# 1 Sample Listening Comprehension Test

This section tests your ability to comprehend spoken English. It is divided into three parts, each with its own directions. You are *not* permitted to turn the page during the reading of the directions or to take notes at any time.

## Part A

**Directions:** Each item in this part consists of a brief conversation involving two speakers. Following each conversation, a third voice will ask a question. You will hear the conversations and questions only once, and they will *not* be written out.

When you have heard each conversation and question, read the four answer choices and select the *one*—(A), (B), (C), or (D)—that best answers the question based on what is directly stated or on what can be inferred. Then fill in the space on your answer sheet that matches the letter of the answer that you have selected.

Here is an example.

You will hear:

**Sample Answer**



You will read: (A) Open the window.
(B) Move the chair.
(C) Leave the room.
(D) Take a seat.

From the conversation you find out that the woman thinks the man should put the chair over by the window. The best answer to the question "What does the woman think the man should do?" is (B), "Move the chair." You should fill in (B) on your answer sheet.

1. (A) It's brand new.
   (B) She just repaired it.
   (C) Someone painted it.
   (D) It's just been sold.
2. (A) Give the woman cash.
   (B) Go to his car.
   (C) Return some merchandise.
   (D) Use his credit card.
3. (A) He shouldn't have thrown away the list.
   (B) He doesn't have to read all the books.
   (C) All of the books on the list are required.
   (D) Some of the books are available now.
4. (A) She enjoyed it very much.
   (B) She thought it was too long.
   (C) She thought it was boring.
   (D) She only liked the ending.
5. (A) Either a pen or pencil can be used.
   (B) It's not necessary to fill out the form.
   (C) She doesn't have either a pen or a pencil.
   (D) A pen is better than a pencil.
6. (A) The software isn't convenient to use.
   (B) He's not familiar with the software.
   (C) Using the software is simple.
   (D) He wishes he'd bought that software.
7. (A) The man ordered it, but it hasn't arrived yet.
   (B) It isn't working.
   (C) Someone else is using it.
   (D) The man doesn't know how to operate it.
8. (A) What time his brother called.
   (B) Where to meet his brother.
   (C) Why his brother called.
   (D) When to meet his brother.
9. (A) He left on a long trip yesterday.
   (B) His letter arrived unexpectedly.
   (C) He seemed to be sad yesterday.
   (D) The letter he sent was very funny.
10. (A) It's on the wrong floor.
    (B) There are too many bedrooms.
    (C) It's too small.
    (D) The rent is too high.
11. (A) He'll probably give the man another grade.
    (B) He doesn't teach chemistry anymore.
    (C) He rarely changes his grades.
    (D) He'll probably retire soon.
12. (A) She mailed the grades to her students.
    (B) She left the students' tests in her office.
    (C) She can't get into her office.
    (D) She put a list of grades on the door.
13. (A) He should get something for his friends to eat.
    (B) There isn't time for him to go out now.
    (C) The game won't be played today.
    (D) He should have invited his friends to the game.
14. (A) His class has been canceled.
    (B) He shouldn't drop the class.
    (C) An earlier class would be better for him.
    (D) He doesn't need to study political science.
15. (A) Sitting in other seats.
    (B) Going home.
    (C) Turning up the music.
    (D) Asking the usher for a refund.
16. (A) He has a good excuse for being late.
    (B) He's been feeling very weak recently.
    (C) He's still waiting to be contacted.
    (D) He doesn't take responsibility for errors.
17. (A) She doesn't have her camera.
    (B) The sun hasn't set yet.
    (C) There isn't any film in the camera.
    (D) Her camera is broken.
18. (A) He got on the wrong bus.
    (B) He's afraid he'll be late for his flight.
    (C) He's sorry he took a bus instead of flying.
    (D) He had to wait for the bus.
19. (A) The meeting will have to be rescheduled.
    (B) She doesn't care whom the board picks as dean.
    (C) She's not sure where the meeting will be.
    (D) The board will not choose a dean this month.
20. (A) He's upset about the card game.
    (B) He's getting ready for the game.
    (C) He knocked over the card table.
    (D) He sat down to have dinner.
21. (A) They wish they hadn't paid attention to Harvey.
    (B) They asked for some information about Harvey.
    (C) Harvey told them not to ignore him.
    (D) Only Harvey could give them any assistance.
22. (A) Most of the audience joined in the performance.
    (B) Some people don't enjoy performing.
    (C) Not many people were in the audience.
    (D) A few people didn't like the performance.
23. (A) A hotel room.
    (B) The man's family.
    (C) A reasonable offer.
    (D) The man's schedule.
24. (A) He must change his syllabus.
    (B) The woman cannot take his class.
    (C) He has extra copies of the syllabus.
    (D) Some students are not on his list.
25. (A) It's inconvenient for him to go to Mount Pleasant Street.
    (B) Those antique stores aren't very nice.
    (C) There are many inexpensive shops on Mount Pleasant Street.
    (D) The antiques in those stores are a little expensive.
26. (A) He's gone to San Diego many times.
    (B) He's attended a lot of conferences.
    (C) He has already gotten enough information.
    (D) He's living in San Diego now.
27. (A) He once drove in a race.
    (B) He's going to the races soon.
    (C) He drives quite fast.
    (D) He's thinking about a new car.
28. (A) The bowls are stacked on the shelves.
    (B) This soup is no worse than the other brands.
    (C) The new bowls are very attractive.
    (D) He plans to stock up on this soup.
29. (A) Peter wouldn't be favored in the match.
    (B) The match had already been played.
    (C) The match wouldn't be played.
    (D) Peter would win the match.
30. (A) He hasn't finished working on the bookshelves.
    (B) The tools have been misplaced.
    (C) He's not very good with tools.
    (D) The tools have already been returned.

## Part B

**Directions:** This part of the test consists of extended conversations between two speakers. After each of these conversations, there are a number of questions. You will hear each conversation and question only once, and the questions are *not* written out.

When you have heard the questions, read the four answer choices and select the *one*—(A), (B), (C), or (D)—that best answers the question based on what is directly stated or on what can be inferred. Then fill in the space on your answer sheet that matches the letter of the answer that you have selected.

Don't forget: during actual exams, taking notes or writing in your test book is *not* permitted.

LIVEWORKSHEETS

31. (A) Student and advisor.
(B) Museum curator and visitor.
(C) Manager and job applicant.
(D) Professor and teaching assistant.

32. (A) In a few weeks.
(B) Next year.
(C) In three years.
(D) In four years.

33. (A) Change her major.
(B) Make a quick decision.
(C) Take elective courses in art history.
(D) Work full time at a museum.

34. (A) She couldn't get airline reservations.
(B) She can't find an important book.
(C) She's been studying too much.
(D) She doesn't have a car.

35. (A) Amounts of money.
(B) Names of riders.
(C) Types of cars.
(D) Regions of the United States.

36. (A) Information about places to visit.
(B) Help with expenses and driving.
(C) Plane reservations.
(D) A used car.

37. (A) In the campus cinema.
(B) Next door to the Student Union building.
(C) In a travel agent's office.
(D) On the second floor of the Student Union building.

## Part C

**Directions:** This part of the test consists of several talks, each given by a single speaker. After each of these talks, there are a number of questions. You will hear each talk and question only once, and the questions are *not* written out.

When you have heard each question, read the four answer choices and select the *one*—(A), (B), (C), or (D)—that best answers the question based on what is directly stated or on what can be inferred. Then fill in the space on your answer sheet that matches the letter of the answer that you have selected.

Here is an example.

You will hear:

Now here is a sample question.

You will hear:

**Sample Answer**

(A) (B) ● (D)

You will read: (A) Philosophy.
(B) Meteorology.
(C) Astronomy.
(D) Photography.

The lecture concerns a lunar eclipse, a topic that would typically be discussed in an astronomy class. The choice that best answers the question "In what course is this lecture probably being given?" is (C), "Astronomy." You should fill in (C) on your answer sheet.

Here is another sample question.

You will hear:

**Sample Answer**

● (B) (C) (D)

You will read: (A) The Earth's shadow moves across the Moon.
(B) Clouds block the view of the Moon.
(C) The Moon moves between the Earth and the Sun.
(D) The Sun can be observed without special equipment.

From the lecture you learn that a lunar eclipse occurs when the Earth moves between the Sun and the Moon and the shadow of the Earth passes across the Moon. The choice that best answers the question "According to the speaker, which of the following occurs during a lunar eclipse?" is (A), "The Earth's shadow moves across the Moon."

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38. (A) An airplane.
(B) A satellite.
(C) A fireworks display.
(D) A flying saucer.

39. (A) To change tires.
(B) To avoid the danger.
(C) To get a hotel room.
(D) To change drivers.

40. (A) From the news on the radio.
(B) From a newspaper.
(C) From his mother.
(D) From the news on television.

41. (A) It burned up in the upper atmosphere.
(B) It injured a woman as she was sleeping.
(C) It caused damage to a parked car.
(D) It broke into pieces before striking the ground.

42. (A) Frightened.
(B) Upset.
(C) Fortunate.
(D) Relieved.

43. (A) On board a bus.
(B) At the top of the Washington Monument.
(C) On an elevator.
(D) At the Lincoln Memorial.

44. (A) Four years.
(B) Thirty-six years.
(C) Forty years.
(D) Forty-eight years.

45. (A) Walk up 898 steps.
(B) Take the elevator to the top.
(C) Come down on the elevator.
(D) Walk down the stairs.

46. (A) They jumped over it.
(B) They took pictures of it.
(C) They wrote their names on it.
(D) They touched it.

47. (A) Music appreciation.
(B) American history.
(C) Dance.
(D) Geography.

48. (A) They were an important part of the daily lives of the people of the frontier.
(B) They were all extremely old.
(C) They were all written as theme songs for political campaigns.
(D) They were primarily written as dance music.

LIVEWORKSHEETS

49. (A) They weren't as enduring.
(B) They were harder to sing and play.
(C) They were livelier.
(D) They weren't concerned with politics.

50. (A) Sing songs.
(B) Look at some sheet music.
(C) Go to a dance.
(D) Listen to a recording.

# 2 Sample Structure and Written Expression Test

**Time: 25 minutes**

This section tests your ability to recognize grammar and usage suitable for standard written English. This section is divided into two parts, each with its own directions.

## Structure

**Directions:** Items in this part are incomplete sentences. Following each of these sentences, there are four words or phrases. You should select the one word or phrase—(A), (B), (C), or (D)—that best completes the sentence. Then fill in the space on your answer sheet that matches the letter of the answer that you have selected.

*Example 1*

Sample Answer

Ⓐ ● Ⓒ Ⓓ

Pepsin _____ an enzyme used in digestion.

(A) that
(B) is
(C) of
(D) being

This sentence should properly read "Pepsin is an enzyme used in digestion." You should fill in (B) on your answer sheet.

1. Martha Graham, _____ of the pioneers of modern dance, didn't begin dancing until she was twenty-one.
(A) who, as one
(B) she was
(C) one
(D) was one

2. Tiger moths _____ wings marked with stripes or spots.
(A) have
(B) with
(C) their
(D) whose

3. Platinum is harder than copper and is almost as pliable _____.
(A) gold
(B) than gold
(C) as gold
(D) gold is

4. Most of Annie Jump Cannon's career as an astronomer involved the observation, classification, and _____.
(A) she analyzed stars
(B) the stars' analysis
(C) stars were analyzed
(D) analysis of stars

5. Many communities are dependent on groundwater _____ from wells for their water supply.
(A) that obtained
(B) obtained
(C) is obtained
(D) obtain it

6. _____ experimental studies of the aging process, psychologist Ross McFarland determined that people could work productively much longer than had previously been thought.
(A) In that
(B) Through
(C) Since
(D) Into

7. _____ often raise funds from the sale of stock.
(A) For corporations to operate
(B) The operations of corporations
(C) Corporations operate by
(D) To operate, corporations

8. While all birds are alike in that they have feathers and lay eggs, _____ great differences among them in terms of size, structure, and color.
(A) there are
(B) but are
(C) if there are
(D) to be

9. There were _____ federal laws regulating mining practices until 1872.
(A) none
(B) not
(C) no
(D) nor

10. The Masters, one of the most important of all golf tournaments, _____ every year in Augusta, Georgia.
(A) has held
(B) being held
(C) is held
(D) holding

11. Not only _____ places of beauty; they serve scientific and educational purposes as well.
(A) are botanical gardens
(B) botanical gardens to be
(C) botanical gardens are
(D) to be botanical gardens

12. _____ quicksand can be found all over the world, little was known about its composition until recently.
(A) Except
(B) Although
(C) Even
(D) Despite

13. In 1791 Quebec was divided into two sections, Upper Canada and Lower Canada, _____ were ruled by elected assemblies.
(A) they both
(B) both of them
(C) in which both
(D) both of which

14. _____ are a form of carbon has been known since the late eighteenth century.
(A) Diamonds
(B) Because diamonds
(C) That diamonds
(D) Diamonds, which

15. Designed by Frédéric Auguste Bartholdi, _____.
(A) the United States was given the Statue of Liberty by the people of France
(B) the people of France gave the Statue of Liberty to the United States
(C) the Statue of Liberty was given to the United States by the people of France
(D) the French people presented the United States with a gift, the Statue of Liberty

## Written Expression

**Directions:** The items in this part have four underlined words or phrases, (A), (B), (C) and (D). You must identify the one underlined expression that must be changed for the sentence to be correct. Then find the number of the question on your answer sheet and fill in the space corresponding to the letter.

*Example 1*

Sample Answer

● Ⓑ Ⓒ Ⓓ

Lenses may to have either concave or convex shapes.
A B C D

This sentence should read "Lenses may have either concave or convex shapes." You should therefore select answer (A).

LIVEWORKSHEETS

16. There (A) are thousand (B) of different (C) types of roses (D).

17. Since (A) 1908 breeders set out (B) to produce chickens that could survive (C) Canada's cold climate (D).

18. From (A) 1865 to 1875, a remarkable (B) various (C) of inventions was produced (D).

19. The simplest (A) kind of plant, alike (B) the simplest kind of animal, consists of (C) only one (D) cell.

20. The first recorded (A) use of natural gas to light (B) streetlamps it was (C) in the town of (D) Frederick, New York, in 1825.

21. A museum in Denver, Colorado, chronicles (A) black cowboys and (B) his (C) role in the history (D) of the American West.

22. Bluegrass music is a kind of (A) country music who (B) was pioneered (C) by Bill Monroe of (D) Rosine, Kentucky.

23. A number of (A) the materials used in manufacturing (B) paint are potential (C) dangerous if mishandled (D).

24. There (A) are several (B) races of giraffes, but (C) there are (D) only one species.

25. Chestnuts were once (A) the most common (B) tree in the eastern United States, but almost (C) of them were destroyed by a disease called (D) chestnut blight.

26. Despite (A) they are small (B), ponies are strong (C) and have (D) great stamina.

27. Physical therapists help patients relearn (A) how to use (B) their bodies after (C) disease or injure (D).

28. Liquids take the shape (A) of any (B) container which in (C) they are placed (D).

29. The (A) Sun supplies the light and the warmth (B) that permit life (C) on Earth existing (D).

30. For seventeen years, between 1932 to (A) 1949, Fred Allen was (B) one of the (C) most popular comedians on radio (D).

31. Boolean algebra is most often (A) used to solve (B) problems in logic (C), probability, and engineer (D).

32. Attorney Clarence Darrow is knowing (A) for his (B) defense of (C) unpopular persons and causes (D).

33. Phi Beta Kappa is a (A) honor society (B) that encourages scholarship (C) in science and art (D).

34. The French Quarter is the (A) most famous (B) and the most old (C) section of (D) New Orleans.

35. There was (A) once a widespread believe (B) that all lizards (C) were poisonous (D).

36. In the late (A) nineteenth century, many public buildings, especially that (B) on college campuses, were built (C) in the in the Romanesque Revival style of architecture (D).

37. Sponges have (A) neither heads (B) nor (C) separate body organs (D).

38. A wooden (A) barrel is made from strips (B) of wood called staves holding (C) together with metal (D) hoops.

39. Salt was once too (A) scarce and (B) precious that it was used (C) as money (D).

40. Sharks acquire many (A) sets of tooth (B) during (C) their (D) lifetimes.

## 3 Sample Reading Comprehension Test

**Time: 55 minutes**

This section of the test measures your ability to understand the meaning of words and to comprehend written materials.

**Directions:** The remainder of this section contains several passages, each followed by a number of questions. Read the passages and, for each question, choose the *one* best answer—(A), (B), (C), or (D)—based on what is stated in the passage or on what can be inferred from the passage. Then fill in the space on your answer sheet that matches the letter of the answer that you have selected.

LIVEWORKSHEETS

## Questions 1–12

The technology of the North American colonies did not differ strikingly from that of Europe, but in one respect, the colonists enjoyed a great advantage. Especially by comparison with Britain, Americans had a wonderfully plentiful supply of wood.

The first colonists did not, as many people imagine, find an entire continent covered by a climax forest. Even along the Atlantic seaboard, the forest was broken at many points. Nevertheless, all sorts of fine trees abounded, and through the early colonial period, those who pushed westward encountered new forests. By the end of the colonial era, the price of wood had risen slightly in eastern cities, but wood was still extremely abundant.

The availability of wood brought advantages that have seldom been appreciated. Wood was a foundation of the economy. Houses and all manner of buildings were made of wood to a degree unknown in Britain. Secondly, wood was used as a fuel for heating and cooking. Thirdly, it was used as the source of important industrial compounds, such as potash, an industrial alkali; charcoal, a component of gunpowder; and tannic acid, used for tanning leather.

The supply of wood conferred advantages but had some negative aspects as well. Iron at that time was produced by heating iron ore with charcoal. Because Britain was so stripped of trees, she was unable to exploit her rich iron mines. But the American colonies had both iron ore and wood; iron production was encouraged and became successful. However, when Britain developed coke smelting, the colonies did not follow suit because they had plenty of wood and besides, charcoal iron was stronger than coke iron. Coke smelting led to technological innovations and was linked to the emergence of the Industrial Revolution. In the early nineteenth century, the former colonies lagged behind Britain in industrial development because their supply of wood led them to cling to charcoal iron.

1. What does the passage mainly discuss?
   (A) The advantages of using wood in the colonies
   (B) The effects of an abundance of wood on the colonies
   (C) The roots of the Industrial Revolution
   (D) The difference between charcoal iron and coke iron

2. The word "strikingly" in line 2 is closest in meaning to
   (A) realistically
   (B) dramatically
   (C) completely
   (D) immediately

3. Which of the following is a common assumption about the forests of North America during the colonial period?
   (A) They contained only a few types of trees.
   (B) They existed only along the Atlantic seaboard.
   (C) They had little or no economic value.
   (D) They covered the entire continent.

4. The use of the word "abounded" in line 8 indicates that the trees were
   (A) present in large numbers
   (B) restricted to certain areas
   (C) cut down
   (D) cultivated

5. According to the passage, by the end of the colonial period, the price of wood in eastern cities
   (A) rose quickly because wood was becoming so scarce
   (B) was much higher than it was in Britain
   (C) was slightly higher than in previous years
   (D) decreased rapidly because of lower demand for wood

6. What can be inferred about houses in Britain during the period written about in the passage?
   (A) They were more expensive than American houses.
   (B) They were generally built with imported materials.
   (C) They were typically smaller than homes in North America.
   (D) They were usually built from materials other than wood.

7. Why does the author mention gunpowder in line 19?
   (A) To illustrate the negative aspects of some industrial processes
   (B) To give an example of a product made with wood
   (C) To remind readers that the Colonial era ended in warfare
   (D) To suggest that wood was not the only important product of the Colonies

8. The word "conferred" in line 21 is closest in meaning to
   (A) consulted
   (B) gathered
   (C) provided
   (D) restricted

9. The phrase "follow suit" in line 27 means
   (A) do the same thing
   (B) make an attempt
   (C) have the opportunity
   (D) take a risk

10. According to the passage, why was the use of coke smelting advantageous?
    (A) It led to advances in technology.
    (B) It was less expensive than wood smelting.
    (C) It produced a stronger type of iron than wood smelting.
    (D) It stimulated the demand for wood.

11. The phrase "cling to" in line 33 is closest in meaning to
    (A) try to develop
    (B) avoid
    (C) continue to use
    (D) reconsider

12. Where in the passage does the author begin to discuss in detail the disadvantages that an abundant supply of wood brought to the colonies?
    (A) Lines 1–3
    (B) Lines 5–7
    (C) Lines 13–14
    (D) Lines 21–22

LIVEWORKSHEETS

## Questions 13–22

The Peales were a distinguished family of American artists. Charles Willson Peale is best remembered for his portraits of leading figures of the American Revolution. He painted portraits (line) of Franklin and Jefferson, and over a dozen of George Washington. (5) His life-size portrait of his sons Raphaelle and Titian was so realistic that George Washington reportedly once tipped his hat to the figures in the picture.

Charles Willson Peale gave up painting in his middle age and devoted his life to the Peale Museum, which he founded in (10) Philadelphia. The world's first popular museum of art and natural science, it featured paintings by Peale and his family as well as displays of animals in their natural settings. Peale found the animals himself and devised a method of taxidermy to make the exhibits more lifelike. The museum's most popular display was (15) the skeleton of a mastodon—a huge, extinct elephant—which Peale unearthed on a New York farm in 1801.

Three of Peale's seventeen children were also famous artists. Raphaelle Peale often painted still lifes of flowers, fruit, and cheese. His works show the same luminosity and attention to (20) detail that the works of the Dutch masters show. In the late eighteenth century, however, portraiture was the rage, and so Raphaelle Peale found few buyers for his still lifes at the time. His brother Rembrandt studied under his father and painted portraits of many noted people, including one of George (25) Washington. Another brother, Rubens Peale, painted mostly landscapes and portraits.

James Peale, the brother of Charles Willson Peale, specialized in miniatures. His daughter Sarah Miriam Peale was probably the first professional female portrait painter in America.

13. What is the main topic of the passage?
(A) The life of Charles Willson Peale
(B) Portraiture in the 18th century
(C) The Peale Museum
(D) A family of artists

14. The author probably mentions that Washington "tipped his hat to the figures in the painting" (lines 6–7) to indicate that
(A) Charles Willson Peale's painting was very lifelike
(B) Washington respected Charles Willson Peale's work
(C) Washington was friendly with Raphaelle and Titian Peale
(D) the painting of the two brothers was extremely large

15. The word "settings" in line 12 is closest in meaning to which of the following?
(A) Environments
(B) Categories
(C) Positions
(D) Requirements

Go on to the next page

16. For which of the following terms does the author give a definition in the second paragraph?
(A) Natural science
(B) Skeleton
(C) Taxidermy
(D) Mastodon

17. Which of the following questions about the Peale Museum does the passage NOT supply enough information to answer?
(A) Who found and prepared its animal exhibits?
(B) In what city was it located?
(C) Where did its most popular exhibit come from?
(D) In what year was it founded?

18. The word "unearthed" in line 16 is closest in meaning to
(A) displayed
(B) dug up
(C) located
(D) looked over

19. Which of the following words could best be substituted for the word "rage" in line 21?
(A) Fashion
(B) Anger
(C) Conflict
(D) Desire

20. According to the passage, Rembrandt Peale and his father both painted
(A) miniatures
(B) portraits of George Washington
(C) paintings of flowers, fruit, and cheese
(D) pictures of animals

21. Which of the following is NOT one of the children of Charles Willson Peale?
(A) Titian Peale
(B) Rubens Peale
(C) Raphaelle Peale
(D) Sarah Miriam Peale

22. The author's attitude toward the Peales is generally
(A) envious
(B) puzzled
(C) admiring
(D) disappointed

LIVEWORKSHEETS

## Questions 23–34

According to the best evidence gathered by space probes and astronomers, Mars is an inhospitable planet, more similar to Earth's Moon than to Earth itself—a dry, stark, seemingly lifeless world. Mars' air pressure is equal to Earth's at an altitude of 100,000 feet. The air there is 95% carbon dioxide. Mars has no ozone layer to screen out the Sun's lethal radiation. Daytime temperatures may reach above freezing, but because the planet is blanketed by the mere wisp of an atmosphere, the heat radiates back into space. Even at the equator, the temperature drops to −50°C (−60°F) at night. Today there is no liquid water, although valleys and channels on the surface show evidence of having been carved by running water. The polar ice caps are made of frozen water and carbon dioxide, and water may be frozen in the ground as permafrost.

Despite these difficult conditions, certain scientists believe that there is a possibility of transforming Mars into a more Earth-like planet. Nuclear reactors might be used to melt frozen gases and eventually build up the atmosphere. This in turn could create a "greenhouse effect" that would stop heat from radiating back into space. Liquid water could be thawed to form a polar ocean. Once enough ice has melted, suitable plants could be introduced to build up the level of oxygen in the atmosphere so that, in time, the planet would support animal life from Earth and even permanent human colonies. "This was once thought to be so far in the future as to be irrelevant," said Christopher McKay, a research scientist at the National Aeronautics and Space Administration. "But now it's starting to look practical. We could begin work in four or five decades."

The idea of "terra-forming" Mars, as enthusiasts call it, has its roots in science fiction. But as researchers develop a more profound understanding of how Earth's ecology supports life, they have begun to see how it may be possible to create similar conditions on Mars. Don't plan on homesteading on Mars any time soon, though. The process could take hundreds or even thousands of years to complete, and the cost would be staggering.

23. With which of the following is the passage primarily concerned?
(A) The possibility of changing the Martian environment
(B) The challenge of interplanetary travel
(C) The advantages of establishing colonies on Mars
(D) The need to study the Martian ecology

24. The word "stark" in line 3 is closest in meaning to
(A) harsh
(B) unknown
(C) dark
(D) distant

Go on to the

25. The word "there" in line 5 refers to
(A) a point 100 miles above the Earth
(B) the Earth's Moon
(C) Mars
(D) outer space

26. Which of the following does the author NOT list as a characteristic of the planet Mars that would make colonization difficult?
(A) There is little liquid water.
(B) Daytime temperatures are dangerously high.
(C) The Sun's rays are deadly.
(D) Nighttime temperatures are extremely low.

27. According to the passage, the Martian atmosphere today consists mainly of
(A) carbon dioxide
(B) oxygen
(C) ozone
(D) water vapor

28. It can be inferred from the passage that the "greenhouse effect" mentioned in line 19 is
(A) the direct result of nuclear reactions
(B) the cause of low temperatures on Mars
(C) caused by the absence of green plants
(D) a possible means of warming Mars

29. The word "suitable" in line 21 is closest in meaning to
(A) resistant
(B) altered
(C) appropriate
(D) native

30. According to Christopher McKay, the possibility of transforming Mars
(A) could occur only in science fiction stories
(B) will not begin for hundreds, even thousands of years
(C) is completely impractical
(D) could be started in 40 to 50 years

31. As used in line 29, the term "terra-forming" refers to
(A) a process for adapting plants to live on Mars
(B) a means of transporting materials through space
(C) a method of building housing for colonists on Mars
(D) a system of creating Earth-like conditions on other planets

32. The phrase "more profound" in lines 30–31 is closest in meaning to
(A) deeper
(B) more practical
(C) more up-to-date
(D) brighter

33. According to the article, the basic knowledge needed to transform Mars comes from
(A) the science of astronomy
(B) a knowledge of Earth's ecology
(C) data from space probes
(D) science fiction stories

34. The word "staggering" in line 35 is closest in meaning to
(A) astonishing
(B) restrictive
(C) increasing
(D) unpredictable

LIVEWORKSHEETS

## Questions 35–43

Another critical factor that plays a part in susceptibility to colds is age. A study done by the University of Michigan School of Public Health revealed particulars that seem to hold true for the general population. Infants are the most cold-ridden group, averaging more than six colds in their first year. Boys have more colds than girls up to age three. After the age of three, girls are more susceptible than boys, and teenage girls average three colds a year to boys' two.

The general incidence of colds continues to decline into maturity. Elderly people who are in good health have as few as one or two colds annually. One exception is found among people in their twenties, especially women, who show a rise in cold infections, because people in this age group are most likely to have young children. Adults who delay having children until their thirties and forties experience the same sudden increase in cold infections.

The study also found that economics plays an important role. As income increases, the frequency at which colds are reported in the family decreases. Families with the lowest income suffer about a third more colds than families at the upper end. Lower income generally forces people to live in more cramped quarters than those typically occupied by wealthier people, and crowding increases the opportunities for the cold virus to travel from person to person. Low income may also adversely influence diet. The degree to which poor nutrition affects susceptibility to colds is not yet clearly established, but an inadequate diet is suspected of lowering resistance generally.

35. The paragraph that precedes this passage most probably deals with
    (A) minor diseases other than colds
    (B) the recommended treatment of colds
    (C) a factor that affects susceptibility to colds
    (D) methods of preventing colds among elderly people

36. Which of the following is closest in meaning to the word "particulars" in line 3?
    (A) Minor errors
    (B) Specific facts
    (C) Small distinctions
    (D) Individual people

37. What does the author claim about the study discussed in the passage?
    (A) It contains many inconsistencies.
    (B) It specializes in children.
    (C) It contradicts the results of earlier studies in the field.
    (D) Its results apparently are relevant for the population as a whole.

38. It may be inferred from the passage that which of the following groups of people is most likely to catch colds?
    (A) Infant boys
    (B) Young girls
    (C) Teenage boys
    (D) Elderly women

39. There is information in the second paragraph of the passage to support which of the following conclusions?
    (A) Men are more susceptible to colds than women.
    (B) Children infect their parents with colds.
    (C) People who live in a cold climate have more colds than those who live in a warm one.
    (D) People who don't have children are more susceptible to colds than those who do.

40. The phrase "people in this age group" (line 13) refers to
    (A) infants
    (B) people in their twenties
    (C) people in their thirties and forties
    (D) elderly people

41. The author's main purpose in writing the last paragraph of the passage was to
    (A) explain how cold viruses are transmitted
    (B) prove that a poor diet causes colds
    (C) discuss the relationship between income and frequency of colds
    (D) discuss the distribution of income among the people in the study

42. The word "cramped" in line 21 is closest in meaning to
    (A) cheap
    (B) crowded
    (C) depressing
    (D) simple

43. The author's tone in this passage could best be described as
    (A) neutral
    (B) humorous
    (C) tentative
    (D) critical

LIVEWORKSHEETS

## Questions 44–50

About fifty years ago, plant physiologists set out to grow roots by themselves in solutions in laboratory flasks. The scientists found that the nutrition of isolated roots was quite simple. They required sugar and the usual minerals and vitamins. However, they did not require organic nitrogen compounds. These roots got along fine on mineral inorganic nitrogen. Roots are capable of making their own proteins and other organic compounds. These activities by roots require energy, of course. The process of respiration uses sugar to make the high energy compound ATP, which drives the biochemical reactions. Respiration also requires oxygen. Highly active roots require a good deal of oxygen.

The study of isolated roots has provided an understanding of the relationship between shoots and roots in intact plants. The leaves of the shoots provide the roots with sugar and vitamins, and the roots provide the shoots with water and minerals. In addition, roots can provide the shoots with organic nitrogen compounds. This comes in handy for the growth of buds in the early spring when leaves are not yet functioning. Once leaves begin photosynthesizing, they produce protein, but only mature leaves can "export" protein to the rest of the plant in the form of amino acids.

44. What is the main topic of the passage?
(A) The relationship between a plant's roots and its shoots
(B) What can be learned by growing roots in isolation
(C) How plants can be grown without roots
(D) What elements are necessary for the growth of plants

45. The word "themselves" in line 2 refers to
(A) plant physiologists
(B) solutions
(C) laboratory flasks
(D) roots

46. According to the passage, what is ATP?
(A) A biochemical process
(B) The tip of a root
(C) A chemical compound
(D) A type of plant cell

47. The word "intact" in line 13 is closest in meaning to
(A) mature
(B) wild
(C) whole
(D) tiny

48. The use of the phrase "comes in handy" in line 17 indicates that the process is
(A) useful
(B) predictable
(C) necessary
(D) successful

49. It can be inferred from the passage that, in the early spring, the buds of plants
(A) "export" protein in the form of amino acids
(B) do not require water
(C) have begun photosynthesizing
(D) obtain organic compounds from the roots

50. Which of the following best describes the organization of the passage?
(A) The results of two experiments are compared.
(B) A generalization is made, and several examples of it are given.
(C) The findings of an experiment are explained.
(D) A hypothesis is presented, and several means of proving it are suggested.

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