specially designed "drop towers" **38** built for this purpose reduce these problems, but they provide no more than 10 seconds of microgravity, and droplet size is still too small to produce accurate models of combustion rates. **39** The UCSD students understood that these limitations had to be surmounted. As part of the program, researchers fly their experiments aboard aircraft that simulate the microgravity environment of space. The aircraft accomplish this feat by flying in parabolic paths instead of horizontal ones. On the plane's ascent, passengers feel twice Earth's gravitational pull, but for brief periods at the peak of the trajectory,

36

Which choice provides the most precise description of the phenomenon depicted in the previous sentence?

A) NO CHANGE
B) alteration
C) transformation
D) modification

37

A) NO CHANGE
B) cause uneven heat flow and limit
C) cause uneven heat flow and limits
D) has caused uneven heat flow and has limited

38

A) NO CHANGE
B) intended for this use
C) constructed for this function
D) DELETE the underlined portion.

39

Which choice provides the most effective transition between ideas in the paragraph?

A) NO CHANGE
B) The UCSD group sought to overcome these difficulties by participating in NASA's Microgravity University program.
C) The engineering group realized that aircraft might be the tools they were looking for.
D) Thus, for the UCSD group, drop towers were not an adequate solution.

40 "weightlessness" or microgravity similar to what is experienced in space, is achieved.

These flights allowed the UCSD students to experience microgravity **41** . Specifically, they **42** investigated the combustion of biofuel droplets in microgravity for twice as long as could be accomplished

40

A) NO CHANGE
B) "weightlessness" or microgravity, similar to what is experienced, in space
C) "weightlessness" or, microgravity, similar to what is experienced in space
D) "weightlessness," or microgravity similar to what is experienced in space,

41

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

and perform their experiment without traveling into space

Should the writer make this addition here?

A) Yes, because it elaborates on the advantage the students gained from the flights.
B) Yes, because it reveals that the students did not actually go into space, a point that the previous paragraph does not address.
C) No, because it shifts focus away from the students' experiences while on the flights.
D) No, because it restates what has already been said in the sentence.

42

A) NO CHANGE
B) could investigate
C) were investigating
D) were able to investigate

in drop towers and to perform tests with larger droplets. The larger, **43** spherically symmetric droplets burned longer and gave the students more reliable data on combustion rates of biofuels because the droplets' uniform shape reduced the variations in density that hinder tests performed in normal gravity. The students hope the new data will aid future research by improving theoretical models of biofuel combustion. Better combustion-rate models may even lead to the production of more fuel-efficient engines and improved **44** techniques, for fighting fires in space or at future outposts on the Moon and Mars.

43

Which choice most effectively establishes that the UCSD students' approach had solved a problem, mentioned earlier in the passage, relating to burning fuel on Earth?

A) NO CHANGE
B) combustible
C) microgravity-influenced
D) biofuel-derived

44

A) NO CHANGE
B) techniques for fighting fires, in space or at future outposts
C) techniques for fighting fires in space or at future outposts
D) techniques for fighting fires in space, or at future outposts,

SAT® Practice Test 6

ANIS

Test begins on the next page.

ANIS

Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

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

Questions 1-10 are based on the following passage.

This passage is adapted from William Maxwell, *The Folded Leaf*. ©1959 by William Maxwell. Originally published in 1945.

The Alcazar Restaurant was on Sheridan Road near Devon Avenue. It was long and narrow, with tables for two along the walls and tables for four down the middle. The decoration was *art moderne*, except for the series of murals depicting the four seasons, and the sick ferns in the front window. Lymie sat down at the second table from the cash register, and ordered his dinner. The history book, which he propped against the catsup and the glass sugar bowl, had been used by others before him. Blank pages front and back were filled in with maps, drawings, dates, comic cartoons, and organs of the body; also with names and messages no longer clear and never absolutely legible. On nearly every other page there was some marginal notation, either in ink or in very hard pencil. And unless someone had upset a glass of water, the marks on page 177 were from tears.

While Lymie read about the Peace of Paris, signed on the thirtieth of May, 1814, between France and the Allied powers, his right hand managed again and again to bring food up to his mouth. Sometimes he chewed, sometimes he swallowed whole the food that he had no idea he was eating. The Congress of Vienna met, with some allowance for delays, early in November of the same year, and all the powers engaged in the war on either side sent plenipotentiaries. It was by far the most splendid and important assembly ever convoked to discuss and determine the affairs of Europe. The Emperor of Russia, the King of Prussia, the Kings of Bavaria, Denmark, and Wurttemberg, all were present in person at the court of the Emperor Francis I in the Austrian capital. When Lymie put down his fork and began to count them off, one by one, on the fingers of his left hand, the waitress, whose name was Irma, thought he was through eating and tried to take his plate away. He stopped her. Prince Metternich (his right thumb) presided over the Congress, and Prince Talleyrand (the index finger) represented France.

A party of four, two men and two women, came into the restaurant, all talking at once, and took possession of the center table nearest Lymie. The women had shingled hair and short tight skirts which exposed the underside of their knees when they sat down. One of the women had the face of a young boy but disguised by one trick or another (rouge, lipstick, powder, wet bangs plastered against the high forehead, and a pair of long pendent earrings) to look like a woman of thirty-five, which as a matter of fact she was. The men were older. They laughed more than there seemed any occasion for, while they were deciding between soup and shrimp cocktail, and their laughter was too loud. But it was the women's voices, the terrible not quite sober pitch of the women's voices which caused Lymie to skim over two whole pages without knowing what was on them. Fortunately he realized this and went back. Otherwise he might never have known about the

secret treaty concluded between England, France, and Austria, when the pretensions of Prussia and Russia, acting in concert, seemed to threaten a renewal of the attack. The results of the Congress were stated clearly at the bottom of page 67 and at the top of page 68, but before Lymie got halfway through them, a coat that he recognized as his father's was hung on the hook next to his chair. Lymie closed the book and said, "I didn't think you were coming."

Time is probably no more unkind to sporting characters than it is to other people, but physical decay unsustained by respectability is somehow more noticeable. Mr. Peters' hair was turning gray and his scalp showed through on top. He had lost weight also; he no longer filled out his clothes the way he used to. His color was poor, and the flower had disappeared from his buttonhole. In its place was an American Legion button.

Apparently he himself was not aware that there had been any change. He straightened his tie self-consciously and when Irma handed him a menu, he gestured with it so that the two women at the next table would notice the diamond ring on the fourth finger of his right hand. Both of these things, and also the fact that his hands showed signs of the manicurist, one can blame on the young man who had his picture taken with a derby hat on the back of his head, and also sitting with a girl in the curve of the moon. The young man had never for one second deserted Mr. Peters. He was always there, tugging at Mr. Peters' elbow, making him do things that were not becoming in a man of forty-five.

1

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

A) Lymie's inner thoughts to observations made by the other characters.

B) an exchange between strangers to a satisfying personal relationship.

C) the physical setting of the scene to the different characters' personality traits.

D) Lymie's experience reading a book to descriptions of people in the restaurant.

2

The main purpose of the first paragraph is to

A) introduce the passage's main character by showing his nightly habits.

B) indicate the date the passage takes place by presenting period details.

C) convey the passage's setting by describing a place and an object.

D) foreshadow an event that is described in detail later in the passage.

3

It can reasonably be inferred that Irma, the waitress, thinks Lymie is "through eating" (line 37) because

A) he has begun reading his book.

B) his plate is empty.

C) he is no longer holding his fork.

D) he has asked her to clear the table.

4

Lymie's primary impression of the "party of four" (line 42) is that they

A) are noisy and distracting.

B) are a refreshing change from the other customers.

C) resemble characters from his history book.

D) represent glamour and youth.

5

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

A) Lines 45-47 ("The women . . . down")

B) Lines 47-52 ("One . . . was")

C) Lines 55-59 ("But . . . them")

D) Line 69 ("Lymie . . . book")

6

The narrator indicates that Lymie finally closes the history book because

A) his father has joined him at the table.

B) the people at the other table are too disruptive.

C) he has finished the chapter about the Congress.

D) he is preparing to leave the restaurant.

7

The primary impression created by the narrator's description of Mr. Peters in lines 74-79 is that he is

A) healthy and fit.

B) angry and menacing.

C) nervous and hesitant.

D) aging and shriveled.

8

The main idea of the last paragraph is that Mr. Peters

A) neglects to spend any time with his family members.

B) behaves as if he is a younger version of himself.

C) is very conscious of symbols of wealth and power.

D) is preoccupied with the knowledge that he is growing old.

ANIS

9

Which choice best supports the conclusion that Mr. Peters wants to attract attention?

A) Lines 80-81 (“Apparently . . . change”)
B) Lines 81-85 (“He straightened . . . hand”)
C) Lines 90-91 (“The young . . . Mr. Peters”)
D) Lines 91-93 (“He was . . . forty-five”)

10

As used in line 93, “becoming” most nearly means

A) emerging.
B) fitting.
C) developing.
D) happening.

ANIS

Questions 11-21 are based on the following passages.

Passage 1 is adapted from Catharine Beecher, *Essay on Slavery and Abolitionism*. Originally published in 1837. Passage 2 is adapted from Angelina E. Grimké, *Letters to Catharine Beecher*. Originally published in 1838. Grimké encouraged Southern women to oppose slavery publicly. Passage 1 is Beecher's response to Grimké's views. Passage 2 is Grimké's response to Beecher.

Passage 1

Heaven has appointed to one sex the superior, and to the other the subordinate station, and this without any reference to the character or conduct of either. It is therefore as much for the dignity as it is for the interest of females, in all respects to conform to the duties of this relation ....But while woman holds a subordinate relation in society to the other sex, it is not because it was designed that her duties or her influence should be any the less important, or all-pervading. But it was designed that the mode of gaining influence and of exercising power should be altogether different and peculiar. . . .

A man may act on society by the collision of intellect, in public debate; he may urge his measures by a sense of shame, by fear and by personal interest; he may coerce by the combination of public sentiment; he may drive by physical force, and he does not outstep the boundaries of his sphere. But all the power, and all the conquests that are lawful to woman, are those only which appeal to the kindly, generous, peaceful and benevolent principles.

Woman is to win every thing by peace and love; by making herself so much respected, esteemed and loved, that to yield to her opinions and to gratify her wishes, will be the free-will offering of the heart. But this is to be all accomplished in the domestic and social circle. There let every woman become so cultivated and refined in intellect, that her taste and judgment will be respected; so benevolent in feeling and action; that her motives will be reverenced;—so unassuming and unambitious, that collision and competition will be banished;—so "gentle and easy to be entreated," as that every heart will repose in her presence; then, the fathers, the husbands, and the sons, will find an influence thrown around them, to which they will yield not only willingly but proudly. . . .

A woman may seek the aid of co-operation and combination among her own sex, to assist her in her appropriate offices of piety, charity, maternal and domestic duty; but whatever, in any measure, throws a woman into the attitude of a combatant, either for herself or others—whatever binds her in a party conflict—whatever obliges her in any way to exert coercive influences, throws her out of her appropriate sphere. If these general principles are correct, they are entirely opposed to the plan of arraying females in any Abolition movement.

Passage 2

The investigation of the rights of the slave has led me to a better understanding of my own. I have found the Anti-Slavery cause to be the high school of morals in our land—the school in which *human rights* are more fully investigated, and better understood and taught, than in any other. Here a great fundamental principle is uplifted and illuminated, and from this central light, rays innumerable stream all around.

Human beings have *rights*, because they are *moral* beings: the rights of *all* men grow out of their moral nature; and as all men have the same moral nature, they have essentially the same rights. These rights may be wrested from the slave, but they cannot be alienated: his title to himself is as perfect now, as is that of Lyman Beecher:[1] it is stamped on his moral being, and is, like it, imperishable. Now if rights are founded in the nature of our moral being, then the *mere circumstance of sex* does not give to man higher rights and responsibilities, than to woman. To suppose that it does, would be to deny the self-evident truth, that the "physical constitution is the mere instrument of the moral nature." To suppose that it does, would be to break up utterly the relations, of the two natures, and to reverse their functions, exalting the animal nature into a monarch, and humbling the moral into a slave; making the former a proprietor, and the latter its property.

When human beings are regarded as *moral* beings, *sex*, instead of being enthroned upon the summit, administering upon rights and responsibilities, sinks into insignificance and nothingness. My doctrine then is, that whatever it is morally right for man to do, it is morally right for woman to do. Our duties originate, not from difference of sex, but from the diversity of our relations in life, the various gifts and talents committed to our care, and the different eras in which we live.

[1] Lyman Beecher was a famous minister and the father of Catharine Beecher.

11

In Passage 1, Beecher makes which point about the status of women relative to that of men?

A) Women depend on men for their safety and security, but men are largely independent of women.

B) Women are inferior to men, but women play a role as significant as that played by men.

C) Women have fewer rights than men do, but women also have fewer responsibilities.

D) Women are superior to men, but tradition requires women to obey men.

12

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

A) Lines 6-10 ("But . . . all-pervading")

B) Lines 13-14 ("A man . . . debate")

C) Lines 16-18 ("he may coerce . . . sphere")

D) Lines 41-46 ("but whatever . . . sphere")

13

In Passage 1, Beecher implies that women's effect on public life is largely

A) overlooked, because few men are interested in women's thoughts about politics.

B) indirect, because women exert their influence within the home and family life.

C) unnecessary, because men are able to govern society themselves.

D) symbolic, because women tend to be more idealistic about politics than men are.

14

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

A) region.

B) studio.

C) district.

D) rank.

15

As used in line 12, "peculiar" most nearly means

A) eccentric.

B) surprising.

C) distinctive.

D) infrequent.

16

What is Grimké's central claim in Passage 2?

A) The rights of individuals are not determined by race or gender.

B) Men and women must learn to work together to improve society.

C) Moral rights are the most important distinction between human beings and animals.

D) Men and women should have equal opportunities to flourish.

17

In Passage 2, Grimké makes which point about human rights?

A) They are viewed differently in various cultures around the world.

B) They retain their moral authority regardless of whether they are recognized by law.

C) They are sometimes at odds with moral responsibilities.

D) They have become more advanced and refined throughout history.

18

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

A) Lines 58-61 ("Human . . . same rights")

B) Lines 61-65 ("These . . . imperishable")

C) Lines 71-76 ("To suppose . . . property")

D) Lines 77-81 ("When . . . nothingness")

19

Which choice best states the relationship between the two passages?

A) Passage 2 illustrates the practical difficulties of a proposal made in Passage 1.

B) Passage 2 takes issue with the primary argument of Passage 1.

C) Passage 2 provides a historical context for the perspective offered in Passage 1.

D) Passage 2 elaborates upon several ideas implied in Passage 1.

20

Based on the passages, both authors would agree with which of the following claims?

A) Women have moral duties and responsibilities.

B) Men often work selflessly for political change.

C) The ethical obligations of women are often undervalued.

D) Political activism is as important for women as it is for men.

21

Beecher would most likely have reacted to lines 65-68 ("Now . . . woman") of Passage 2 with

A) sympathy, because she feels that human beings owe each other a debt to work together in the world.

B) agreement, because she feels that human responsibilities are a natural product of human rights.

C) dismay, because she feels that women actually have a more difficult role to play in society than men do.

D) disagreement, because she feels that the natures of men and women are fundamentally different.

Questions 22-31 are based on the following passage and supplementary material.

This passage is adapted from Bryan Walsh, "Whole Food Blues: Why Organic Agriculture May Not Be So Sustainable." ©2012 by Time Inc.

When it comes to energy, everyone loves efficiency. Cutting energy waste is one of those goals that both sides of the political divide can agree on, even if they sometimes diverge on how best to get there. Energy efficiency allows us to get more out of our given resources, which is good for the economy and (mostly) good for the environment as well. In an increasingly hot and crowded world, the only sustainable way to live is to get more out of less. Every environmentalist would agree.

But change the conversation to food, and suddenly efficiency doesn't look so good. Conventional industrial agriculture has become incredibly efficient on a simple land to food basis. Thanks to fertilizers, mechanization and irrigation, each American farmer feeds over 155 people worldwide. Conventional farming gets more and more crop per square foot of cultivated land—over 170 bushels of corn per acre in Iowa, for example—which can mean less territory needs to be converted from wilderness to farmland. And since a third of the planet is already used for agriculture—destroying forests and other wild habitats along the way—anything that could help us produce more food on less land would seem to be good for the environment.

Of course, that's not how most environmentalists regard their arugula [a leafy green]. They have embraced organic food as better for the planet—and healthier and tastier, too—than the stuff produced by agricultural corporations. Environmentalists disdain the enormous amounts of energy needed and waste created by conventional farming, while organic practices—forgoing artificial fertilizers and chemical pesticides—are considered far more sustainable. Sales of organic food rose 7.7% in 2010, up to $26.7 billion—and people are making those purchases for their consciences as much as their taste buds.

Yet a new meta-analysis in *Nature* does the math and comes to a hard conclusion: organic farming yields 25% fewer crops on average than conventional agriculture. More land is therefore needed to produce fewer crops—and that means organic farming may not be as good for the planet as we think.

In the *Nature* analysis, scientists from McGill University in Montreal and the University of Minnesota performed an analysis of 66 studies comparing conventional and organic methods across 34 different crop species, from fruits to grains to legumes. They found that organic farming delivered a lower yield for every crop type, though the disparity varied widely. For rain-watered legume crops like beans or perennial crops like fruit trees, organic trailed conventional agriculture by just 5%. Yet for major cereal crops like corn or wheat, as well as most vegetables—all of which provide the bulk of the world's calories—conventional agriculture outperformed organics by more than 25%.

The main difference is nitrogen, the chemical key to plant growth. Conventional agriculture makes use of 171 million metric tons of synthetic fertilizer each year, and all that nitrogen enables much faster plant growth than the slower release of nitrogen from the compost or cover crops used in organic farming. When we talk about a Green Revolution, we really mean a nitrogen revolution—along with a lot of water.

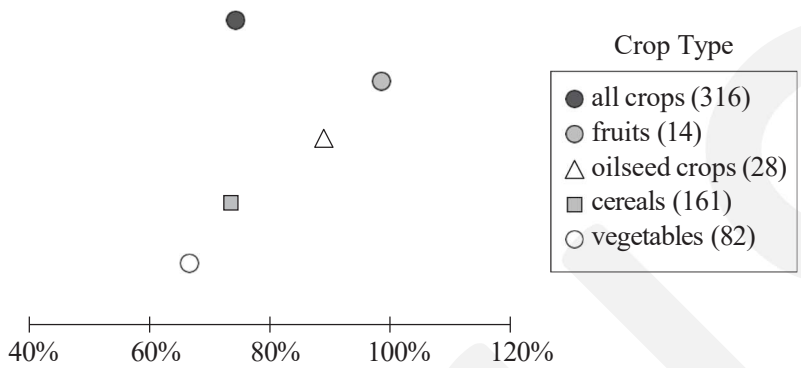
But not all the nitrogen used in conventional fertilizer ends up in crops—much of it ends up running off the soil and into the oceans, creating vast polluted dead zones. We're already putting more nitrogen into the soil than the planet can stand over the long term. And conventional agriculture also depends heavily on chemical pesticides, which can have unintended side effects.

What that means is that while conventional agriculture is more efficient—sometimes much more efficient—than organic farming, there are trade-offs with each. So an ideal global agriculture system, in the views of the study's authors, may borrow the best from both systems, as Jonathan Foley of the University of Minnesota explained:

> The bottom line? Today's organic farming practices are probably best deployed in fruit and vegetable farms, where growing nutrition (not just bulk calories) is the primary goal. But for delivering sheer calories, especially in our staple crops of wheat, rice, maize, soybeans and so on, conventional farms have the advantage right now.
>
> Looking forward, I think we will need to deploy different kinds of practices (especially new, mixed approaches that take the best of organic and conventional farming systems) where they are best suited—geographically, economically, socially, etc.

Figure 1

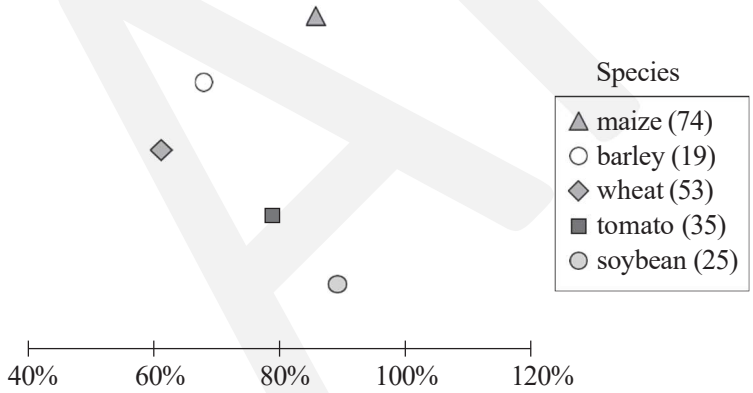
Organic Yield as a Percentage of Conventional Yield, by Crop Type



At 100%, the organic yield is the same as the conventional yield. The number of observations for each crop type is shown in parentheses.

Figure 2

Organic Yield as a Percentage of Conventional Yield, by Species



At 100%, the organic yield is the same as the conventional yield. The number of observations for each species is shown in parentheses.

Figures adapted from Verena Seufert, Navin Ramankutty, and Jonathan A. Foley, "Comparing the Yields of Organic and Conventional Agriculture." ©2012 by Nature Publishing Group.

22

As used in line 14, “simple” most nearly means

A) straightforward.

B) modest.

C) unadorned.

D) easy.

23

According to the passage, a significant attribute of conventional agriculture is its ability to

A) produce a wide variety of fruits and vegetables.

B) maximize the output of cultivated land.

C) satisfy the dietary needs of the world’s population.

D) lessen the necessity of nitrogen in plant growth.

24

Which choice best reflects the perspective of the “environmentalists” (line 27) on conventional agriculture?

A) It produces inferior fruits and vegetables and is detrimental to the environment.

B) It is energy efficient and reduces the need to convert wilderness to farmland.

C) It is good for the environment only in the short run.

D) It depletes critical resources but protects wildlife habitats.

25

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

A) Lines 27-28 (“Of course . . . green”)

B) Lines 28-31 (“They . . . corporations”)

C) Lines 31-35 (“Environmentalists . . . sustainable”)

D) Lines 42-45 (“More . . . think”)

26

Which statement best expresses a relationship between organic farming and conventional farming that is presented in the passage?

A) Both are equally sustainable, but they differ dramatically in the amount of land they require to produce equivalent yields.

B) Both rely on artificial chemicals for pest control, but organic farmers use the chemicals sparingly in conjunction with natural remedies.

C) Both use nitrogen to encourage plant growth, but the nitrogen used in conventional farming comes from synthetic sources.

D) Both create a substantial amount of nitrogen runoff, but only the type of nitrogen found in fertilizers used in conventional farming can be dangerous.

27

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

A) Lines 13-14 ("Conventional . . . basis")

B) Lines 22-26 ("And since . . . environment")

C) Lines 51-53 ("They . . . widely")

D) Lines 61-65 ("Conventional . . . farming")

28

According to Foley, an "ideal global agriculture system" (line 80)

A) focuses primarily on yield percentages and global markets.

B) considers multiple factors in the selection of farming techniques.

C) weighs the economic interests of farmers against the needs of consumers.

D) puts the nutritional value of produce first and foremost.

29

In line 88, "sheer" most nearly means

A) transparent.

B) abrupt.

C) steep.

D) pure.

30

Which statement is best supported by the information provided in figure 1?

A) The organic yield as a percentage of conventional yield is greater for vegetables than for fruits.

B) The organic yield as a percentage of conventional yield is similar for cereals and all crops.

C) The reported number of observations for each crop type exceeds 82.

D) The organic yield as a percentage of conventional yield is greater for vegetable crops than it is for oilseed crops.

31

Which of the following claims is supported by figure 2?

A) Of the organically grown species represented, soybeans have the lowest yield.

B) The organically grown maize and barley represented are comparable in their yields to conventionally grown maize and barley.

C) Of the organically grown species represented, tomatoes have the highest yield.

D) The organically grown species represented have lower yields than their conventionally grown counterparts do.

ANIS

Questions 32-41 are based on the following passage and supplementary material.

This passage is adapted from John Bohannon, "Why You Shouldn't Trust Internet Comments." ©2013 by American Association for the Advancement of Science.

The "wisdom of crowds" has become a mantra of the Internet age. Need to choose a new vacuum cleaner? Check out the reviews on online merchant Amazon. But a new study suggests that such online scores don't always reveal the best choice. A massive controlled experiment of Web users finds that such ratings are highly susceptible to irrational "herd behavior"—and that the herd can be manipulated.

Sometimes the crowd really is wiser than you. The classic examples are guessing the weight of a bull or the number of gumballs in a jar. Your guess is probably going to be far from the mark, whereas the average of many people's choices is remarkably close to the true number.

But what happens when the goal is to judge something less tangible, such as the quality or worth of a product? According to one theory, the wisdom of the crowd still holds—measuring the aggregate of people's opinions produces a stable, reliable value. Skeptics, however, argue that people's opinions are easily swayed by those of others. So nudging a crowd early on by presenting contrary opinions—for example, exposing them to some very good or very bad attitudes—will steer the crowd in a different direction. To test which hypothesis is true, you would need to manipulate huge numbers of people, exposing them to false information and determining how it affects their opinions.

A team led by Sinan Aral, a network scientist at the Massachusetts Institute of Technology in Cambridge, did exactly that. Aral has been secretly working with a popular website that aggregates news stories. The website allows users to make comments about news stories and vote each other's comments up or down. The vote tallies are visible as a number next to each comment, and the position of the comments is chronological. (Stories on the site get an average of about ten comments and about three votes per comment.) It's a follow-up to his experiment using people's ratings of movies to measure how much individual people influence each other online (answer: a lot). This time, he wanted to know how much the crowd influences the individual, and whether it can be controlled from outside.

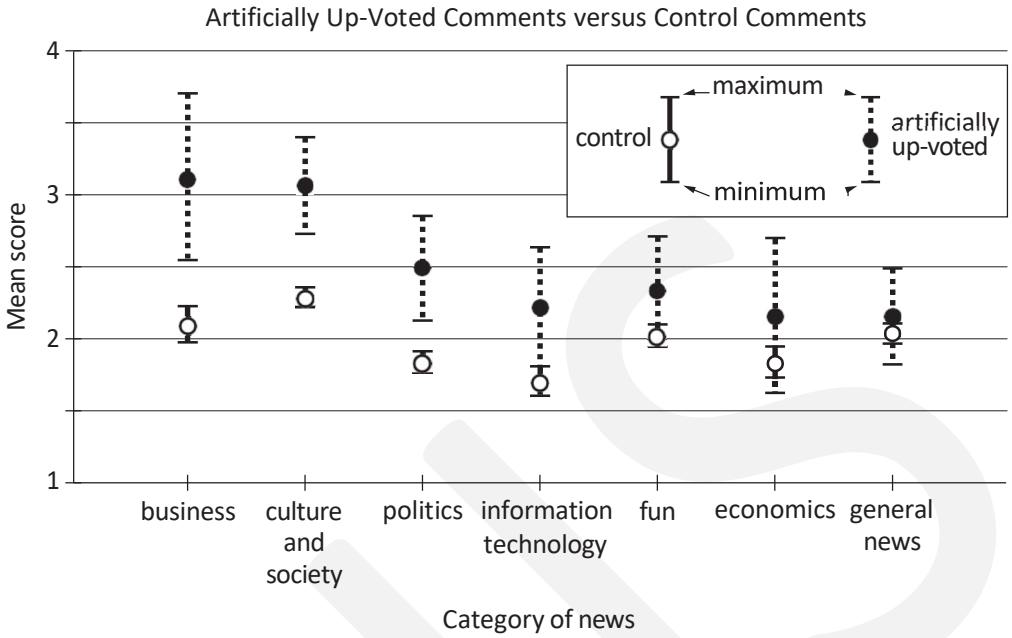
For five months, every comment submitted by a user randomly received an "up" vote (positive); a "down" vote (negative); or as a control, no vote at all. The team then observed how users rated those comments. The users generated more than 100,000 comments that were viewed more than 10 million times and rated more than 300,000 times by other users.

At least when it comes to comments on news sites, the crowd is more herdlike than wise. Comments that received fake positive votes from the researchers were 32% more likely to receive more positive votes compared with a control, the team reports. And those comments were no more likely than the control to be down-voted by the next viewer to see them. By the end of the study, positively manipulated comments got an overall boost of about 25%. However, the same did not hold true for negative manipulation. The ratings of comments that got a fake down vote were usually negated by an up vote by the next user to see them.

"Our experiment does not reveal the psychology behind people's decisions," Aral says, "but an intuitive explanation is that people are more skeptical of negative social influence. They're more willing to go along with positive opinions from other people."

Duncan Watts, a network scientist at Microsoft Research in New York City, agrees with that conclusion. "[But] one question is whether the positive [herding] bias is specific to this site" or true in general, Watts says. He points out that the category of the news items in the experiment had a strong effect on how much people could be manipulated. "I would have thought that 'business' is pretty similar to 'economics,' yet they find a much stronger effect (almost 50% stronger) for the former than the latter. What explains this difference? If we're going to apply these findings in the real world, we'll need to know the answers."

Will companies be able to boost their products by manipulating online ratings on a massive scale? "That is easier said than done," Watts says. If people detect—or learn—that comments on a website are being manipulated, the herd may spook and leave entirely.



Mean score: mean of scores for the comments in each category, with the score for each comment being determined by the number of positive votes from website users minus the number of negative votes

Adapted from Lev Muchnik, Sinan Aral, and Sean J. Taylor, "Social Influence Bias: A Randomized Experiment." ©2013 by American Association for the Advancement of Science.

32

Over the course of the passage, the main focus shifts from a discussion of an experiment and its results to

A) an explanation of the practical applications of the results.

B) a consideration of the questions prompted by the results.

C) an analysis of the defects undermining the results.

D) a conversation with a scientist who disputes the results.

33

The author of the passage suggests that crowds may be more effective at

A) creating controversy than examining an issue in depth.

B) reinforcing members' ideas than challenging those ideas.

C) arriving at accurate quantitative answers than producing valid qualitative judgments.

D) ranking others' opinions than developing genuinely original positions.

34

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

A) Line 9 (“Sometimes . . . you”)
B) Lines 11-14 (“Your . . . number”)
C) Lines 17-20 (“According . . . value”)
D) Lines 25-28 (“To test . . . opinions”)

35

Which choice best supports the view of the “skeptics” (line 20)?

A) Lines 55-58 (“Comments . . . reports”)
B) Lines 58-60 (“And . . . them”)
C) Lines 63-65 (“The ratings . . . them”)
D) Lines 76-79 (“He . . . manipulated”)

36

Which action would best address a question Watts raises about the study?

A) Providing fewer fake positive comments
B) Using multiple websites to collect ratings
C) Requiring users to register on the website before voting
D) Informing users that voting data are being analyzed

37

As used in line 85, “boost” most nearly means

A) increase.
B) accelerate.
C) promote.
D) protect.

38

As used in line 86, “scale” most nearly means

A) level.

B) wage.

C) interval.

D) scheme.

39

In the figure, which category of news has an artificially up-voted mean score of 2.5?

A) Business

B) Politics

C) Fun

D) General news

40

According to the figure, which category of news showed the smallest difference in mean score between artificially up-voted comments and control comments?

A) Culture and society

B) Information technology

C) Fun

D) General news

41

Data presented in the figure most directly support which idea from the passage?

A) The mean score of artificially down-voted comments is similar to that of the control.

B) The patterns observed in the experiment suggest that people are suspicious of negative social influence.

C) The positive bias observed in users of the news site may not apply to human behavior in other contexts.

D) The type of story being commented on has an impact on the degree to which people can be influenced.

Questions 42-52 are based on the following passage.

This passage is adapted from Joshua Foer, *Moonwalking with Einstein: The Art and Science of Remembering Everything*. ©2011 by Joshua Foer.

In 2000, a neuroscientist at University College London named Eleanor Maguire wanted to find out what effect, if any, all that driving around the labyrinthine streets of London might have on cabbies' brains. When she brought sixteen taxi drivers into her lab and examined their brains in an MRI scanner, she found one surprising and important difference. The right posterior hippocampus, a part of the brain known to be involved in spatial navigation, was 7 percent larger than normal in the cabbies—a small but very significant difference. Maguire concluded that all of that way-finding around London had physically altered the gross structure of their brains. The more years a cabbie had been on the road, the more pronounced the effect.

The brain is a mutable organ, capable—within limits—of reorganizing itself and readapting to new kinds of sensory input, a phenomenon known as neuroplasticity. It had long been thought that the adult brain was incapable of spawning new neurons—that while learning caused synapses to rearrange themselves and new links between brain cells to form, the brain's basic anatomical structure was more or less static. Maguire's study suggested the old inherited wisdom was simply not true.

After her groundbreaking study of London cabbies, Maguire decided to turn her attention to mental athletes. She teamed up with Elizabeth Valentine and John Wilding, authors of the academic monograph *Superior Memory*, to study ten individuals who had finished near the top of the World Memory Championship. They wanted to find out if the memorizers' brains were—like the London cabbies'—structurally different from the rest of ours, or if they were somehow just making better use of memory abilities that we all possess.

The researchers put both the mental athletes and a group of matched control subjects into MRI scanners and asked them to memorize three-digit numbers, black-and-white photographs of people's faces, and magnified images of snowflakes, while their brains were being scanned. Maguire and her team thought it was possible that they might discover anatomical differences in the brains of the memory champs, evidence that their brains had somehow reorganized themselves in the process of doing all that intensive remembering. But when the researchers reviewed the imaging data, not a single significant structural difference turned up. The brains of the mental athletes appeared to be indistinguishable from those of the control subjects. What's more, on every single test of general cognitive ability, the mental athletes' scores came back well within the normal range. The memory champs weren't smarter, and they didn't have special brains.

But there was one telling difference between the brains of the mental athletes and the control subjects: When the researchers looked at which parts of the brain were lighting up when the mental athletes were memorizing, they found that they were activating entirely different circuitry. According to the functional MRIs [fMRIs], regions of the brain that were less active in the control subjects seemed to be working in overdrive for the mental athletes.

Surprisingly, when the mental athletes were learning new information, they were engaging several regions of the brain known to be involved in two specific tasks: visual memory and spatial navigation, including the same right posterior hippocampal region that the London cabbies had enlarged with all their daily way-finding. At first glance, this wouldn't seem to make any sense. Why would mental athletes be conjuring images in their mind's eye when they were trying to learn three-digit numbers? Why should they be navigating like London cabbies when they're supposed to be remembering the shapes of snowflakes?

Maguire and her team asked the mental athletes to describe exactly what was going through their minds as they memorized. The mental athletes said they were consciously converting the information they were being asked to memorize into images, and distributing those images along familiar spatial journeys. They weren't doing this automatically, or because it was an inborn talent they'd nurtured since childhood. Rather, the unexpected patterns of neural activity that Maguire's fMRIs turned up were the result of training and practice.

42

According to the passage, Maguire's findings regarding taxi drivers are significant because they

A) demonstrate the validity of a new method.
B) provide evidence for a popular viewpoint.
C) call into question an earlier consensus.
D) challenge the authenticity of previous data.

43

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

A) Lines 8-12 ("The right . . . difference")
B) Lines 12-16 ("Maguire . . . effect")
C) Lines 17-20 ("The brain . . . neuroplasticity")
D) Lines 20-26 ("It had . . . true")

44

As used in line 24, "basic" most nearly means

A) initial.
B) simple.
C) necessary.
D) fundamental.

45

Which question was Maguire's study of mental athletes primarily intended to answer?

A) Does the act of memorization make use of different brain structures than does the act of navigation?
B) Do mental athletes inherit their unusual brain structures, or do the structures develop as a result of specific activities?
C) Does heightened memorization ability reflect abnormal brain structure or an unusual use of normal brain structure?
D) What is the relationship between general cognitive ability and the unusual brain structures of mental athletes?

46

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

A) Lines 27-29 ("After . . . athletes")
B) Lines 33-37 ("They . . . possess")
C) Lines 38-43 ("The researchers . . . scanned")
D) Lines 52-54 ("What's . . . range")

47

As used in line 39, “matched” most nearly means

A) comparable.

B) identical.

C) distinguishable.

D) competing.

48

The main purpose of the fifth paragraph (lines 57-65) is to

A) relate Maguire’s study of mental athletes to her study of taxi drivers.

B) speculate on the reason for Maguire’s unexpected results.

C) identify an important finding of Maguire’s study of mental athletes.

D) transition from a summary of Maguire’s findings to a description of her methods.

49

According to the passage, when compared to mental athletes, the individuals in the control group in Maguire’s second study

A) showed less brain activity overall.

B) demonstrated a wider range of cognitive ability.

C) exhibited different patterns of brain activity.

D) displayed noticeably smaller hippocampal regions.

50

The passage most strongly suggests that mental athletes are successful at memorization because they

A) exploit parts of the brain not normally used in routine memorization.

B) convert information they are trying to memorize into abstract symbols.

C) organize information into numerical lists prior to memorization.

D) exercise their brains regularly through puzzles and other mental challenges.

51

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

A) Lines 66-72 ("Surprisingly . . . way-finding")

B) Lines 72-73 ("At first . . . sense")

C) Lines 79-81 ("Maguire . . . memorized")

D) Lines 85-87 ("They . . . childhood")

52

The questions in lines 74-78 primarily serve to

A) raise doubts about the reliability of the conclusions reached by Maguire.

B) emphasize and elaborate on an initially puzzling result of Maguire's study of mental athletes.

C) imply that Maguire's findings undermine earlier studies of the same phenomenon.

D) introduce and explain a connection between Maguire's two studies and her earlier work.

ANIS

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.

Prehistoric Printing

Paleontologists are using modern technology to gain a greater understanding of the distant past. With the aid of computed tomography (CT) scanning and 3-D printing, researchers are able to create accurate models of prehistoric fossils. [1] These models have expanded

1

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

> Fossils provide paleontologists with a convenient way of estimating the age of the rock in which the fossils are found.

Should the writer make this addition here?

A) Yes, because it supports the paragraph's argument with an important detail.

B) Yes, because it provides a logical transition from the preceding sentence.

C) No, because it is not directly related to the main point of the paragraph.

D) No, because it undermines the main claim of the paragraph.

researchers' knowledge of ancient species and 2 swear to advance the field of paleontology in the years to come.

CT scanners use X-rays to map the surface of a fossil in minute detail, recording as many as one million data points to create a digital blueprint. A 3-D printer then builds a polymer model based on this blueprint, much as a regular computer printer reproduces digital documents on paper. 3 Whereas the head of an ordinary computer printer moves back and forth while printing ink onto paper, the corresponding part of a 3-D printer moves in multiple dimensions while squirting out thin layers of melted polymer plastic. The plastic hardens quickly, 4 it allows the printer to build the layers of the final model. Compared with older ways of modeling fossils, scanning and printing in this way is extremely versatile.

2

A) NO CHANGE
B) subscribe
C) vow
D) promise

3

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

A) Kept, because it helps explain why X-rays are used in CT scanners.
B) Kept, because it provides details to illustrate how a 3-D printer works.
C) Deleted, because it contradicts the passage's information about digital blueprints.
D) Deleted, because it creates confusion about how researchers gather data.

4

A) NO CHANGE
B) this
C) which
D) that

[1] One significant benefit of 3-D printing technology is its ability to create scale reproductions of fossils. [2] But now 3-D scale models can be rearranged with ease, which is a huge boon to scientists. [3] A team led by Drexel University professor Kenneth Lacovara is making models of dinosaur bones one-tenth the bones' original sizes **5** in order to learn how they fit together when the animals were alive. [4] In the past, such research was limited by the weight and bulk of the fossils as well as **6** its preciousness and fragility. [5] In many cases, scientists had to rearrange bones virtually, using artists' renderings. **7**

Because CT scanners can map objects that are impossible to excavate, CT scanning and 3-D printing can also be used to reproduce fossils that scientists cannot observe firsthand. **8** By contrast, researchers

5

A) NO CHANGE
B) in order for learning
C) so that one is learning
D) so to learn

6

A) NO CHANGE
B) it's
C) their
D) there

7

To make this paragraph most logical, sentence 2 should be placed

A) where it is now.
B) before sentence 1.
C) after sentence 4.
D) after sentence 5.

8

A) NO CHANGE
B) Nonetheless,
C) Besides,
D) For example,

from the National Museum of Brazil **9** has relied on this technique to study a fossilized skeleton that was discovered protruding from a rock at an old São Paulo railroad site. **10** The fossil was too delicate to be removed from the rock. Because of the fossil's delicate nature, the team dug up a block of stone around the fossil and brought it to their lab. With the aid of a CT scanner and a 3-D printer, they were able to produce a resin model of the fossil. Examining the model, the researchers determined that **11** one had found a new species, a 75-million-year-old crocodile. While not every discovery will be as dramatic as this one, paleontologists anticipate further expanding their knowledge of ancient life-forms as CT scanning and 3-D printing continue to make fossils more accessible.

9

A) NO CHANGE
B) relied
C) will rely
D) is relying

10

Which choice most effectively combines the underlined sentences?

A) The fossil could not be removed from the rock on account of it being too delicate; moreover, the team dug up a block of stone around it and brought it to their lab.
B) The team thought the fossil was too delicate to remove from the rock, and their next decision was to dig up a block of stone around the fossil and bring it to their lab.
C) The fossil was too delicate to be removed from the rock, so the team dug up a block of stone around the fossil and brought it to their lab.
D) In removing the fossil from the rock, the team found it was too delicate; then they dug up a block of stone around the fossil and brought it to their lab.

11

A) NO CHANGE
B) he or she
C) they
D) it

Questions 12-22 are based on the following passage.

Thomas Nast, the Crusading Cartoonist

"Stop them pictures!" Legend has it that the corrupt politician William "Boss" Tweed once used those words when ordering someone to offer a bribe to Thomas Nast, an artist who had become famous for cartoons that called for reforms to end corruption. **12** As a result, Tweed's attempt to silence the artist failed, and Nast's cartoons, published in magazines like *Harper's Weekly*, actually played a key role in bringing Boss Tweed and his cronies to justice.

13 There were powerful political organizations in the 1860s and the 1870s. The organizations were known as "political machines" and started taking control of city governments. These political machines were able to pack legislatures and courts with hand-picked supporters by purchasing **14** votes, a form of election fraud involving the exchange of money or favors for votes. Once a political machine had control of enough important positions, its members were able to use public funds to enrich themselves and their friends. Boss Tweed's Tammany Hall group, which controlled New York **15** City in the 1860s—stole more than $30 million,

12

A) NO CHANGE
B) Therefore,
C) Furthermore,
D) DELETE the underlined portion.

13

Which choice most effectively combines the underlined sentences?

A) Powerful political organizations in the 1860s and the 1870s started taking control of city governments, and they were known as "political machines."
B) Known as "political machines," in the 1860s and the 1870s, political organizations that were powerful started taking control of city governments.
C) City governments were taken control of in the 1860s and the 1870s, and powerful political organizations known as "political machines" did so.
D) In the 1860s and the 1870s, powerful political organizations known as "political machines" started taking control of city governments.

14

A) NO CHANGE
B) votes, being
C) votes, that is
D) votes, which it is

15

A) NO CHANGE
B) City in the 1860s,
C) City, in the 1860s,
D) City in the 1860s

the equivalent of more than $365 million today.

16 Tweed had been elected to a single two-year term in Congress in 1852. Tammany Hall was so powerful and **17** corrupt that, the *New York Times*, commented "There is absolutely nothing . . . in the city which is beyond the reach of the insatiable gang."

Given the extent of Tweed's power, it is remarkable that a single cartoonist could have played such a significant role in bringing about his downfall. Nast's cartoons depicted Tweed as a great big bloated thief. One of the artist's most **18** famous images showed Tweed with a bag of money in place of his **19** head. Another featured Tweed leaning against a ballot box with the caption "As long as I count the votes, what are you going to do about it?" These cartoons were so effective in part because many of the citizens who supported Tweed were illiterate and thus could not read the newspaper accounts of his criminal activities. Nast's cartoons, though, widely exposed the public to the injustice of Tweed's political machine.

16

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

A) Kept, because it introduces the quote from the *New York Times* in the next sentence.
B) Kept, because it adds a vital detail about Tweed that is necessary to understand his power.
C) Deleted, because it blurs the focus of the paragraph by introducing loosely related information.
D) Deleted, because it contains information that undermines the main claim of the passage.

17

A) NO CHANGE
B) corrupt, that the *New York Times* commented,
C) corrupt that the *New York Times* commented,
D) corrupt that the *New York Times*, commented

18

A) NO CHANGE
B) famous and well-known
C) famous and commonly known
D) famous, commonly known

19

Which choice adds the most relevant supporting information to the paragraph?

A) head; like many other Nast cartoons, that one was published in *Harper's Weekly*.
B) head; Nast would later illustrate Tweed's escape from prison.
C) head, one depiction that omits Tweed's signature hat.
D) head, an image that perfectly captured Tweed's greedy nature.

Nast's campaign to bring down Tweed and the Tammany Hall gang was ultimately successful. In the elections of 1871, the public voted against most of the Tammany Hall candidates, greatly weakening Tweed's power. Eventually, Tweed and his gang were **20** persecuted for a number of charges, including fraud and larceny, and many of them were sent to jail. In 1875 Tweed escaped from jail and fled to Spain and unwittingly **21** brought about one final **22** pinnacle for the power of political cartoons: A Spanish police officer recognized Tweed from one of Nast's cartoons. Consequently, Tweed was sent back to jail, and Nast was hailed as the man who toppled the great Tammany Hall machine.

20

A) NO CHANGE
B) persecuted on
C) persecuted with
D) prosecuted on

21

A) NO CHANGE
B) bringing
C) brings
D) has brought

22

A) NO CHANGE
B) triumph
C) culmination
D) apex

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

Rethinking Crowdfunding in the Arts

Crowdfunding is a popular way to raise money using the Internet. The process sounds simple: an artist, entrepreneur, or other innovator takes his or her ideas straight to the public via a crowdfunding website. The innovator creates a video about the project and offers, in exchange for donations, a series of "perks," from acknowledgment on a social media site to a small piece of art. Many crowdfunding programs are all-or-nothing; in other words, the innovator must garner 100 percent funding for the project or the money is refunded to the donors. At **23** it's best, the system can give creators direct access to millions of potential backers.

The home page of one leading crowdfunding site features a project to manufacture pinhole cameras on a 3-D printer. **24** The idea is obviously very attractive. An obscure method of photography may be made available to many with little expense. Within weeks, the project was 621 percent funded. In contrast, on the same page, a small Brooklyn performance venue is attempting to raise money for its current season. The venue features works of performance art showcased in a storefront window. Those who have seen the space consider it vital. **25** However, that group may not be large enough; with just fourteen days to go in the fund-raising period, the campaign is only 46 percent funded.

23

A) NO CHANGE
B) its
C) its'
D) their

24

Which choice most effectively combines the underlined sentences?

A) With the idea being obviously very attractive, an obscure method of photography may be made available to many at little expense.
B) The idea is obviously very attractive: an obscure method of photography may be made available to many at little expense.
C) An obscure method of photography may be made available to many at little expense, and the idea is obviously very attractive.
D) An obscure method of photography, an idea that is obviously very attractive, may be made available to many at little expense.

25

A) NO CHANGE
B) Therefore,
C) In effect,
D) As a rule,

Artists such as these Brooklyn performers find that crowdfunding exacerbates problems that already exist. **26** Work, that is easily understood and appreciated, is supported, while more complex work goes unnoticed. **27** Time that could be used creating art is spent devising clever perks to draw the attention of potential contributors. **28** In addition, audiences may contain many "free **29** riders," they did not make contributions.

26

A) NO CHANGE
B) Work that is easily understood and appreciated is supported,
C) Work that is easily understood, and appreciated is supported
D) Work—that is easily understood and appreciated—is supported,

27

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

> Crowdfunding tends to attract contributors from a wide variety of professional fields.

Should the writer make this addition here?

A) Yes, because it gives more information about the people who donate to crowdfunding campaigns.
B) Yes, because it reinforces the writer's point about the funding of artistic projects.
C) No, because it fails to take into account project funding received from public institutions.
D) No, because it blurs the focus of the paragraph by introducing a poorly integrated piece of information.

28

A) NO CHANGE
B) Conversely,
C) However,
D) Thus,

29

A) NO CHANGE
B) riders," not making
C) riders," who did not make
D) riders" to not make

Ironically, the success of crowdfunding may weaken overall funding for the arts if people begin to feel that paying for the art **30** loved by them is someone else's responsibility.

[1] One innovative playwright has woven the deficiencies of the system into her crowdfunding model. [2] Though the price for her tickets was higher than that of tickets for comparable shows, it was still affordable to most theatergoers—and reflected the real cost of the performance. [3] She presented the total cost for producing her play on a crowdfunding site. [4] Then she divided the total cost by the number of people she expected to attend the performance. [5] The result of the calculation was the minimum donor price, and only donors who paid at least the minimum ticket price were allowed to attend the performance. [6] By subverting the presumption that money used for her project is an altruistic donation, the playwright showed that **31** our work has monetary value to those who enjoy it. **32**

30

A) NO CHANGE
B) they love
C) loved by him or her
D) he or she loves

31

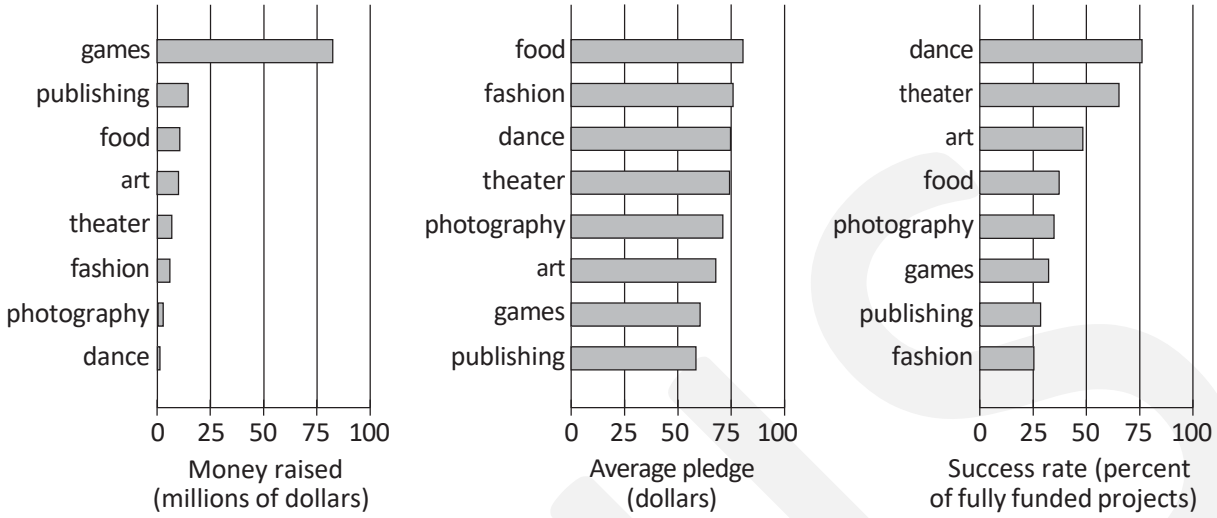
A) NO CHANGE
B) their
C) her
D) its

32

To make this paragraph most logical, sentence 2 should be placed

A) where it is now.
B) after sentence 3.
C) after sentence 4.
D) after sentence 5.

Crowdfunded Projects on Kickstarter in 2012



Adapted from "These Were the Most Successful Projects on Kickstarter Last Year." ©2013 by The Economist Newspaper Limited.

Question 33 asks about the graphic.

33

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

A) The project category with the lowest amount of money raised was also the most successfully funded project category.

B) The project category with the highest average pledge amount was also the most successfully funded project category.

C) The project category with the lowest average pledge amount was also the project category that raised the most money.

D) The project category with the highest average pledge amount was also the project category with the most money raised.

Questions 34-44 are based on the following passage.

Investigative Journalism: An Evolving American Tradition

[1] The recent precipitous decline of print journalism as a viable profession has exacerbated long-held concerns about the state of investigative reporting in the United States. [2] Facing lower print circulation and diminished advertising revenue, many major newspapers have reduced or eliminated investigative resources. [3] Newspapers, the traditional nurturing ground for investigative journalism, have been hit especially hard by the widespread availability of free news online. [4] To survive, investigative journalism must continue to adapt to the digital age. **34**

It is not difficult to understand why a cash-strapped, understaffed publication might feel pressure to cut teams of investigative **35** reporter's—their work is expensive and time-consuming. **36** Taking on the public interest, investigative journalism involves original, often long-form reporting on such topics as **37** illegal activities, street crime, corporate wrongdoing, and political corruption. An investigative story involves one or more experienced journalists dedicating their full energy and the resources of the publisher to a piece for a prolonged period of time. Expensive legal battles may ensue. The results of this work, though costly, have

34

For the sake of the logic and cohesion of the paragraph, sentence 3 should be

A) placed where it is now.
B) placed before sentence 1.
C) placed after sentence 1.
D) DELETED from the paragraph.

35

A) NO CHANGE
B) reporters:
C) reporters,
D) reporter's;

36

A) NO CHANGE
B) Undertaken in
C) Overtaking
D) Taking off from

37

A) NO CHANGE
B) business scandals,
C) abuse of government power,
D) DELETE the underlined portion.

helped keep those in power accountable. The exposure by *Washington Post* reporters Bob Woodward and Carl Bernstein of government misconduct in the Watergate scandal resulted in the resignation of President Richard Nixon in 1974. More recently, Seymour Hersh, reporting for the *New Yorker* in 2004, helped publicize the mistreatment of Iraqi prisoners by US personnel at Abu Ghraib during the Iraq War. **38** In these and other cases, exposure from reporters has served as an important **39** blockade to or scolding of malfeasance.

38

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

> In 1954, Edward R. Murrow and Fred Friendly produced episodes of the CBS television show *See It Now* that contributed to the end of US senator Joseph McCarthy's anticommunist "witch hunts."

Should the writer make this addition here?

A) Yes, because it helps clarify that the passage's main focus is on investigations of political corruption.

B) Yes, because it offers an important counterpoint to the other cases previously described in the paragraph.

C) No, because it gives an example that is both chronologically and substantively out of place in the paragraph.

D) No, because it provides an example that is inconsistent with the passage's definition of investigative journalism.

39

A) NO CHANGE

B) interference to or condemnation of

C) drag on or reproof of

D) deterrent or rebuke to

While worrisome, the decline of traditional print media **40** could not entail the end of investigative journalism. **41** Although many newsrooms have reduced their staff, some still employ investigative reporters. Nonprofit **42** enterprises such as the Organized Crime and Corruption Reporting Project have begun to fill the void created by staff losses at newspapers and magazines. Enterprising freelance reporters, newly funded by nonprofits, make extensive use of social media,

40

Which choice most effectively suggests that the "end of investigative journalism" is a real possibility but one that can be prevented?

A) NO CHANGE
B) need
C) will
D) must

41

Which choice most effectively sets up the examples in the following sentences?

A) NO CHANGE
B) Investigative journalism also declined between the 1930s and 1950s, only to be revived in the 1960s.
C) According to the Pew Research Center, more people get their national and international news from the Internet than from newspapers.
D) Indeed, recent years have witnessed innovative adjustments to changing times.

42

A) NO CHANGE
B) enterprises: such as
C) enterprises such as:
D) enterprises, such as

including blogs and Twitter, to foster a public conversation about key issues. The Help Me Investigate project, **43** for example, solicited readers to submit tips and information related to ongoing stories to its website. Far from marking the end of investigative journalism, **44** cooperation among journalists and ordinary citizens has been facilitated by the advent of the digital age through an increase in the number of potential investigators.

\

43

A) NO CHANGE
B) therefore,
C) however,
D) in any case,

44

A) NO CHANGE
B) the number of potential investigators has increased since the advent of the digital age owing to the facilitation of cooperation among journalists and ordinary citizens.
C) the advent of the digital age has increased the number of potential investigators by facilitating cooperation among journalists and ordinary citizens.
D) by facilitating cooperation among journalists and ordinary citizens the advent of the digital age has increased the number of potential investigators.

ANIS