PASSAGE 1

By the mid-nineteenth century, the term "icebox" had entered the American language, but ice was still only beginning to affect the diet of ordinary citizens in the United States. The ice trade grew with the growth of cities. Ice was used in hotels, taverns, and hospitals, and by some forward-looking city dealers in fresh meat, fresh fish, and butter. After the Civil War (1861-1865), as ice was used to refrigerate freight cars, it also came into household use. Even before 1880, half the ice sold in New York, Philadelphia, and Baltimore, and one-third of that sold in Boston and Chicago, went to families for their own use. This had become possible because a new household convenience, the icebox, a precursor of the modern refrigerator, had been invented.

Making an efficient icebox was not as easy as we might now suppose. In the early nineteenth century, the knowledge of the physics of heat, which was essential to a science of refrigeration, was rudimentary. The commonsense notion that the best icebox was one that prevented the ice from melting was of course mistaken, for it was the melting of the ice that performed the cooling. Nevertheless, early efforts to economize ice included wrapping the ice in blankets, which kept the ice from doing its job. Not until near the end of the nineteenth century did inventors achieve the delicate balance of insulation and circulation needed for an efficient icebox.

But as early as 1803, an ingenious Maryland farmer, Thomas Moore, had been on the right track. He owned a farm about twenty miles outside the city of Washington, for which the village of Georgetown was the market center. When he used an icebox of his own design to transport his butter to market, he found that customers would pass up the rapidly melting stuff in the tubs of his competitors to pay a premium price for his butter, still fresh and hard in neat, one-pound bricks. One advantage of his icebox, Moore explained, was that farmers would no longer have to travel to market at night in order to keep their produce cool.

1. What does the passage mainly discuss?

(A) The influence of ice on the diet

(B) The development of refrigeration

(C) The transportation of goods to market

(D) Sources of ice in the nineteenth century

2. According to the passage , when did the word "icebox" become part of the language of the United States?

(A) in 1803

(B) sometime before 1850

(C) during the civil war

(D) near the end of the nineteenth century

3. The phrase "forward-looking" in line 4 is closest in meaning to

(A) progressive

(B) popular

(C) thrifty

(D) well-established

4. The author mentions fish in line 4 because

(A) many fish dealers also sold ice

(B) fish was shipped in refrigerated freight cars
(C) fish dealers were among the early commercial users of ice
(D) fish was not part of the ordinary person's diet before the invention of the icebox

5. The word "it" in line 5 refers to
(A) fresh meat
(B) the Civil War
(C) ice
(D) a refrigerator

6. According to the passage , which of the following was an obstacle to the development of the icebox?
(A) Competition among the owners of refrigerated freight cars
(B) The lack of a network for the distribution of ice
(C) The use of insufficient insulation
(D) Inadequate understanding of physics

7. The word "rudimentary" in line 12 is closest in meaning to
(A) growing
(B) undeveloped
(C) necessary
(D) uninteresting

8. According to the information in the second paragraph, an ideal icebox would
(A) completely prevent ice from melting
(B) stop air from circulating
(C) allow ice to melt slowly
(D) use blankets to conserve ice

9. The author describes Thomas Moore as having been "on the right track" (lines 18-19) to indicate that
(A) the road to the market passed close to Moore's farm
(B) Moore was an honest merchant
(C) Moore was a prosperous farmer
(D) Moore's design was fairly successful

10. According to the passage , Moore's icebox allowed him to
(A) charge more for his butter
(B) travel to market at night
(C) manufacture butter more quickly
(D) produce ice all year round

11. The "produce" mentioned in line 25 could include
(A) iceboxes

(B) butter
(C) ice
(D) markets

PASSAGE 2

The geology of the Earth's surface is dominated by the particular properties of water. Present on Earth in solid, liquid, and gaseous states, water is exceptionally reactive. It dissolves, transports, and precipitates many chemical compounds and is constantly modifying the face of the Earth.

Evaporated from the oceans, water vapor forms clouds, some of which are transported by wind over the continents. Condensation from the clouds provides the essential agent of continental erosion: rain. Precipitated onto the ground, the water trickles down to form brooks, streams, and rivers, constituting what are called the hydrographic network. This immense polarized network channels the water toward a single receptacle: an ocean. Gravity dominates this entire step in the cycle because water tends to minimize its potential energy by running from high altitudes toward the reference point, that is, sea level.

The rate at which a molecule of water passes though the cycle is not random but is a measure of the relative size of the various reservoirs. If we define residence time as the average time for a water molecule to pass through one of the three reservoirs — atmosphere, continent, and ocean — we see that the times are very different. A water molecule stays, on average, eleven days in the atmosphere, one hundred years on a continent and forty thousand years in the ocean. This last figure shows the importance of the ocean as the principal reservoir of the hydrosphere but also the rapidity of water transport on the continents.

A vast chemical separation process takes places during the flow of water over the continents. Soluble ions such as calcium, sodium, potassium, and some magnesium are dissolved and transported. Insoluble ions such as aluminum, iron, and silicon stay where they are and form the thin, fertile skin of soil on which vegetation can grow. Sometimes soils are destroyed and transported mechanically during flooding. The erosion of the continents thus results from two closely linked and interdependent processes, chemical erosion and mechanical erosion. Their respective interactions and efficiency depend on different factors.

1. The word "modifying" in line 4 is closest in meaning to
(A) changing
(B) traveling
(C) describing
(D) destroying

2. The word "which" in line 5 refers to
(A) clouds
(B) oceans
(C) continents
(D) compounds

3. According to the passage , clouds are primarily formed by water
(A) precipitating onto the ground

(B) changing from a solid to a liquid state
(C) evaporating from the oceans
(D) being carried by wind

4. The passage suggests that the purpose of the "hydrographic network" (line 8) is to
(A) determine the size of molecules of water
(B) prevent soil erosion caused by flooding
(C) move water from the Earth's surface to the oceans
(D) regulate the rate of water flow from streams and rivers

5. What determines the rate at which a molecule of water moves through the cycle, as discussed in the third paragraph?
(A) The potential energy contained in water
(B) The effects of atmospheric pressure on chemical compounds
(C) The amounts of rainfall that fall on the continents
(D) The relative size of the water storage areas

6. The word "rapidity" in line 19 is closest in meaning to
(A) significance
(B) method
(C) swiftness
(D) reliability

7. The word "they" in line 24 refers to
(A) insoluble ions
(B) soluble ions
(C) soils
(D) continents

8. All of the following are example of soluble ions EXCEPT
(A) magnesium
(B) iron
(C) potassium
(D) calcium

9. The word "efficiency" in line 27 is closest in meaning to
(A) relationship
(B) growth
(C) influence
(D) effectiveness

PASSAGE 3

The Native Americans of northern California were highly skilled at basketry, using the reeds, grasses, barks, and roots they found around them to fashion articles of all sorts and sizes — not

only trays, containers, and cooking pots, but hats, boats, fish traps, baby carriers, and ceremonial objects.

Of all these experts, none excelled the Pomo — a group who lived on or near the coast during the 1800's, and whose descendants continue to live in parts of the same region to this day. They made baskets three feet in diameter and others no bigger than a thimble. The Pomo people were masters of decoration. Some of their baskets were completely covered with shell pendants; others with feathers that made the baskets' surfaces as soft as the breasts of birds. Moreover, the Pomo people made use of more weaving techniques than did their neighbors. Most groups made all their basketwork by twining — the twisting of a flexible horizontal material, called a weft, around stiffer vertical strands of material, the warp. Others depended primarily on coiling — a process in which a continuous coil of stiff material is held in the desired shape with tight wrapping of flexible strands. Only the Pomo people used both processes with equal ease and frequency. In addition, they made use of four distinct variations on the basic twining process, often employing more than one of them in a single article.

Although a wide variety of materials was available, the Pomo people used only a few. The warp was always made of willow, and the most commonly used weft was sedge root, a woody fiber that could easily be separated into strands no thicker than a thread. For color, the Pomo people used the bark of redbud for their twined work and dyed bullrush root for black in coiled work. Though other materials were sometimes used, these four were the staples in their finest basketry.

If the basketry materials used by the Pomo people were limited, the designs were amazingly varied. Every Pomo basketmaker knew how to produce from fifteen to twenty distinct patterns that could be combined in a number of different ways. 1. What best distinguished Pomo baskets from baskets of other groups?

(A) The range of sizes, shapes, and designs
(B) The unusual geometric
(C) The absence of decoration
(D) The rare materials used

2. The word "fashion" in line 2 is closest in meaning to

(A) maintain
(B) organize
(C) trade
(D) create

3. The Pomo people used each of the following materials to decorate baskets EXCEPT

(A) shells
(B) feathers
(C) leaves
(D) bark

4. What is the author's main point in the second paragraph?

(A) The neighbors of the Pomo people tried to improve on the Pomo basket weaving techniques.
(B) The Pomo people were the most skilled basket weavers in their region.

(C) The Pomo people learned their basket weaving techniques from other Native Americans.
(D) The Pomo baskets have been handed down for generations.

5. The word "others " in line 9 refers to
(A) masters
(B) baskets
(C) pendants
(D) surfaces

6. According to the passage , a weft is a
(A) tool for separating sedge root
(B) process used for coloring baskets
(C) pliable maternal woven around the warp
(D) pattern used to decorate baskets

7. According to the passage , what did the Pomo people use as the warp in their baskets?
(A) bullrush
(B) willow
(C) sedge
(D) redbud

8. The word "article" in line 17 is close in meaning to
(A) decoration
(B) shape
(C) design
(D) object

9. According to the passage . The relationship between redbud and twining is most similar to the relationship between
(A) bullrush and coiling
(B) weft and warp
(C) willow and feathers
(D) sedge and weaving

10. The word "staples" in line 23 is closest in meaning to
(A) combinations
(B) limitations
(C) accessories
(D) basic elements

11. The word "distinct" in lime 26 is closest in meaning to
(A) systematic
(B) beautiful
(C) different

(D) compatible

12. Which of the following statements about Pomo baskets can be best inferred from the passage ?
(A) Baskets produced by other Native Americans were less varied in design than those of the Pomo people.
(B) Baskets produced by Pomo weavers were primarily for ceremonial purposes.
(C) There were a very limited number of basketmaking materials available to the Pomo people.
(D) The basketmaking production of the Pomo people has increased over the years.

PASSAGE 4

The term "Hudson River school" was applied to the foremost representatives of nineteenth-century North American landscape painting. Apparently unknown during the golden days of the American landscape movement, which began around 1850 and lasted until the late 1860's, the Hudson River school seems to have emerged in the 1870's as a direct result of the struggle between the old and the new generations of artists, each to assert its own style as the representative American art. The older painters, most of whom were born before 1835, practiced in a mode often self-taught and monopolized by landscape subject matter and were securely established in and fostered by the reigning American art organization, the National Academy of Design. The younger painters returning home from training in Europe worked more with figural subject matter and in a bold and impressionistic technique; their prospects for patronage in their own country were uncertain, and they sought to attract it by attaining academic recognition in New York. One of the results of the conflict between the two factions was that what in previous years had been referred to as the "American", "native", or, occasionally, "New York" school — the most representative school of American art in any genre — had by 1890 become firmly established in the minds of critics and public alike as the Hudson River school.

The sobriquet was first applied around 1879. While it was not intended as flattering, it was hardly inappropriate. The Academicians at whom it was aimed had worked and socialized in New York, the Hudson's port city, and had painted the river and its shores with varying frequency. Most important, perhaps, was that they had all maintained with a certain fidelity a manner of technique and composition consistent with those of America's first popular landscape artist, Thomas Cole, who built a career painting the Catskill Mountain scenery bordering the Hudson River. A possible implication in the term applied to the group of landscapists was that many of them had, like Cole, lived on or near the banks of the Hudson. Further, the river had long served as the principal route to other sketching grounds favored by the Academicians, particularly the Adirondacks and the mountains of Vermont and New Hampshire.

1. What does the passage mainly discuss?
(A) The National Academy of Design
(B) Paintings that featured the Hudson River
(C) North American landscape paintings
(D) The training of American artists in European academies

2. Before 1870, what was considered the most representative kind of American painting?

(A) Figural painting
(B) Landscape painting
(C) Impressionistic painting
(D) Historical painting

3. The word "struggle" in line 5 is closest in meaning to
(A) connection
(B) distance
(C) communication
(D) competition

4. The word "monopolized" in line 7 is closest in meaning to
(A) alarmed
(B) dominated
(C) repelled
(D) pursued

5. According to the passage , what was the function of the National Academy of Design for the painters born before 1835?
(A) It mediated conflicts between artists.
(B) It supervised the incorporation of new artistic techniques.
(C) It determined which subjects were appropriate.
(D) It supported their growth and development.

6. The word "it" in line 12 refers to
(A) matter
(B) technique
(C) patronage
(D) country

7. The word "factions" in line 13 is closest in meaning to
(A) sides
(B) people
(C) cities
(D) images

8. The word "flattering" in line 18 is closest in meaning to
(A) expressive
(B) serious
(C) complimentary
(D) flashy

9. Where did the younger generation of painters receive its artistic training?
(A) In Europe

(B) In the Adirondacks
(C) In Vermont
(D) In New Hampshire

PASSAGE 5

Perhaps the most obvious way artistic creation reflects how people live is by mirroring the environment — the materials and technologies available to a culture. Stone, wood, tree bark, clay, and sand are generally available materials. In addition, depending on the locality, other resources may be accessible: shells, horns, gold, copper, and silver. The different uses to which societies put these materials are of interest to anthropologists who may ask, for example, why people choose to use clay and not copper when both items are available. Although there are no conclusive answers yet, the way in which a society views its environment is sometimes apparent in its choice and use of artistic materials. The use of certain metals, for example, may be reserved for ceremonial objects of special importance. Or the belief in the supernatural powers of a stone or tree may cause a sculptor to be sensitive to that material.

What is particularly meaningful to anthropologist is the realization that although the materials available to a society may to some extent limit or influence what it can do artistically, the materials by no means determine what is done. Why do the artists in Japanese society rake sand into patterns; and the artists in Roman society melt sand to form glass? Moreover, even when the same material is used in the same way by members of different societies, the form or style of the work varies enormously from culture to culture. A society may simply choose to represent objects or phenomena that are important to its population. An examination of the art of the Middle Ages tells us something about the medieval preoccupation with theological doctrine. In addition to revealing the primary concerns of a society, the content of that society's art may also reflect the culture's social stratification.

1. According to the passage , gold, copper, and silver are
(A) more difficult to handle than wood and
(B) of their stable social conditions
(C) of the unique stylistic features of their art
(D) available only in specific locations

2. The word "conclusive" in line 7 is closest in meaning to
(A) definitive
(B) controversial
(C) concurrent
(D) realistic

3. The word "apparent" in line 8 is closest in meaning to
(A) attractive
(B) logical
(C) evident
(D) distinct

4. Why does the author mention the "supernatural powers of a stone or tree" in line 10?
(A) to show that some sculptors avoid working with specific materials
(B) to emphasize the unusual properties of certain materials
(C) as an example of how art can be influenced by cultural beliefs
(D) as an illustration of the impact of the environment on religious beliefs

5. The word "it" in line 13 refers to
(A) realization
(B) society
(C) extent
(D) influence

6. It can be inferred that the author mentions the Japanese and Roman societies because
(A) they influenced each other stone
(B) commonly used by artists in all societies
(C) essential to create ceremonial objects
(D) they used the same artistic material in very different ways

7. According to the passage , all of the following statements about sand are true EXCEPT
(A) It is used to create glass.
(B) Roman artists mix it into their paints.
(C) Its use varies from culture to culture.
(D) Japanese artists use it to create artistic patterns.

8. The word "Moreover" in line 16 is closest in meaning to
(A) similarly
(B) in addition
(C) in contrast
(D) frequently

9. The word "preoccupation" in line 20 is closest in meaning to
(A) involvement
(B) separation
(C) relationship
(D) argument

10. The word "primary" in line 21 is closest in meaning to
(A) discrete
(B) preliminary
(C) ideal
(D) fundamental

PASSAGE 6

Potash (the old name for potassium carbonate) is one of the two alkalis (the other being soda, sodium carbonate) that were used from remote antiquity in the making of glass, and from the early

Middle Ages in the making of soap: the former being the product of heating a mixture of alkali and sand, the latter a product of alkali and vegetable oil. Their importance in the communities of colonial North America need hardly be stressed.

Potash and soda are not interchangeable for all purposes, but for glass- or soap-making either would do. Soda was obtained largely from the ashes of certain Mediterranean sea plants, potash from those of inland vegetation. Hence potash was more familiar to the early European settlers of the North American continent.

The settlement at Jamestown in Virginia was in many ways a microcosm of the economy of colonial North America, and potash was one of its first concerns. It was required for the glassworks, the first factory in the British colonies, and was produced in sufficient quantity to permit the inclusion of potash in the first cargo shipped out of Jamestown. The second ship to arrive in the settlement from England included among its passengers experts in potash making.

The method of making potash was simple enough. Logs was piled up and burned in the open, and the ashes collected. The ashes were placed in a barrel with holes in the bottom, and water was poured over them. The solution draining from the barrel was boiled down in iron kettles. The resulting mass was further heated to fuse the mass into what was called potash.

In North America, potash making quickly became an adjunct to the clearing of land for agriculture, for it was estimated that as much as half the cost of clearing land could be recovered by the sale of potash. Some potash was exported from Maine and New Hampshire in the seventeenth century, but the market turned out to be mainly domestic, consisting mostly of shipments from the northern to the southern colonies. For despite the beginning of the trade at Jamestown and such encouragements as a series of acts "to encourage the making of potash," beginning in 1707 in South Carolina, the softwoods in the South proved to be poor sources of the substance.

1. What aspect of potash does the passage mainly discuss?
(A) How it was made
(B) Its value as a product for export
(C) How it differs from other alkalis
(D) Its importance in colonial North America

2. All of the following statements are true of both potash and soda EXPECT:
(A) They are alkalis.
(B) They are made from sea plants.
(C) They are used in making soap.
(D) They are used in making glass.

3. They phrase "the latter" in line 4 refers to
(A) alkali
(B) glass
(C) sand
(D) soap

4. The word "stressed" in line 6 is closest in meaning to
(A) defined

(B) emphasized
(C) adjusted
(D) mentioned

5. The word "interchangeable" in line 7 is closest in meaning to
(A) convenient
(B) identifiable
(C) equivalent
(D) advantageous

6. It can be inferred from the passage that potash was more common than soda in colonial North America because
(A) the materials needed for making soda were not readily available
(B) making potash required less time than making soda
(C) potash was better than soda for making glass and soap
(D) the colonial glassworks found soda more difficult to use

7. According to paragraph 4, all of the following were needed for making potash EXCEPT
(A) wood
(B) fire
(C) sand
(D) water

8. The word "adjunct" in line 22 is closest in meaning to
(A) addition
(B) answer
(C) problem
(D) possibility

9. According to the passage , a major benefit of making potash was that
(A) it could be exported to Europe in exchange for other goods
(B) it helped finance the creation of farms
(C) it could be made with a variety of materials
(D) stimulated the development of new ways of glassmaking

10. According to paragraph 5, the softwoods in the South posed which of the following problems for southern settles?
(A) The softwoods were not very plentiful.
(B) The softwoods could not be used to build houses.
(C) The softwoods were not very marketable.
(D) The softwoods were not very useful for making potash.

PASSAGE 7
(20)

As Philadelphia grew from a small town into a city in the first half of the eighteenth century, it became an increasingly important marketing center for a vast and growing agricultural hinterland. Market days saw the crowded city even more crowded, as farmers from within a radius of 24 or more kilometers brought their sheep, cows, pigs, vegetables, cider, and other products for direct sale to the townspeople. The High Street Market was continuously enlarged throughout the period until 1736, when it reached from Front Street to Third. By 1745 New Market was opened on Second Street between Pine and Cedar. The next year the Callowhill Market began operation.

Along with market days, the institution of twice-yearly fairs persisted in Philadelphia even after similar trading days had been discontinued in other colonial cities. The fairs provided a means of bringing handmade goods from outlying places to would-be buyers in the city. Linens and stockings from Germantown, for example, were popular items.

Auctions were another popular form of occasional trade. Because of the competition, retail merchants opposed these as well as the fairs. Although governmental attempts to eradicate fairs and auctions were less than successful, the ordinary course of economic development was on the merchants' side, as increasing business specialization became the order of the day. Export merchants became differentiated from their importing counterparts, and specialty shops began to appear in addition to general stores selling a variety of goods.

One of the reasons Philadelphia's merchants generally prospered was because the surrounding area was undergoing tremendous economic and demographic growth. They did their business, after all, in the capital city of the province. Not only did they cater to the governor and his circle, but citizens from all over the colony came to the capital for legislative sessions of the assembly and council and the meetings of the courts of justice.

1. What does the passage mainly discuss?
(A) Philadelphia's agriculture importance
(B) Philadelphia's development as a marketing center
(C) The sale of imported goods in Philadelphia
(D) The administration of the city of Philadelphia

2. It can be inferred from the passage that new markets opened in Philadelphia because
(A) they provided more modem facilities than older markets
(B) the High Street Market was forced to close
(C) existing markets were unable to serve the growing population
(D) farmers wanted markets that were closer to the farms.

3. The word "hinterland " in line 3 is closest in meaning to
(A) tradition
(B) association
(C) produce
(D) region

4. The word "it" in line 6 refers to
(A) the crowded city
(B) a radius
(C) the High Street Market

(D) the period

5. The word "persisted" in line 9 is closest in meaning to
(A) returned
(B) started
(C) declined
(D) continued

6. According to the passage , fairs in Philadelphia were held
(A) on the same day as market says
(B) as often as possible
(C) a couple of times a year
(D) whenever the government allowed it

7. It can be inferred that the author mentions "Linens and stockings" in line 12 to show that they were items that
(A) retail merchants were not willing to sell
(B) were not available in the stores in Philadelphia
(C) were more popular in Germantown man in Philadelphia
(D) could easily be transported

8. The word "eradicate" in line 15 is closest in meaning to
(A) eliminate
(B) exploit
(C) organize
(D) operate

9. What does the author mean by stating in lines 15-16 that "economic development was on the merchants' side "?
(A) Merchants had a strong impact on economic expansion.
(B) Economic forces allowed merchants to prosper.
(C) Merchants had to work together to achieve economic independence
(D) Specialty shops near large markets were more likely to be economically successful.

10. The word "undergoing" in line 21 is closest in meaning to
(A) requesting
(B) experiencing
(C) repeating
(D) including

PASSAGE 8

The canopy, the upper level of the trees in the rain forest, holds a plethora of climbing

mammals of moderately large size, which may include monkeys, cats, civets, and porcupines. Smaller species, including such rodents as mice and small squirrels, are not as prevalent overall in high tropical canopies as they are in most habitats globally.

Small mammals, being warm blooded, suffer hardship in the exposed and turbulent environment of the uppermost trees. Because a small body has more surface area per unit of weight than a large one of similar shape, it gains or loses heat more swiftly. Thus, in the trees, where shelter from heat and cold may be scarce and conditions may fluctuate, a small mammal may have trouble maintaining its body temperature.

Small size makes it easy to scramble among twigs and branches in the canopy for insects, flowers, or fruit, but small mammals are surpassed, in the competition for food, by large ones that have their own tactics for browsing among food-rich twigs. The weight of a gibbon (a small ape) hanging below a branch arches the terminal leaves down so that fruit-bearing foliage drops toward the gibbon's face. Walking or leaping species of a similar or even larger size access the outer twigs either by snapping off and retrieving the whole branch or by clutching stiff branches with the feet or tail and plucking food with their hands.

Small climbing animals may reach twigs readily, but it is harder for them than for large climbing animals to cross the wide gaps from on tree crown to the next that typify the high canopy. A macaque or gibbon can hurl itself farther than a mouse can: it can achieve a running start, and it can more effectively use a branch as a springboard, even bouncing on a climb several times before jumping. The forward movement of a small animal is seriously reduced by the air friction against the relatively large surface area of its body. Finally, for the many small mammals that supplement their insect diet with fruits or seeds, an inability to span open gaps between tree crowns may be problematic, since trees that yield these foods can be sparse.

1. The passage answers which of the following questions?

(A) How is the rain forest different from other habitats?

(B) How does an animal's body size influence an animal's need for food?

(C) Why does the rain forest provide an unusual variety of food for animals?

(D) Why do large animals tend to dominate the upper canopy of the rain forest?

2. Which of the following animals is less common in the upper canopy than in other environments?

(A) Monkeys

(B) Cats

(C) Porcupines

(D) Mice

3. The word "they" in line 4 refers to

(A) trees

(B) climbing mammals of moderately large size

(C) smaller species

(D) high tropical canopies

4. According to paragraph 2, which of the following is true about the small mammals in the rain forest?

(A) They have body shapes that are adapted to live in the canopy.
(B) They prefer the temperature and climate of the canopy to that of other environments.
(C) They have difficulty with the changing conditions in the canopy.
(D) They use the trees of the canopy for shelter from heat and cold.

5. In discussing animal size in paragraph 3, the author indicates that
(A) small animals require proportionately more food than larger animals do
(B) a large animal's size is an advantage in obtaining food in the canopy
(C) small animals are often attacked by large animals in the rain forest
(D) small animals and large animals are equally adept at obtaining food in the canopy

6. The word "typify" in line 19 is closest in meaning to
(A) resemble
(B) protect
(C) characterize
(D) divide

7. According to paragraph 4, what makes jumping from one tree crown to another difficult for small mammals?
(A) Air friction against the body surface
(B) The thickness of the branches
(C) The dense leaves of the tree crown
(D) The inability to use the front feet as hands

8. The word "supplement" in line 24 is closest in meaning to
(A) control
(B) replace
(C) look for
(D) add to

9. Which of the following terms is defined in the passage ?
(A) canopy (line 1)
(B) warm blooded (line 5)
(C) terminal leaves (line 13)
(D) springboard (line 21)

PASSAGE 9

Prehistoric mammoths have been preserved in the famous tar pits of Rancho La Brea (Brea is the Spanish word for tar) in what is now the heart of Los Angeles, California. These tar pits have been known for centuries and were formerly mined for their natural asphalt, a black or brown petroleum-like substance. Thousands of tons were extracted before 1875, when it was first noticed that the tar contained fossil remains. Major excavations were undertaken that established the

significance of this remarkable site. The tar pits were found to contain the remains of scores of species of animals from the last 30,000 years of the Ice Age.

Since then, over 100 tons of fossils, 1.5 million from vertebrates, 2.5 million from invertebrates, have been recovered, often in densely concentrated and tangled masses. The creatures found range from insects and birds to giant ground sloth's, but a total of 17 proboscides (animals with a proboscis or long nose) — including mastodons and Columbian mammoths — have been recovered, most of them from Pit 9, the deepest bone-bearing deposit, which was excavated in 1914. Most of the fossils date to between 40,000 and 10,000 years ago.

The asphalt at La Brea seeps to the surface, especially in the summer, and forms shallow puddles that would often have been concealed by leaves and dust. Unwary animals would become trapped on these thin sheets of liquid asphalt, which are extremely sticky in warm weather. Stuck, the unfortunate beasts would die of exhaustion and hunger or fall prey to predators that often also became stuck.

As the animals decayed, more scavengers would be attracted and caught in their turn. Carnivores greatly outnumber herbivores in the collection: for every large herbivore, there is one saber-tooth cat, a coyote, and four wolves. The fact that some bones are heavily weathered shows that some bodies remained above the surface for weeks or months. Bacteria in the asphalt would have consumed some of the tissues other than bones, and the asphalt itself would dissolve what was left, at the same time impregnating and beautifully preserving the saturated bones, rendering them dark brown and shiny.

1. What aspect of the La Brea tar pits does the passage mainly discuss?
(A) The amount of asphalt that was mined there
(B) The chemical and biological interactions between asphalt and animals
(C) The fossil remains that have been found there
(D) Scientific methods of determining the age of tar pits

2. In using the phrase "the heart of Los Angeles" in line 2, the author is talking about the city's
(A) beautiful design
(B) central area
(C) basic needs
(D) supplies of natural asphalt

3. The word "noticed" in line 5 closest in meaning to
(A) predicted
(B) announced
(C) corrected
(D) observed

4. The word "tangled" in line 10 is closest in meaning to
(A) buried beneath
(B) twisted together
(C) quickly formed
(D) easily dated

5. The word "them" in line 13 refers to
(A) insects
(B) birds
(C) cloths
(D) proboscideans

6. How many proboscideans have been found at the La Brea tar pits?
(A) 9
(B) 17
(C) 1.5 million
(D) 2.5 million

7. The word "concealed" in line 17 is closest in meaning to
(A) highlighted
(B) covered
(C) transformed
(D) contaminated

8. Why does the author mention animals such as coyotes and wolves in paragraph 4?
(A) To give examples of animals that are classified as carnivores
(B) To specify the animals found least commonly at La Brea
(C) To argue that these animals were especially likely to avoid extinction.
(D) To define the term "scavengers"

PASSAGE 10

One area of paleoanthropological study involves the eating and dietary habits of hominids, erect bipedal primates — including early humans. It is clear that at some stage of history, humans began to carry their food to central places, called home bases, where it was shared and consumed with the young and other adults. The use of home bases is a fundamental component of human social behavior; the common meal served at a common hearth is a powerful symbol, a mark of social unity. Home base behavior does not occur among nonhuman primates and is rare among mammals. It is unclear when humans began to use home bases, what kind of communications and social relations were involved, and what the ecological and food-choice contexts of the shift were. Work on early tools, surveys of paleoanthropological sites, development and testing of broad ecological theories, and advances in comparative primatology are contributing to knowledge about this central chapter in human prehistory.

One innovative approach to these issues involves studying damage and wear on stone tools. Researchers make tools that replicate excavated specimens as closely as possible and then try to use them as the originals might have been used, in woodcutting, hunting, or cultivation. Depending on how the tool is used, characteristic chippage patterns and microscopically distinguishable polishes develop near the edges. The first application of this method of analysis to stone tools that are 1.5 million to 2 million years old indicates that, from the start, an important function of early stone tools was to extract highly nutritious food — meat and marrow — from

large animal carcasses. Fossil bones with cut marks caused by stone tools have been discovered lying in the same 2-million-year-old layers that yielded the oldest such tools and the oldest hominid specimens (including humans) with larger than ape-sized brains. This discovery increases scientists' certainty about when human ancestors began to eat more meat than present-day nonhuman primates. But several questions remain unanswered: how frequently meat eating occurred; what the social implications of meat eating were; and whether the increased use of meat coincides with the beginnings of the use of home bases.

1. The passage mainly discusses which of the following aspects of hominid behavior?
(A) Changes in eating and dietary practices
(B) The creation of stone hunting tools
(C) Social interactions at home bases
(D) Methods of extracting nutritious food from carcasses

2. According to the passage , bringing a meal to a location to be shared by many individuals is
(A) an activity typical of nonhuman primates
(B) a common practice among animals that eat meat
(C) an indication of social unity
(D) a behavior that encourages better dietary habits

3. The word "consumed" in line 4 is closest in meaning to
(A) prepared
(B) stored
(C) distributed
(D) eaten

4. According to paragraph 2, researchers make copies of old stone tools in order to
(A) protect the old tools from being worn out
(B) display examples of the old tools in museums
(C) test theories about how old tools were used
(D) learn how to improve the design of modern tools

5. In paragraph 2, the author mentions all of the following as examples of ways in which early stone tools were used EXCEPT to
(A) build home bases
(B) obtain food
(C) make weapons
(D) shape wood

6. The word "innovative" in line 13 is closest in meaning to
(A) good
(B) new
(C) simple
(D) costly

7. The word "them" in line 15 refers to
(A) issues
(B) researchers
(C) tools
(D) specimens

8. The author mentions "characteristic chippage patterns" in line 16 as an example of
(A) decorations cut into wooden objects
(B) differences among tools made of various substances
(C) impressions left on prehistoric animal bones
(D) indications of wear on stone tools

9. The word "extract" in line 19 is closest in meaning to
(A) identify
(B) remove
(C) destroy
(D) compare

10. The word "whether" in line 26 is closest in meaning to
(A) if
(B) how
(C) why
(D) when

PASSAGE 11

Plants are subject to attack and infection by a remarkable variety of symbiotic species and have evolved a diverse array of mechanisms designed to frustrate the potential colonists. These can be divided into preformed or passive defense mechanisms and inducible or active systems. Passive plant defense comprises physical and chemical barriers that prevent entry of pathogens, such as bacteria, or render tissues unpalatable or toxic to the invader. The external surfaces of plants, in addition to being covered by an epidermis and a waxy cuticle, often carry spiky hairs known as trichomes, which either prevent feeding by insects or may even puncture and kill insect larvae. Other trichomes are sticky and glandular and effectively trap and immobilize insects.

If the physical barriers of the plant are breached, then preformed chemicals may inhibit or kill the intruder, and plant tissues contain a diverse array of toxic or potentially toxic substances, such as resins, tannins, glycosides, and alkaloids, many of which are highly effective deterrents to insects that feed on plants. The success of the Colorado beetle in infesting potatoes, for example, seems to be correlated with its high tolerance to alkaloids that normally repel potential pests. Other possible chemical defenses, while not directly toxic to the parasite, may inhibit some essential step in the establishment of a parasitic relationship. For example, glycoproteins in plant cell walls may inactivate enzymes that degrade cell walls. These enzymes are often produced by bacteria and fungi.

Active plant defense mechanisms are comparable to the immune system of vertebrate animals, although the cellular and molecular bases are fundamentally different. Both, however, are triggered in reaction to intrusion, implying that the host has some means of recognizing the presence of a foreign organism. The most dramatic example of an inducible plant defense reaction is the hypersensitive response. In the hypersensitive response, cells undergo rapid necrosis — that is, they become diseased and die — after being penetrated by a parasite; the parasite itself subsequently ceases to grow and is therefore restricted to one or a few cells around the entry site. Several theories have been put forward to explain the basis of hypersensitive resistance.

1. What does the passage mainly discuss?
(A) The success of parasites in resisting plant defense mechanisms
(B) Theories on active plant defense mechanisms
(C) How plant defense mechanisms function
(D) How the immune system of animals and the defense mechanisms of plants differ

2. The phrase "subject to" in line 1 is closest in meaning to
(A) susceptible to
(B) classified by
(C) attractive to
(D) strengthened by

3. The word "puncture" in line 8 is closest in meaning to
(A) pierce
(B) pinch
(C) surround
(D) cover .

4. The word "which" in line 12 refers to
(A) tissues
(B) substances
(C) barriers
(D) insects

5. Which of the following substances does the author mention as NOT necessarily being toxic to the Colorado beetle?
(A) resins
(B) tannins
(C) glycosides
(D) alkaloids

6. Why does the author mention "glycoproteins" in line 17?
(A) to compare plant defense mechanisms to the immune system of animals
(B) to introduce the discussion of active defense mechanisms in plants
(C) to illustrate how chemicals function in plant defense
(D) to emphasize the importance of physical barriers in plant defense

7. The word "dramatic" in line 23 could best be replaced by
(A) striking
(B) accurate
(C) consistent
(D) appealing

8. Where in the passage does the author describe an active plant-defense reaction?
(A) Lines 1-3
(B) Lines 4-6
(C) Lines 13-15
(D) Lines 24-27

9. The passage most probably continues with a discussion of theories on
(A) the basis of passive plant defense
(B) how chemicals inhibit a parasitic relationship.
(C) how plants produce toxic chemicals
(D) the principles of the hypersensitive response.

PASSAGE 12
(25)

Among the species of seabirds that use the windswept cliffs of the Atlantic coast of Canada in the summer to mate, lay eggs, and rear their young are common murres, Atlantic puffins, black-legged kittiwakes, and northern gannets. Of all the birds on these cliffs, the black-legged kittiwake gull is the best suited for nesting on narrow ledges. Although its nesting habits are similar to those of gulls that nest on flat ground, there are a number of important differences related to the cliff-nesting habit.

The advantage of nesting on cliffs is the immunity it gives from foxes, which cannot scale the sheer rocks, and from ravens and other species of gulls, which have difficulty in landing on narrow ledges to steal eggs. This immunity has been followed by a relaxation of the defenses, and kittiwakes do not react to predators nearly as fiercely as do ground-nesting gulls. A colony of Bonaparte's gulls responds to the appearance of a predatory herring gull by flying up as a group with a clamor of alarm calls, followed by concerted mobbing, but kittiwakes simply ignore herring gulls, since they pose little threat to nests on cliffs. Neither do kittiwakes attempt to conceal their nest. Most gulls keep the nest area clear of droppings, and remove empty eggshells after the chicks have hatched, so that the location of the nest is not given away. Kittiwakes defecate over the edge of the nest, which keeps it clean, but this practice, as well as their tendency to leave the nest littered with eggshells, makes its location very conspicuous.

On the other hand, nesting on a narrow ledge has its own peculiar problems, and kittiwake behavior has become adapted to overcome them. The female kittiwake sits when mating, whereas other gulls stand, so the pair will not overbalance and fall off the ledge. The nest is a deep cup, made of mud or seaweed, to hold the eggs safely, compared with the shallow scrape of other gulls,

and the chicks are remarkably immobile until fully grown. They do not run from their nests when approached, and if they should come near to the cliff edge, they instinctively turn back.

1. What aspect of the kittiwake gull does the passage mainly discuss?
(A) Its defensive behavior
(B) It interactions with other gull species
(C) Its nesting habits
(D) Its physical difference from other gull species

2. The word "rear" in line 2 is closest in meaning to
(A) visit
(B) watch
(C) reverse
(D) raise

3. The word "scale" in line 8 is closest in meaning to
(A) climb
(B) avoid
(C) approach
(D) measure

4. The word "immunity" in line 9 is closest in meaning to
(A) distance
(B) transition
(C) protection
(D) reminder

5. Why is it difficult for ravens to steal the kittiwakes' eggs?
(A) The kittiwakes can see the ravens approaching the nest.
(B) The ravens cannot land on the narrow ledges where kittiwakes nest.
(C) The kittiwakes' eggs are too big for the ravens to carry.
(D) The female kittiwakes rarely leave the nest.

6. The author mentions that eggshells litter around the nests of kittiwakes in order to
(A) demonstrate that kittiwakes are not concerned about predators
(B) prove how busy kittiwakes are in caring for their offspring
(C) show a similarity to other types of gulls
(D) illustrate kittiwakes' lack of concern for their chicks

7. According to the passage , it can be inferred that which of the following birds conceal their nest?
(A) Bonaparte's gulls
(B) Atlantic puffins
(C) Kittiwake gulls
(D) Northern gannets

8. The word "it" in line 17 refers to
(A) location
(B) edge
(C) nest
(D) practice

9. The word "conspicuous" in line 18 is closest in meaning to
(A) disordered
(B) suspicious
(C) noticeable
(D) appealing

10. The phrase "On the other hand" in line 19 is closest in meaning to
(A) therefore
(B) however
(C) for example
(D) by no means

PASSAGE 13

Any rock that has cooled and solidified from a molten state is an igneous rock. Therefore, if the Earth began as a superheated sphere in space, all the rocks making up its crust may well have been igneous and thus the ancestors of all other rocks. Even today, approximately 95 percent of the entire crust is igneous. Periodically, molten material wells out of the Earth's interior to invade the surface layers or to flow onto the surface itself. This material cools into a wide variety of igneous rocks. In the molten state, it is called magma as it pushes into the crust and lava when it runs out onto the surface.

All magma consists basically of a variety of silicate minerals (high in silicon-oxygen compounds), but the chemical composition of any given flow may differ radically from that of any other. The resulting igneous rocks will reflect these differences. Igneous rocks also vary in texture as well as chemistry. Granite, for instance, is a coarse-grained igneous rock whose individual mineral crystals have formed to a size easily seen by the naked eye. A slow rate of cooling has allowed the crystals to reach this size. Normally, slow cooling occurs when the crust is invaded by magma that remains buried well below the surface. Granite may be found on the surface of the contemporary landscape, but from its coarse texture we know that it must have formed through slow cooling at a great depth and later been laid bare by erosion. Igneous rocks with this coarse-grained texture that formed at depth are called plutonic.

On the other hand, if the same magma flows onto the surface and is quickly cooled by the atmosphere, the resulting rock will be fine-grained and appear quite different from granite, although the chemical composition will be identical. This kind of rock is called rhyolite. The most finely grained igneous rock is volcanic glass or obsidian, which has no crystals. Some researchers believe this is because of rapid cooling; others believe it is because of a lack of water vapor and

other gases in the lava. The black obsidian cliffs of Yellowstone National Park are the result of a lava flow of basalt running head on into a glacier. Some of the glacier melted on contact, but suddenly there also appeared a huge black mass of glassy stone.

1. In the first paragraph, the author mentions that 95% of the Earth's crust is composed of igneous rock to support the idea that
(A) the Earth began as a molten mass
(B) a thin layer of magma flows beneath the Earth's crust
(C) the minerals found in igneous rock are very common
(D) igneous rock is continually being formed

2. The word "invade" in line 5 is closest in meaning to
(A) move into
(B) neutralize
(C) cover
(D) deposit

3. The word "contemporary" in line 15 is closest in meaning to
(A) vast
(B) natural
(C) existing
(D) uneven

4. The word "it" in line 16 refers to
(A) granite
(B) surface
(C) landscape
(D) texture

5. Granite that has been found above ground has been
(A) pushed up from below the crust by magma
(B) produced during a volcanic explosion
(C) gradually exposed due to erosion
(D) pushed up by the natural shifting of the Earth

6. Which of the following is produced when magma cools rapidly?
(A) granite
(B) plutonic rock
(C) rhyolite
(D) mineral crystals

7. The word "finely" in line 22 is closest in meaning to
(A) minutely
(B) loosely

(C) sensitively
(D) purely

8. Which of the following is another name for volcanic glass?
(A) Plutonic rock
(B) Crystal
(C) Lava
(D) Obsidian

PASSAGE 14

Television has transformed politics in the United States by changing the way in which information is disseminated, by altering political campaigns, and by changing citizen's patterns of response to politics. By giving citizens independent access to the candidates, television diminished the role of the political party in the selection of the major party candidates. By centering politics on the person of the candidate, television accelerated the citizen's focus on character rather than issues.

Television has altered the forms of political communication as well. The messages on which most of us rely are briefer than they once were. The stump speech, a political speech given by traveling politicians and lasting 11/2 to 2 hours, which characterized nineteenth-century political discourse, has given way to the 30-second advertisement and the 10 second "sound bite" in broadcast news. Increasingly the audience for speeches is not that standing in front of the politician but rather the viewing audience who will hear and see a snippet of the speech on the news.

In these abbreviated forms, much of what constituted the traditional political discourse of earlier ages has been lost. In 15 or 30 seconds, a speaker cannot establish the historical context that shaped the issue in question, cannot detail the probable causes of the problem, and cannot examine alternative proposals to argue that one is preferable to others. In snippets, politicians assert but do not argue.

Because television is an intimate medium, speaking through it require a changed political style that was more conversational, personal, and visual than that of the old-style stump speech. Reliance on television means that increasingly our political world contains memorable pictures rather than memorable words. Schools teach us to analyze words and print. However, in a word in which politics is increasingly visual, informed citizenship requires a new set of skills.

Recognizing the power of television's pictures, politicians craft televisual, staged events, called pseudo-event, designed to attract media coverage. Much of the political activity we see on television news has been crafted by politicians, their speechwriters, and their public relations advisers for televised consumption. Sound bites in news and answers to questions in debates increasingly sound like advertisements.

1. What is the main point of the passage ?
(A) Citizens in the United States are now more informed about political issues because of television coverage.
(B) Citizens in the United States prefer to see politicians on television instead of in person.
(C) Politics in the United States has become substantially more controversial since the introduction of television.

(D) Politics in the United States has been significantly changed by television.

2. The word "disseminated" in line 2 is closest in meaning to
(A) analyzed
(B) discussed
(C) spread
(D) stored

3. It can be inferred that before the introduction of television, political parties
(A) had more influence over the selection of political candidates
(B) spent more money to promote their political candidates
(C) attracted more members
(D) received more money

4. The word "accelerated" in line 5 is closest in meaning to
(A) allowed
(B) increased
(C) required
(D) started

5. The author mentions the "stump speech" in line 7 as an example of
(A) an event created by politicians to attract media attention
(B) an interactive discussion between two politicians
(C) a kind of political presentation typical of the nineteenth century
(D) a style of speech common to televised political events

6. The phrase "given way to" in line 10 is closest in meaning to
(A) added interest to
(B) modified
(C) imitated
(D) been replaced by

7. The word "that" in line 12 refers to
(A) audience
(B) broadcast news
(C) politician
(D) advertisement

8. According to the passage , as compared with televised speeches, traditional political discourse was more successful at
(A) allowing news coverage of political candidates
(B) placing political issues within a historical context
(C) making politics seem more intimate to citizens
(D) providing detailed information about a candidates private behavior

9. The author states that "politicians assert but do not argue" (line 18) in order to suggest that politicians
(A) make claims without providing reasons for the claims
(B) take stronger positions on issues than in the past
(C) enjoy explaining the issue to broadcasters
(D) dislike having to explain their own positions on issues to citizens

10. The word "Reliance" in line 21 is closest in meaning to
(A) abundance
(B) clarification
(C) dependence
(D) information

11. The purpose of paragraph 4 is to suggest that
(A) politicians will need to learn to become more personal when meeting citizens
(B) politicians who are considered very attractive are favored by citizens over politicians who are less attractive
(C) citizens tend to favor a politician who analyzed the issue over one who does not
(D) citizens will need to learn how to evaluate visual political images in order to become better informed

12. According to paragraph 5, staged political events are created so that politicians can
(A) create more time to discuss political issues
(B) obtain more television coverage for themselves
(C) spend more time talking to citizens in person
(D) engages in debates with their opponents

13. Which of the following statements is supported by the passage ?
(A) Political presentations today are more like advertisements than in the past.
(B) Politicians today tend to be more familiar with the views of citizens than in the past.
(C) Citizens today are less informed about a politician's character than in the past.
(D) Political speeches today focus more on details about issues than in the past.

PASSAGE 15

Fungi, of which there are over 100,000 species, including yeasts and other single-celled organisms as well as the common molds and mushrooms, were formerly classified as members of the plant kingdom. However, in reality they are very different from plants and today they are placed in a separate group altogether. The principal reason for this is that none of them possesses chlorophyll, and since they cannot synthesize their own carbohydrates, they obtain their supplies either from the breakdown of dead organic matter or from other living organisms. Furthermore the walls of fungal cells are not made of cellulose, as those of plants are, but of another complex sugarlike polymer called chitin, the material from which the hard outer skeletons of shrimps,

spiders, and insects are made. The difference between the chemical composition of the cell walls of fungi and those of plants is of enormous importance because it enables the tips of the growing hyphae, the threadlike cells of the fungus, to secrete enzymes that break down the walls of plant cells without having any effect on those of the fungus itself. It is these cellulose-destroying enzymes that enable fungi to attack anything made from wood, wood pulp, cotton, flax, or other plant material.

The destructive power of fungi is impressive. They are a major cause of structural damage to building timbers, a cause of disease in animals and humans, and one of the greatest causes of agricultural losses. Entire crops can be wiped out by fungal attacks both before and after harvesting. Some fungi can grow at +50℃, while others can grow at -5℃, so even food in cold storage may not be completely safe from them. On the other hand, fungi bring about the decomposition of dead organic matter, thus enriching the soil and returning carbon dioxide to the atmosphere. They also enter into a number of mutually beneficial relationships with plants and other organisms. In addition, fungi are the source of many of the most potent antibiotics used in clinical medicine, including penicillin.

1. What does paragraph 1 mainly discuss?
(A) differences between simple and complex fungi
(B) functions of chlorophyll in plants
(C) functions of sugar in the walls of fungal cells
(D) differences between fungi and plants

2. Which of the following is mentioned as a major change in how scientists approach the study of fungi?
(A) Fungi are no longer classified as plants
(B) Some single-cell organisms are no longer classified as fungi.
(C) New methods of species identification have been introduced
(D) Theories about the chemical composition of fungi have been revised.

3. The word "principal" in line 4 is closest in meaning to
(A) true
(B) main
(C) logical
(D) obvious

4. According to the passage , how do fungi obtain carbohydrates?
(A) The absorb carbohydrates from their own cell walls.
(B) They synthesize chlorophyll to produce carbohydrates.
(C) They produce carbohydrates by breaking down chitin.
(D) They acquire carbohydrates from other organic matter, both living and dead.

5. The passage mentions shrimps, spiders, and insects in line 9 because their skeletons
(A) can be destroyed by fungi
(B) have unusual chemical compositions
(C) contain a material found in the walls of fungal cells

(D) secrete the same enzymes as the walls of fungal cells do

6. Which of the following terms is defined in the passage ?
(A) "chlorophyll" (line 5)
(B) "polymer" (line 8)
(C) "hyphae" (line 12)
(D) "enzymes" (line 14)

7. The word "those" in line 13 refers to
(A) tips
(B) hyphae
(C) enzymes
(D) walls

8. Fungi have all of the following characteristics EXCEPT
(A) They grow hyphae.
(B) They secrete enzymes.
(C) They synthesize cellulose.
(D) They destroy crops.

9. The word "Entire" in line 18 is closest in meaning to
(A) certain
(B) whole
(C) mature
(D) diseased

10. The passage describes the negative effects of fungi on all the following EXCEPT
(A) buildings
(B) animals
(C) food
(D) soil

11. The phrase "bring about" in line 21 is closest in meaning to
(A) cause
(B) join
(C) take
(D) include

12. The passage mentions "penicillin" in line 25 as an example of
(A) a medicine derived from plants
(B) a beneficial use of fungi
(C) a product of the relationship between plants and fungi
(D) a type of fungi that grows at extreme temperatures.

PASSAGE 16

The first flying vertebrates were true reptiles in which one of the fingers of the front limbs became very elongated, providing support for a flap of stretched skin that served as a wing. These were the pterosaurs, literally the "winged lizards." The earliest pterosaurs arose near the end of the Triassic period of the Mesozoic Era, some 70 million years before the first known fossils of true birds occur, and they presumably dominated the skies until they were eventually displaced by birds. Like the dinosaurs, some the pterosaurs became gigantic; the largest fossil discovered is of an individual that had a wingspan of 50 feet or more, larger than many airplanes. These flying reptiles had large, tooth-filled jaws, but their bodies were small and probably without the necessary powerful muscles for sustained wing movement. They must have been expert gliders, not skillful fliers, relying on wind power for their locomotion.

Birds, despite sharing common reptilian ancestors with pterosaurs, evolved quite separately and have been much more successful in their dominance of the air. They are an example of a common theme in evolution, the more or less parallel development of different types of body structure and function for the same reason — in this case, for flight. Although the fossil record, as always, is not complete enough to determine definitively the evolutionary lineage of the birds or in as much detail as one would like, it is better in this case than for many other animal groups. That is because of the unusual preservation in a limestone quarry in southern Germany of Archaeopteryx, a fossil that many have called the link between dinosaurs and birds. Indeed, had it not been for the superb preservation of these fossils, they might well have been classified as dinosaurs. They have the skull and teeth of a reptile as well as a bony tail, but in the line-grained limestone in which these fossils occur there are delicate impressions of feathers and fine details of bone structure that make it clear that Archaeopteryx was a bird. All birds living today, from the great condors of the Andes to the tiniest wrens, trace their origin back to the Mesozoic dinosaurs.

1. What does the passage mainly discuss?
(A) Characteristics of pterosaur wings
(B) The discovery of fossil remains of Archaeopteryx
(C) Reasons for the extinction of early flying vertebrates
(D) The development of flight in reptiles and birds

2. Which of the following is true of early reptile wings?
(A) They evolved from strong limb muscles.
(B) They consisted of an extension of skin.
(C) They connected the front and back limbs.
(D) They required fingers of equal length.

3. The word "literally" in line 3 is closest in meaning to
(A) creating
(B) meaning
(C) related to
(D) simplified

4. It can be inferred from the passage that birds were probably dominant in the skies

(A) in the early Triassic period
(B) before the appearance of pterosaurs
(C) after the decline of pterosaurs
(D) before dinosaurs could be found on land.

5. The author mentions airplanes in line 8 in order to
(A) illustrate the size of wingspans in some pterosaurs
(B) compare the energy needs of dinosaurs with those of modern machines
(C) demonstrate the differences between mechanized flight and animal flight
(D) establish the practical applications of the study of fossils

6. The word "They" in line 10 refers to
(A) powerful muscles
(B) bodies
(C) jaws
(D) flying reptiles

7. According to the passage , pterosaurs were probably "not skillful fliers" (lines 10-11) because
(A) of their limited wingspan
(B) of their disproportionately large bodies
(C) they lacked muscles needed for extended flight
(D) climate conditions of the time provided insufficient wind power

8. In paragraph 2, the author discusses the development of flight in birds as resulting from
(A) a similarity in body structure to pterosaurs
(B) an evolution from pterosaurs
(C) the dominance of birds and pterosaurs over land animals
(D) a separate but parallel development process to that of pterosaurs

9. The word "classified" in line 21 is closest in meaning to
(A) perfected
(B) replaced
(C) categorized
(D) protected

10. Which of the following helped researchers determine that Archaeopteryx was not a dinosaur?
(A) Its tail
(B) Its teeth
(C) The shape of its skull
(D) Details of its bone structure

11. What is the significance of the discovery that was made in southern Germany?
(A) It is thought to demonstrate that birds evolved from dinosaurs.
(B) It is proof that the climate and soils of Europe have changed over time.

(C) It suggests that dinosaurs were dominant in areas rich in limestone.
(D) It supports the theory that Archaeopteryx was a powerful dinosaur.

PASSAGE 17

Aviculturists, people who raise birds for commercial sale, have not yet learned how to simulate the natural incubation of parrot eggs in the wild. They continue to look for better ways to increase egg production and to improve chick survival rates.

When parrots incubate their eggs in the wild, the temperature and humidity of the nest are controlled naturally. Heat is transferred from the bird's skin to the top portion of the eggshell, leaving the sides and bottom of the egg at a cooler temperature. This temperature gradient may be vital to successful hatching. Nest construction can contribute to this temperature gradient. Nests of loosely arranged sticks, rocks, or dirt are cooler in temperature at the bottom where the egg contacts the nesting material. Such nests also act as humidity regulators by allowing rain to drain into the bottom sections of the nest so that the eggs are not in direct contact with the water. As the water that collects in the bottom of the nest evaporates, the water vapor rises and is heated by the incubating bird, which adds significant humidity to the incubation environment.

In artificial incubation programs, aviculturists remove eggs from the nests of parrots and incubate them under laboratory conditions. Most commercial incubators heat the eggs fairly evenly from top to bottom, thus ignoring the bird's method of natural incubation, and perhaps reducing the viability and survivability of the hatching chicks. When incubators are not used, aviculturists sometimes suspend wooden boxes outdoors to use as nests in which to place eggs. In areas where weather can become cold after eggs are laid, it is very important to maintain a deep foundation of nesting material to act as insulator against the cold bottom of the box. If eggs rest against the wooden bottom in extremely cold weather conditions, they can become chilled to a point where the embryo can no longer survive. Similarly, these boxes should be protected from direct sunlight to avoid high temperatures that are also fatal to the growing embryo. Nesting material should be added in sufficient amounts to avoid both extreme temperature situations mentioned above and assure that the eggs have a soft, secure place to rest.

1. What is the main idea of the passage ?
(A) Nesting material varies according to the parrots' environment.
(B) Humidity is an important factor in incubating parrots' eggs.
(C) Aviculturists have constructed the ideal nest box for parrots.
(D) Wild parrots' nests provide information useful for artificial incubation.

2. The word "They" in line 2 refers to
(A) aviculturists
(B) birds
(C) eggs
(D) rates

3. According to paragraph 2, when the temperature of the sides and bottom of the egg are cooler

than the top, then
(A) there may be a good chance for successful incubation
(B) the embryo will not develop normally
(C) the incubating parent moves the egg to a new position.
(D) the incubation process is slowed down

4. According to paragraph 2, sticks, rocks, or dirt are used to
(A) soften the bottom of the nest for the newly hatched chick
(B) hold the nest together
(C) help lower the temperature at the bottom of the nest
(D) make the nest bigger

5. According to paragraph 2, the construction of the nest allows water to
(A) provide a beneficial source of humidity in the nest
(B) loosen the materials at the bottom of the nest
(C) keep the nest in a clean condition
(D) touch the bottom of the eggs

6. All of the following are part of a parrot's incubation method EXCEPT
(A) heating the water vapor as it rises from the bottom of the nest
(B) arranging nesting material at the bottom of the nest
(C) transferring heat from the parent to the top of the eggshell
(D) maintaining a constant temperature on the eggshell

7. The word "suspend" in line 18 is closest in meaning to
(A) build
(B) paint
(C) hang
(D) move

8. The word "fatal" in line 24 is closest in meaning to
(A) close
(B) deadly
(C) natural
(D) hot

9. The word "secure" in line 27 is closest in meaning to
(A) fresh
(B) dry
(C) safe
(D) warm

10. According to paragraph 3, a deep foundation of nesting material provides
(A) a constant source of humidity

(B) a strong nest box
(C) more room for newly hatched chicks
(D) protection against cold weather

11. Which of the following is a problem with commercial incubators?
(A) They lack the natural temperature changes of the outdoors.
(B) They are unable to heat the eggs evenly
(C) They do not transfer heat to the egg in the same way the parent bird does.
(D) They are expensive to operate.

12. Which of the following terms is defined in the passage ?
(A) Aviculturists (line 1)
(B) gradient (line 8)
(C) incubation (line 15)
(D) embryo (line 22)

PASSAGE 18
(30)

During the seventeenth and eighteenth centuries, almost nothing was written about the contributions of women during the colonial period and the early history of the newly formed United States. Lacking the right to vote and absent from the seats of power, women were not considered an important force in history. Anne Bradstreet wrote some significant poetry in the seventeenth century, Mercy Otis Warren produced the best contemporary history of the American Revolution, and Abigail Adams penned important letters showing she exercised great political influence over her husband, John, the second President of the United States. But little or no notice was taken of these contributions. During these centuries, women remained invisible in history books.

Throughout the nineteenth century, this lack of visibility continued, despite the efforts of female authors writing about women. These writers, like most of their male counterparts, were amateur historians. Their writings were celebratory in nature, and they were uncritical in their selection and use of sources.

During the nineteenth century, however, certain feminists showed a keen sense of history by keeping records of activities in which women were engaged. National, regional, and local women's organizations compiled accounts of their doings. Personal correspondence, newspaper clippings, and souvenirs were saved and stored. These sources from the core of the two greatest collections of women's history in the United States one at the Elizabeth and Arthur Schlesinger Library at Radcliff é College, and the other the Sophia Smith Collection at Smith College. Such sources have provided valuable materials for later generations of historians.

Despite the gathering of more information about ordinary women during the nineteenth century, most of the writing about women conformed to the "great women" theory of history, just as much of mainstream American history concentrated on "great men." To demonstrate that women were making significant contributions to American life, female authors singled out women leaders and wrote biographies, or else important women produced their autobiographies. Most of

these leaders were involved in public life as reformers, activists working for women's right to vote, or authors, and were not representative at all of the great of ordinary woman. The lives of ordinary people continued, generally, to be untold in the American histories being published.

1. What does the passage mainly discuss?
(A) The role of literature in early American histories
(B) The place of American women in written histories
(C) The keen sense of history shown by American women
(D) The "great women" approach to history used by American historians

2. The word "contemporary" in line 6 means that the history was
(A) informative
(B) written at that time
(C) thoughtful
(D) faultfinding

3. In the first paragraph, Bradstreet, Warren, and Adams are mentioned to show that
(A) a woman's status was changed by marriage
(B) even the contributions of outstanding women were ignored
(C) only three women were able to get their writing published
(D) poetry produced by women was more readily accepted than other writing by women

4. The word "celebratory" in line 12 means that the writings referred to were
(A) related to parties
(B) religious
(C) serious
(D) full of praise

5. The word "they" in line 12 refers to
(A) efforts
(B) authors
(C) counterparts
(D) sources

6. In the second paragraph, what weakness in nineteenth-century histories does the author point out?
(A) They put too much emphasis on daily activities
(B) They left out discussion of the influence of money on politics.
(C) The sources of the information they were based on were not necessarily accurate.
(D) They were printed on poor-quality paper.

7. On the basis of information in the third paragraph, which of the following would most likely have been collected by nineteenth-century feminist organizations?
(A) Newspaper accounts of presidential election results
(B) Biographies of John Adams

(C) Letters from a mother to a daughter advising her how to handle a family problem
(D) Books about famous graduates of the country's first college

8. What use was made of the nineteenth-century women's history materials in the Schlesinger Library and the Sophia Smith Collection?
(A) They were combined and published in a multivolume encyclopedia
(B) They formed the basis of college courses in the nineteenth century.
(C) They provided valuable information for twentieth-century historical researchers.
(D) They were shared among women's colleges throughout the United States.

9. In the last paragraph, the author mentions all of the following as possible roles of nineteenth-century "great women" EXCEPT
(A) authors
(B) reformers
(C) activists for women's rights
(D) politicians

10. The word "representative" in line 29 is closest in meaning to
(A) typical
(B) satisfied
(C) supportive
(D) distinctive

PASSAGE 19

The principal difference between urban growth in Europe and in the North American colonies was the slow evolution of cities in the former and their rapid growth in the latter. In Europe they grew over a period of centuries from town economies to their present urban structure. In North America, they started as wilderness communities and developed to mature urbanism in little more than a century.

In the early colonial days in North America, small cities sprang up along the Atlantic Coastline, mostly in what are now New England and Middle Atlantic states in the United States and in the lower Saint Lawrence valley in Canada. This was natural because these areas were nearest to England and France, particularly England, from which most capital goods (assets such as equipment) and many consumer goods were imported. Merchandising establishments were, accordingly, advantageously located in port cities from which goods could be readily distributed to interior settlements. Here, too, were the favored locations for processing raw materials prior to export. Boston, Philadelphia, New York, Montreal, and other cities flourished, and, as the colonies grew, these cities increased in importance.

This was less true in the colonial South, where life centered around large farms, known as plantations, rather than around towns, as was the case in the areas further north along the Atlantic coastline. The local isolation and the economic self-sufficiency of the plantations were antagonistic to the development of the towns. The plantations maintained their independence because they were located on navigable streams and each had a wharf accessible to the small

shipping of that day. In fact, one of the strongest factors in the selection of plantation land was the desire to have its front on a water highway.

When the United States became an independent nation in 1776, it did not have a single city as large as 50,000 inhabitants, but by 1820 it had a city of more than 10,000 people, and by 1880 it had recorded a city of over one million. It was not until after 1823, after the mechanization of the spinning had weaving industries, that cities started drawing young people away from farms. Such migration was particularly rapid following the Civil War (1861-1865).

1. What does the passage mainly discuss?
(A) Factors that slowed the growth of cities in Europe.
(B) The evolution of cities in North America
(C) Trade between North American and European cities
(D) The effects of the United Sates' independence on urban growth in New England.

2. The word "they" in line 4 refers to
(A) North American colonies
(B) cities
(C) centuries
(D) town economies

3. The passage compares early European and North American cities on the basis of which of the following?
(A) Their economic success
(B) The type of merchandise they exported
(C) Their ability to distribute goods to interior settlements
(D) The pace of their development

4. The word "accordingly" in line 11 is closest in meaning to
(A) as usual
(B) in contrast
(C) to some degree
(D) for that reason

5. According to the passage , early colonial cities were established along the Atlantic coastline of North America due to
(A) an abundance of natural resources
(B) financial support from colonial governments
(C) proximity to parts of Europe
(D) a favorable climate

6. The passage indicates that during colonial times, the Atlantic coastline cities prepared which of the following for shipment to Europe?
(A) Manufacturing equipment
(B) Capital goods
(C) Consumer goods

(D) Raw materials

7. According to the passage , all of the following aspects of the plantation system influenced the growth of southern cities EXCEPT the
(A) location of the plantations
(B) access of plantation owners to shipping
(C) relationships between plantation residents and city residents
(D) economic self-sufficiency of the plantations

8. It can be inferred from the passage that, in comparison with northern cities, most southern cities were
(A) more prosperous
(B) smaller
(C) less economically self-sufficient
(D) tied less closely to England than to France

9. The word "recorded" in line 26 is closest in meaning to
(A) imagined
(B) discovered
(C) documented
(D) planned

10. The word "drawing" in line 28 is closest in meaning to
(A) attracting
(B) employing
(C) instructing
(D) representing

11. The passage mentions the period following the Civil War (line 29) because it was a time of
(A) significant obstacles to industrial growth
(B) decreased dependence on foreign trade
(C) increased numbers of people leaving employment on farms
(D) increased migration from northern states to southern states

PASSAGE 20

(25)

In seventeenth-century colonial North America, all day-to-day cooking was done in the fireplace. Generally large, fireplaces were planned for cooking as well as for warmth. Those in the Northeast were usually four or five feet high, and in the South, they were often high enough for a person to walk into. A heavy timber called the mantel tree was used as a lintel to support the stonework above the fireplace opening. This timber might be scorched occasionally, but it was far enough in front of the rising column of heat to be safe from catching fire.

Two ledges were built across from each other on the inside of the chimney. On these rested the ends of a "lug pole" from which pots were suspended when cooking. Wood from a freshly cut tree was used for the lug pole, so it would resist heat, but it had to be replaced frequently because it

dried out and charred, and was thus weakened. Sometimes the pole broke and the dinner fell into the fire. When iron became easier to obtain, it was used instead of wood for lug poles, and later fireplaces had pivoting metal rods to hang pots from.

Beside the fireplace and built as part of it was the oven. It was made like a small, secondary fireplace with a flue leading into the main chimney to draw out smoke. Sometimes the door of the oven faced the room, but most ovens were built with the opening facing into the fireplace. On baking days (usually once or twice a week) a roaring fire of "oven wood," consisting of brown maple sticks, was maintained in the oven until its walls were extremely hot. The embers were later removed, bread dough was put into the oven, and the oven was sealed shut until the bread was fully baked.

Not all baking was done in a big oven, however. Also used was an iron "bake kettle," which looked like a stewpot on legs and which had an iron lid. This is said to have worked well when it was placed in the fireplace, surrounded by glowing wood embers, with more embers piled on its lid.

1. Which of the following aspects of domestic life in colonial North America does the passage mainly discuss?
(A) methods of baking bread
(B) fireplace cooking
(C) the use of iron kettles in a typical kitchen
(D) the types of wood used in preparing meals

2. The author mentions the fireplaces built in the South to illustrate
(A) how the materials used were similar to the materials used in northeastern fireplaces
(B) that they served diverse functions
(C) that they were usually larger than northeastern fireplaces
(D) how they were safer than northeastern fireplaces

3. The word "scorched" in line 6 is closest in meaning to
(A) burned
(B) cut
(C) enlarged
(D) bent

4. The word "it" in line 6 refers to
(A) the stonework
(B) the fireplace opening
(C) the mantel tree
(D) the rising column of heat

5. According to the passage , how was food usually cooked in a pot in the seventeenth century?
(A) By placing the pot directly into the fire
(B) By putting the pot in the oven
(C) By filling the pot with hot water
(D) By hanging the pot on a pole over the fire

6. The word "obtain" in line 12 is closest in meaning to
(A) maintain
(B) reinforce
(C) manufacture
(D) acquire

7. Which of the following is mentioned in paragraph 2 as a disadvantage of using a wooden lug pole?
(A) It was made of wood not readily available.
(B) It was difficult to move or rotate.
(C) It occasionally broke.
(D) It became too hot to touch.

8. It can be inferred from paragraph 3 that, compared to other firewood, "oven wood" produced
(A) less smoke
(B) more heat
(C) fewer embers
(D) lower flames

9. According to paragraph 3, all of the following were true of a colonial oven EXCEPT:
(A) It was used to heat the kitchen every day.
(B) It was built as part of the main fireplace.
(C) The smoke it generated went out through the main chimney.
(D) It was heated with maple sticks.

10. According to the passage , which of the following was an advantage of a "bake kettle"?
(A) It did not take up a lot of space in the fireplace.
(B) It did not need to be tightly closed.
(C) It could be used in addition to or instead of the oven.
(D) It could be used to cook several foods at one time.

PASSAGE 21

The sculptural legacy that the new United States inherited from its colonial predecessors was far from a rich one, and in fact, in 1776 sculpture as an art form was still in the hands of artisans and craftspeople. Stone carvers engraved their motifs of skulls and crossbones and other religious icons of death into the gray slabs that we still see standing today in old burial grounds. Some skilled craftspeople made intricately carved wooden ornamentations for furniture or architectural decorations, while others caved wooden shop signs and ships' figureheads. Although they often achieved expression and formal excellence in their generally primitive style, they remained artisans skilled in the craft of carving and constituted a group distinct from what we normally think of as "sculptors" in today's use of the word.

On the rare occasion when a fine piece of sculpture was desired, Americans turned to foreign sculptors, as in the 1770's when the cities of New York and Charleston, South Carolina, commissioned the Englishman Joseph Wilton to make marble statues of William Pitt. Wilton also made a lead equestrian image of King George III that was created in New York in 1770 and torn down by zealous patriots six years later. A few marble memorials with carved busts, urns, or other decorations were produced in England and brought to the colonies to be set in the walls of churches — as in King's Chapel in Boston. But sculpture as a high art, practiced by artists who knew both the artistic theory of their Renaissance-Baroque-Rococo predecessors and the various technical procedures of modeling, casting, and carving rich three-dimensional forms, was not known among Americans in 1776. Indeed, for many years thereafter, the United States had two groups from which to choose — either the local craftspeople or the imported talent of European sculptors.

The eighteenth century was not one in which powered sculptural conceptions were developed. Add to this the timidity with which unschooled artisans — originally trained as stonemasons, carpenters, or cabinetmakers — attacked the medium from which they sculpture made in the United States in the late eighteenth century.

1. What is the main idea of the passage ?
(A) There was great demand for the work of eighteenth-century artisans.
(B) Skilled sculptors did not exist in the United States in the 1770's.
(C) Many foreign sculptors worked in the United States after 1776.
(D) American sculptors were hampered by a lack of tools and materials.

2. The word "motifs" in line 3 is closest in meaning to
(A) tools
(B) prints
(C) signatures
(D) designs

3. The work of which of the following could be seen in burial grounds?
(A) European sculptors
(B) Carpenters
(C) Stone carves
(D) Cabinetmakers

4. The word "others" in line 6 refers to
(A) craftspeople
(B) decorations
(C) ornamentations
(D) shop signs

5. The word "distinct" in line 9 is closest in meaning to
(A) separate
(B) assembled
(C) notable
(D) inferior

6. The word "rare" in line 11 is closest in meaning to
(A) festive
(B) infrequent
(C) delightful
(D) unexpected

7. Why does the author mention Joseph Wilton in line 13?
(A) He was an English sculptor who did work in the United States.
(B) He was well known for his wood carvings
(C) He produced sculpture for churches.
(D) He settled in the United States in 1776.

8. What can be inferred about the importation of marble memorials from England?
(A) Such sculpture was less expensive to produce locally than to import
(B) Such sculpture was not available in the United States.
(C) Such sculpture was as prestigious as those made locally.
(D) The materials found abroad were superior.

9. How did the work of American carvers in 1776 differ from that of contemporary sculptors?
(A) It was less time-consuming
(B) It was more dangerous.
(C) It was more expensive.
(D) It was less refined.

PASSAGE 22

Throughout the nineteenth century and into the twentieth, citizens of the United States maintained a bias against big cities. Most lived on farms and in small towns and believed cities to be centers of corruption, crime, poverty, and moral degradation. Their distrust was caused, in part, by a national ideology that proclaimed farming the greatest occupation and rural living superior to urban living. This attitude prevailed even as the number of urban dwellers increased and cities became an essential feature of the national landscape. Gradually, economic reality overcame ideology. Thousands abandoned the precarious life on the farm for more secure and better paying jobs in the city. But when these people migrated from the countryside, they carried their fears and suspicious with them. These new urbanities, already convinced that cities were overwhelmed with great problems, eagerly embraced the progressive reforms that promised to bring order out of the chaos of the city.

One of many reforms came in the area of public utilities. Water and sewerage systems were usually operated by municipal governments, but the gas and electric networks were privately owned. Reformers feared that the privately owned utility companies would charge exorbitant rates for these essential services and deliver them only to people who could afford them. Some city and state governments responded by regulating the utility companies, but a number of cities began to supply these services themselves. Proponents of these reforms argued that public ownership and

regulation would insure widespread access to these utilities and guarantee a fair price.

While some reforms focused on government and public behavior, others looked at the cities as a whole. Civic leaders, convinced that physical environment influenced human behavior, argued that cities should develop master plans to guide their future growth and development. City planning was nothing new, but the rapid industrialization and urban growth of the late nineteenth century took place without any consideration for order. Urban renewal in the twentieth century followed several courses. Some cities introduced plans to completely rebuild the city core. Most other cities contented themselves with zoning plans for regulating future growth. Certain parts of town were restricted to residential use, while others were set aside for industrial or commercial development.

1. What does the passage mainly discuss?
(A) A comparison of urban and rural life in the early twentieth century
(B) The role of government in twentieth century urban renewal
(C) Efforts to improve urban life in the early twentieth century
(D) Methods of controlling urban growth in the twentieth century

2. The word "bias" in line 2 is closest in meaning to
(A) diagonal
(B) slope
(C) distortion
(D) prejudice

3. The first paragraph suggests that most people who lived in rural areas
(A) were suspicious of their neighbors
(B) were very proud of their lifestyle
(C) believed city government had too much power
(D) wanted to move to the cities

4. In the early twentieth century, many rural dwellers migrated to the city in order to
(A) participate in the urban reform movement
(B) seek financial security
(C) comply with a government ordinance
(D) avoid crime and corruption

5. The word "embraced" in line 11 is closest in meaning to
(A) suggested
(B) overestimated
(C) demanded
(D) welcomed

6. What concern did reformers have about privately owned utility companies?
(A) They feared the services would not be made available to all city dwellers.
(B) They believed private ownership would slow economic growth
(C) They did not trust the companies to obey the government regulations.

(D) They wanted to ensure that the services would be provided to rural areas.

7. The word "exorbitant" in line 16 is closest in meaning to
(A) additional
(B) expensive
(C) various
(D) modified

8. All of the following were the direct result of public utility reforms EXCEPT
(A) local governments determined the rates charged by private utility companies
(B) some utility companies were owned and operated by local governments
(C) the availability of services was regulated by local government
(D) private utility companies were required to pay a fee to local governments

9. The word "Proponents" in line 18 is closest in meaning to
(A) Experts
(B) Pioneers
(C) Reviewers
(D) Supporters

10. Why does the author mention "industrialization" (line 24)?
(A) To explain how fast urban growth led to poorly designed cities
(B) To emphasize the economic importance of urban areas
(C) To suggest that labor disputes had become an urban problem
(D) To illustrate the need for construction of new factories

PASSAGE 23

Although only 1 person in 20 in the Colonial period lived in a city, the cities had a disproportionate influence on the development of North America. They were at the cutting edge of social change. It was in the cities that the elements that can be associated with modern capitalism first appeared — the use of money and commercial paper in place of barter, open competition in place of social deference and hierarchy, with an attendant rise in social disorder, and the appearance of factories using coat or water power in place of independent craftspeople working with hand tools. "The cities predicted the future," wrote historian Gary. B. Nash, "even though they were but overgrown villages compared to the great urban centers of Europe, the Middle East and China."

Except for Boston, whose population stabilized at about 16,000 in 1760, cities grew by exponential leaps through the eighteenth century. In the fifteen years prior to the outbreak of the War for independence in 1775, more than 200,000 immigrants arrived on North American shores. This meant that a population the size of Boston was arriving every year, and most of it flowed into the port cities in the Northeast. Philadelphia's population nearly doubted in those years, reaching about 30,000 in 1774, New York grew at almost the same rate, reaching about 25,000 by 1775.

The quality of the hinterland dictated the pace of growth of the cities. The land surrounding Boston had always been poor farm country, and by the mid-eighteenth century it was virtually stripped of its timber. The available farmland was occupied, there was little in the region beyond the city to attract immigrants. New York and Philadelphia, by contrast, served a rich and fertile hinterland laced with navigable watercourses. Scots, Irish, and Germans landed in these cities and followed the rivers inland. The regions around the cities of New York and Philadelphia became the breadbaskets of North America, sending grain not only to other colonies but also to England and southern Europe, where crippling droughts in the late 1760's created a whole new market.

1. Which of the following aspects of North America in the eighteenth century does the passage mainly discuss?
(A) The effects of war on the growth of cities
(B) The growth and influence of cities
(C) The decline of farming in areas surrounding cities
(D) The causes of immigration to cities

2. Why does the author say that "the cities had a disproportionate influence on the development of North America" (lines 1-2)?
(A) The influence of the cities was mostly negative
(B) The populations of the cities were small, but their influence was great.
(C) The cities were growing at a great rate.
(D) Most people pretended to live in cities

3. The phrase "in place of " in lines 4-5 is closest in meaning to
(A) connected to
(B) in addition to
(C) because of
(D) instead of

4. The word "attendant" in line 6 is closest in meaning to
(A) avoidable
(B) accompanying
(C) unwelcome
(D) unexpected

5. Which of the following is mentioned as an element of modern capitalism?
(A) Open competition
(B) Social deference
(C) Social hierarchy
(D) Independent craftspeople

6. It can be inferred that in comparison with North American cities, cities in Europe, the Middle East, and China had
(A) large populations
(B) little independence

(C) frequent social disorder
(D) few power sources

7. The phrase "exponential leaps" in line 12 is closest in meaning to
(A) long wars
(B) new laws
(C) rapid increases
(D) exciting changes

8. The word "it" in line 15 refers to
(A) population
(B) size
(C) Boston
(D) Year

9. How many immigrants arrived in North America between 1760 and 1775?
(A) About 16,000
(B) About 25,000
(C) About 30,000
(D) More than 200,000

10. The word "dictated" in line 18 is closest in meaning to
(A) spoiled
(B) reduced
(C) determined
(D) divided

11. The word "virtually" in line 20 is closest in meaning to
(A) usually
(B) hardly
(C) very quickly
(D) almost completely

12. The region surrounding New York and Philadelphia is contrasted with the region surrounding Boston in terms of
(A) quality of farmland
(B) origin of immigrants
(C) opportunities for fishing
(D) type of grain grown

13. Why does the author describe the regions around the cities of New York and Philadelphia as "breadbaskets"?
(A) They produced grain especially for making bread.
(B) They stored large quantities of grain during periods of drought

(C) They supplied grain to other parts of North America and other countries.
(D) They consumed more grain than all the other regions of North America.

PASSAGE 24

The spectacular aurora light displays that appear in Earth's atmosphere around the north and south magnetic poles were once mysterious phenomena. Now, scientists have data from satellites and ground-based observations from which we know that the aurora brilliance is an immense electrical discharge similar to that occurring in a neon sign.

To understand the cause of auroras, first picture the Earth enclosed by its magnetosphere, a huge region created by the Earth's magnetic field. Outside the magnetosphere, blasting toward the earth is the solar wind, a swiftly moving plasma of ionized gases with its own magnetic filed. Charged particles in this solar wind speed earthward along the solar wind's magnetic lines of force with a spiraling motion. The Earth's magnetosphere is a barrier to the solar winds, and forces the charged particles of the solar wind to flow around the magnetosphere itself. But in the polar regions, the magnetic lines of force of the Earth and of the solar wind bunch together. Here many of the solar wind's charged particles break through the magnetosphere and enter Earth's magnetic field. They then spiral back and forth between the Earth's magnetic poles very rapidly. In the polar regions, electrons from the solar wind ionize and excite the atoms and molecules of the upper atmosphere, causing them to emit aurora radiations of visible light.

The colors of an aurora depend on the atoms emitting them. The dominant greenish white light comes from low energy excitation of oxygen atoms. During huge magnetic storms oxygen atoms also undergo high energy excitation and emit crimson light. Excited nitrogen atoms contribute bands of color varying from blue to violet. Viewed from outer space, auroras can be seen as dimly glowing belts wrapped around each of the Earth's magnetic poles. Each aurora hangs like a curtain of light stretching over the polar regions and into the higher latitudes. When the solar flares that result in magnetic storms and aurora activity are very intense, aurora displays may extend as far as the southern regions of the United States.

Studies of auroras have given physicists new information about the behavior of plasmas, which has helped to explain the nature of outer space and is being applied in attempts to harness energy from the fusion of atoms.

1. What does the passage mainly discuss?
(A) The methods used to observe auroras from outer space
(B) The formation and appearance of auroras around the Earth's poles
(C) The factors that cause the variety of colors in auroras
(D) The periodic variation in the display of auroras

2. The word "phenomena" in line 2 is closest in meaning to
(A) ideas
(B) stars
(C) events
(D) colors

3. The word "picture" in line 5 is closest in meaning to
(A) frame
(B) imagine

(C) describe
(D) explain

4. The passage describes the magnetosphere as a barrier (line 10) because
(A) its position makes it difficult to be observed from Earth
(B) it prevents particles from the solar wind from easily entering Earth's atmosphere
(C) it increases the speed of particles from the solar wind
(D) it is strongest in the polar regions

5. The word "them" in line 16 refers to
(A) polar regions
(B) electrons
(C) atoms and molecules
(D) aurora radiations

6. According to the passage , which color appears most frequently in an aurora display?
(A) greenish-white
(B) crimson
(C) blue
(D) violet

7. The word "emit" in line 20 is closest in meaning to
(A) change from
(B) connect with
(C) add to
(D) give off

8. The word "glowing" in line 22 is closest in meaning to
(A) shining
(B) moving
(C) charging
(D) hanging

9. Auroras may be seen in the southern regions of the United Sates when
(A) magnetic storms do not affect Earth
(B) solar flares are very intense
(C) the speed of the solar wind is reduced
(D) the excitation of atoms is low

10. The passage supports which of the following statements about scientists' understanding of auroras?
(A) Before advances in technology, including satellites, scientists knew little about auroras.
(B) New knowledge about the fusion of atoms allowed scientists to learn more about auroras.
(C) Scientists cannot explain the cause of the different colors in auroras.

(D) Until scientists learn more about plasma physics, little knowledge about auroras will be available.

11. Which of the following terms is defined in the passage ?
(A) "magnetosphere" (line 6)
(B) "electrons" (line 15)
(C) "ionize" (line 15)
(D) "fusion" (line 29)

PASSAGE 25

The history of clinical nutrition, or the study of the relationship between health and how the body takes in and utilizes food substances, can be divided into four distinct eras: the first began in the nineteenth century and extended into the early twentieth century when it was recognized for the first time that food contained constituents that were essential for human function and that different foods provided different amounts of these essential agents. Near the end of this era, research studies demonstrated that rapid weight loss was associated with nitrogen imbalance and could only be rectified by providing adequate dietary protein associated with certain foods.

The second era was initiated in the early decades of the twentieth century and might be called "the vitamin period." Vitamins came to be recognized in foods, and deficiency syndromes were described. As vitamins became recognized as essential food constituents necessary for health, it became tempting to suggest that every disease and condition for which there had been no previous effective treatment might be responsive to vitamin therapy. At that point in time, medical schools started to become more interested in having their curricula integrate nutritional concepts into the basic sciences. Much of the focus of this education was on the recognition of vitamin deficiency symptoms. Herein lay the beginning of what ultimately turned from ignorance to denial of the value of nutritional therapies in medicine. Reckless claims were made for effects of vitamins that went far beyond what could actually be achieved from the use of them.

In the third era of nutritional history in the early 1950's to mid-1960s, vitamin therapy began to fall into disrepute. Concomitant with this, nutrition education in medical schools also became less popular. It was just a decade before this that many drug companies had found their vitamin sales skyrocketing and were quick to supply practicing physicians with generous samples of vitamins and literature extolling the virtue of supplementation for a variety of health-related conditions. Expectations as to the success of vitamins in disease control were exaggerated. As is known in retrospect, vitamin and mineral therapies are much less effective when applied to health-crisis conditions than when applied to long-term problems of undernutrition that lead to chronic health problems.

1. What does the passage mainly discuss?
(A) The effects of vitamins on the human body
(B) The history of food preferences from the nineteenth century to the present
(C) The stages of development of clinical nutrition as a field of study
(D) Nutritional practices of the nineteenth century

2. It can be inferred from the passage that which of the following discoveries was made during the

first era in the history of nutrition?
(A) Protein was recognized as an essential component of diet.
(B) Vitamins were synthesized from foods.
(C) Effective techniques of weight loss were determined.
(D) Certain foods were found to be harmful to good health.

3. The word "tempting" in line 12 is closest in meaning to
(A) necessary
(B) attractive
(C) realistic
(D) correct

4. It can be inferred from the passage that medical schools began to teach concepts of nutrition in order to
(A) convince medical doctors to participate in research studies on nutrition
(B) encourage medical doctors to apply concepts of nutrition in the treatment of disease
(C) convince doctors to conduct experimental vitamin therapies on their patients
(D) support the creation of artificial vitamins

5. The word "Reckless" in line 18 is closest in meaning to
(A) recorded
(B) irresponsible
(C) informative
(D) urgent

6. The word 'them" in line 19 refers to
(A) therapies
(B) claims
(C) effects
(D) vitamins

7. Why did vitamin therapy begin losing favor in the 1950's
(A) The public lost interest in vitamins.
(B) Medical schools stopped teaching nutritional concepts.
(C) Nutritional research was of poor quality
(D) Claims for the effectiveness of vitamin therapy were seen to be exaggerated.

8. The phrase "concomitant with" in line 21 is closest in meaning to
(A) in conjunction with
(B) prior to
(C) in dispute with
(D) in regard to

9. The word "skyrocketing" in line 23 is closest in meaning to

(A) internationally popular
(B) increasing rapidly
(C) acceptable
(D) surprising

10. The word "extolling" in line 24 is closest in meaning to
(A) analyzing
(B) questioning
(C) praising
(D) promising

11. The paragraph following the passage most probably discusses
(A) the fourth era of nutrition history
(B) problems associated with undernutrition
(C) how drug companies became successful
(D) why nutrition education lost its appeal

PASSAGE 26
(20)

In July of 1994, an astounding series of events took place. The world anxiously watched as, every few hours, a hurtling chunk of comet plunged into the atmosphere of Jupiter. All of the twenty-odd fragments, collectively called comet Shoemaker-Levy 9 after its discoverers, were once part of the same object, now dismembered and strung out along the same orbit. This cometary train, glistening like a string of pearls, had been first glimpsed only a few months before its fateful impact with Jupiter, and rather quickly scientists had predicted that the fragments were on a collision course with the giant planet. The impact caused an explosion clearly visible from Earth, a bright flaming fire that quickly expanded as each icy mass incinerated itself. When each fragment slammed at 60 kilometers per second into the dense atmosphere, its immense kinetic energy was transformed into heat, producing a superheated fireball that was ejected back through the tunnel the fragment had made a few seconds earlier. The residues from these explosions left huge black marks on the face of Jupiter, some of which have stretched out to form dark ribbons.

Although this impact event was of considerable scientific import, it especially piqued public curiosity and interest. Photographs of each collision made the evening television newscast and were posted on the Internet. This was possibly the most open scientific endeavor in history. The face of the largest planet in the solar system was changed before our very eyes. And for the very first time, most of humanity came to fully appreciate the fact that we ourselves live on a similar target, a world subject to catastrophe by random assaults from celestial bodies. That realization was a surprise to many, but it should not have been. One of the great truths revealed by the last few decades of planetary exploration is that collisions between bodies of all sizes are relatively commonplace, at least in geologic terms, and were even more frequent in the early solar system.

1. The passage mentions which of the following with respect to the fragments of comet Shoemaker-Levy 9?

(A) They were once combine in a larger body.
(B) Some of them burned up before entering the atmosphere of Jupiter.
(C) Some of them are still orbiting Jupiter.
(D) They have an unusual orbit.

2. The word "collectively" in line 3 is closest in meaning to
(A) respectively
(B) popularly
(C) also
(D) together

3. The author compares the fragments of comet Shoemaker-Levy 9 to all of the following EXCEPT
(A) a dismembered body
(B) a train
(C) a pearl necklace
(D) a giant planet

4. Before comet Shoemaker-Levy 9 hit Jupiter in July 1994, scientists
(A) had been unaware of its existence
(B) had been tracking it for only a few months
(C) had observed its breakup into twenty-odd fragments
(D) had decided it would not collide with the planet

5. Before the comet fragments entered the atmosphere of Jupiter, they were most likely
(A) invisible
(B) black
(C) frozen
(D) exploding

6. Superheated fireballs were produced as soon as the fragments of comet Shoemaker- Levy 9
(A) hit the surface of Jupiter
(B) were pulled into Jupiter's orbit
(C) were ejected back through the tunnel
(D) entered the atmosphere of Jupiter

7. The phrase "incinerated itself" in line 9 is closest in meaning to
(A) burned up
(B) broke into smaller pieces
(C) increased its speed
(D) grew in size

8. Which of the following is mentioned as evidence of the explosions that is still visible on Jupiter?

(A) fireballs
(B) ice masses
(C) black marks
(D) tunnels

9. Paragraph 2 discusses the impact of the comet Shoemaker-Levy 9 primarily in terms of
(A) its importance as an event of great scientific significance
(B) its effect on public awareness of the possibility of damage to Earth
(C) the changes it made to the surface of Jupiter
(D) the effect it had on television broadcasting

10. The "target" in line 20 most probably referred to
(A) Earth
(B) Jupiter
(C) the solar system
(D) a comet

PASSAGE 27

The mineral particles found in soil range in size from microscopic clay particles to large boulders. The most abundant particles — sand, silt, and clay — are the focus of examination in studies of soil texture. Texture is the term used to describe the composite sizes of particles in a soil sample, typically several representative handfuls.

To measure soil texture, the sand, silt, and clay particles are sorted out by size and weight. The weights of each size are then expressed as a percentage of the sample weight. In the field, soil texture can be estimated by extracting a handful of soil and squeezing the damp soil into three basic shapes; (1) cast, a lump formed by squeezing a sample in a clenched fist; (2) thread, a pencil shape formed by rolling soil between the palms; and (3) ribbon, a flatfish shape formed by squeezing a small sample between the thumb and index finger. The behavioral characteristics of the soil when molded into each of these shapes, if they can be formed at all, provide the basis for a general textural classification. The behavior of the soil in the hand test is determined by the amount of clay in the sample. Clay particles are highly cohesive, and when dampened, behave as a plastic. Therefore the higher the clay content in a sample, the more refined and durable the shapes into which it can be molded.

Another method of determining soil texture involves the use of devices called sediment sieves, screens built with a specified mesh size. When the soil is filtered through a group of sieves, each with a different mesh size, the particles become grouped in corresponding size categories. Each category can be weighed to make a textural determination. Although sieves work well for silt, sand, and larger particles, they are not appropriate for clay particles. Clay is far too small to sieve accurately; therefore, in soils with a high proportion of clay, the fine particles are measured on the basis of their settling velocity when suspended in water. Since clays settle so slowly, they are easily segregated from sand and silt. The water can be drawn off and evaporated, leaving a residue of clay, which can be weighed.

1. What does the passage mainly discuss?
(A) Characteristics of high quality soil
(B) Particles typically found in most soils
(C) How a high clay content affects the texture of soil
(D) Ways to determine the texture of soil

2. The author mentions "several representative handfuls" in line 4 in order to show
(A) the range of soil samples
(B) the process by which soil is weighed
(C) the requirements for an adequate soil sample
(D) how small soil particles are weighted

3. The phrase "sorted out" in line 5 is closest in meaning to
(A) mixed
(B) replaced
(C) carried
(D) separated

4. It can be inferred that the names of the three basic shapes mentioned in paragraph 2 reflect
(A) the way the soil is extracted
(B) the results of squeezing the soil
(C) the need to check more than one handful
(D) the difficulty of forming different shapes

5. The word "dampened" in line 14 is closest in meaning to
(A) damaged
(B) stretched
(C) moistened
(D) examined

6. Which of the following can be inferred from the passage about a soil sample with little or no clay in it?
(A) It is not very heavy.
(B) It may not hold its shape when molded.
(C) Its shape is durable
(D) Its texture cannot be classified

7. The word "they" in line 21 refers to
(A) categories
(B) sieves
(C) larger particles
(D) clay particles

8. It can be inferred from the passage that the sediment sieve has an advantage over the hand test

in determining soil texture because
(A) using the sieve takes less time
(B) the sieve can measure clay
(C) less training is required to use the sieve
(D) the sieve allows for a more exact measure

9. During the procedure described in paragraph 3, when clay particles are placed into water they
(A) stick to the sides of the water container
(B) take some time to sink to the bottom
(C) separate into different sizes
(D) dissolve quickly

10. The word "fine" in line 24 is closest in meaning to
(A) tiny
(B) many
(C) excellent
(D) various

11. All of the following words are defined in the passage EXCEPT
(A) texture (line 3)
(B) ribbon (line 10)
(C) sediment sieves (line 18)
(D) evaporated (line 25)

PASSAGE 28

The end of the nineteenth century and the early years of the twentieth century were marked by the development of an international Art Nouveau style, characterized by sinuous lines, floral and vegetable motifs, and soft evanescent coloration. The Art Nouveau style was an eclectic one, bringing together elements of Japanese art, motifs of ancient cultures, and natural forms. The glass objects of this style were elegant in outline, although often deliberately distorted, with pale or iridescent surfaces. A favored device of the style was to imitate the iridescent surface seen on ancient glass that had been buried. Much of the Art Nouveau glass produced during the years of its greatest popularity had been generically termed "art glass." Art glass was intended for decorative purposes and relied for its effect upon carefully chosen color combinations and innovative techniques.

France produced a number of outstanding exponents of the Art Nouveau style; among the most celebrated was Emile Galle (1846-1904). In the United States, Louis Comfort Tiffany (1843-1933) was the most noted exponent of this style, producing a great variety of glass forms and surfaces, which were widely copied in their time and are highly prized today. Tiffany was a brilliant designer, successfully combining ancient Egyptian, Japanese, and Persian motifs.

The Art Nouveau style was a major force in the decorative arts from 1895 until 1915, although its influence continued throughout the mid-1920's. It was eventually to be overtaken by a new school of thought known as Functionalism that had been present since the turn of the century. At first restricted to a small avant-garde group of architects and designers, Functionalism emerged as

the dominant influence upon designers after the First World War. The basic tenet of the movement — that function should determine form — was not a new concept. Soon a distinct aesthetic code evolved: form should be simple, surfaces plain, and any ornament should be based on geometric relationships. This new design concept, coupled with the sharp postwar reactions to the styles and conventions of the preceding decades, created an entirely new public taste which caused Art Nouveau types of glass to fall out of favor. The new taste demanded dramatic effects of contrast, stark outline and complex textural surfaces.

1. What does paragraph 1 mainly discuss?
(A) Design elements in the Art Nouveau style
(B) The popularity of the Art Nouveau style
(C) Production techniques for art glass
(D) Color combinations typical of the Art Nouveau style

2. The word "one" in line 4 refers to
(A) century
(B) development
(C) style
(D) coloration

3. Paragraph 1 mentions that Art Nouveau glass was sometimes similar to which aspect of ancient buried glass?
(A) The distortion of the glass
(B) The appearance of the glass surface
(C) The shapes of the glass objects
(D) The size of the glass objects

4. What is the main purpose of paragraph 2?
(A) to compare different Art Nouveau styles
(B) to give examples of famous Art Nouveau artists
(C) to explain why Art Nouveau glass was so popular in the United States
(D) to show the impact Art Nouveau had on other cultures around the world

5. The word "prized" in line 16 is closest in meaning to
(A) valued
(B) universal
(C) uncommon
(D) preserved

6. The word "overtaken" in line 20 is closest in meaning to
(A) surpassed
(B) inclined
(C) expressed
(D) applied

7. What does the author mean by stating that "function should determine form" (lines 23-24)?
(A) A useful object should not be attractive.
(B) The purpose of an object should influence its form.
(C) The design of an object is considered more significant than its function.
(D) The form of an object should not include decorative elements.

8. It can be inferred from the passage that one reason Functionalism became popular was that it
(A) clearly distinguished between art and design
(B) appealed to people who liked complex painted designs
(C) reflected a common desire to break from the past
(D) was easily interpreted by the general public

9. Paragraph 3 supports which of the following statements about Functionalism?
(A) Its design concept avoided geometric shapes.
(B) It started on a small scale and then spread gradually.
(C) It was a major force in the decorative arts before the First World War.
(D) It was not attractive to architects and designers.

10. According to the passage , an object made in the Art Nouveau style would most likely include
(A) a flowered design
(B) bright colors
(C) modern symbols
(D) a textured surface

PASSAGE 29

During the second half of the nineteenth century, the production of food and feed crops in the United States rose at an extraordinarily rapid rate. Corn production increased by four and a half times, hay by five times, oats and wheat by seven times. The most crucial factor behind this phenomenal upsurge in productivity was the widespread adoption of labor-saving machinery by northern farmers. By 1850 horse-drawn reaping machines that cut grain were being introduced into the major grain-growing regions of the country. Horse-powered threshing machines to separate the seeds from the plants were already in general use. However, it was the onset of the Civil War in 1861 that provided the great stimulus for the mechanization of northern agriculture. With much of the labor force inducted into the army and with grain prices on the rise, northern farmers rushed to avail themselves of the new labor-saving equipment. In 1860 there were approximately 80,000 reapers in the country; five years later there were 350,000.

After the close of the war in 1865, machinery became ever more important in northern agriculture, and improved equipment was continually introduced. By 1880 a self-binding reaper had been perfected that not only cut the grain, but also gathered the stalks and bound them with twine. Threshing machines were also being improved and enlarged, and after 1870 they were increasingly powered by steam engines rather than by horses. Since steam-powered threshing

machines were costly items — running from $ 1,000 to $4,000 — they were usually owned by custom thresher owners who then worked their way from farm to farm during the harvest season. "Combines" were also coming into use on the great wheat ranches in California and the Pacific Northwest. These ponderous machines — sometimes pulled by as many as 40 horses — reaped the grain, threshed it, and bagged it, all in one simultaneous operation.

The adoption of labor-saving machinery had a profound effect upon the sale of agricultural operations in the northern states — allowing farmers to increase vastly their crop acreage. By the end of century, a farmer employing the new machinery could plant and harvest two and half times as much corn as a farmer had using hand methods 50 years before.

1. What aspect of farming in the United States in the nineteenth century does the passage mainly discuss?
(A) How labor-saving machinery increased crop Production
(B) Why southern farms were not as successful as Successful as northern farms
(C) Farming practices before the Civil War
(D) The increase in the number of people farming

2. The word "crucial" in line 4 is closest in meaning to
(A) obvious
(B) unbelievable
(C) important
(D) desirable

3. The phrase "avail themselves" in line 11 is closest in meaning to
(A) take care
(B) make use
(C) get rid
(D) do more

4. According to the passage , why was the Civil War a stimulus for mechanization?
(A) The army needed more grain in order to feed the soldiers.
(B) Technology developed for the war could also the used by farmers.
(C) It was hoped that harvesting more grain would lower the price of grain.
(D) Machines were needed to replace a disappearing labor force.

5. The passage supports which of the following statements about machinery after the Civil War?
(A) Many farmers preferred not to use the new machinery.
(B) Returning laborers replaced the use of machinery.
(C) The use of farm machinery continued to increase.
(D) Poor-quality machinery slowed the pace of crop production.

6. Combines and self-binding reapers were similar because each
(A) could perform more than one function
(B) required relatively little power to operate

(C) was utilized mainly in California
(D) required two people to operate

7. The word "they" in line 19 refers to
(A) grain stalks
(B) threshing machines
(C) steam engines
(D) horses

8. It can be inferred from the passage that most farmers did not own threshing machines because
(A) farmers did not know how to use the new machines
(B) farmers had no space to keep the machines
(C) thresher owner had chance to buy the machines before farmers did
(D) the machines were too expensive for every farmer to own

9. The word "ponderous" in line 21 is closest in meaning to
(A) advanced
(B) heavy
(C) complex
(D) rapid

PASSAGE 30

Butterflies are among the most extensively studied insects — it is estimated that 90 percent of the world's species have scientific names. As a consequence, they are perhaps the best group of insects for examining patterns of terrestrial biotic diversity and distribution. Butterflies also have a favorable image with the general public. Hence, they are an excellent group for communicating information on science and conservation issues such as diversity.

Perhaps the aspect of butterfly diversity that has received the most attention over the past century is the striking difference in species richness between tropical and temperate regions. For example, in 1875 one biologist pointed out the diversity of butterflies in the Amazon when he mentioned that about 700 species were found within an hour's walk, whereas the total number found on the British islands did not exceed 66, and the whole of Europe supported only 321. This early comparison of tropical and temperate butterfly richness has been well confirmed.

A general theory of diversity would have to predict not only this difference between temperate and tropical zones, but also patterns within each region, and how these patterns vary among different animal and plant groups. However, for butterflies, variation of species richness within temperate or tropical regions, rather man between them, is poorly understood. Indeed, comparisons of numbers of species among the Amazon basin, tropical Asia, and Africa are still mostly "personal communication" citations, even for vertebrates. In other words, unlike comparison between temperate and tropical areas, these patterns are still in the documentation phase.

In documenting geographical variation in butterfly diversity, some arbitrary, practical

decisions are made. Diversity, number of species, and species richness are used synonymously; little is known about the evenness of butterfly distribution. The New World butterflies make up the preponderance of examples because they are the most familiar species. It is hoped that by focusing on them, the errors generated by imperfect and incomplete taxonomy will be minimized.

1. Which aspect of butterflies does the passage mainly discuss?
(A) Their physical characteristics
(B) Their names
(C) Their adaptation to different habitats
(D) Their variety

2. The word "consequence" in line 2 is closest in meaning to
(A) result
(B) explanation
(C) analysis
(D) requirement

3. Butterflies are a good example for communicating information about conservation issues because they
(A) are simple in structure
(B) are viewed positively by people
(C) have been given scientific names
(D) are found mainly in temperate climates

4. The word "striking" in line 8 is closest in meaning to
(A) physical
(B) confusing
(C) noticeable
(D) successful

5. The word "exceed" in line 11 is closest in meaning to
(A) locate
(B) allow
(C) go beyond
(D) come close to

6. All of the following are mentioned as being important parts of a general theory of diversity EXCEPT
(A) differences between temperate and tropical zones
(B) patterns of distribution of species in each region
(C) migration among temperate and tropical zones
(D) variation of patterns of distribution of species among different animals and plants

7. The author mentions tropical Asia in lines 19 as an example of a location where
(A) butterfly behavior varies with climate

(B) a general theory of butterfly diversity has not yet been firmly established
(C) butterflies are affected by human populations
(D) documenting plant species is more difficult than documenting butterfly species

8. Which of the following is NOT well understood by biologists?
(A) European butterfly habitats
(B) Differences in species richness between temperate and tropical regions
(C) Differences in species richness within a temperate or a tropical region
(D) Comparisons of behavior patterns of butterflies and certain animal groups

9. The word "generated" in line 26 is closest in meaning to
(A) requested
(B) caused
(C) assisted
(D) estimated

PASSAGE 31

Rent control is the system whereby the local government tells building owners how much they can charge their tenants in rent. In the United States, rent controls date back to at least World War II.

In 1943 the federal government imposed rent controls to help solve the problem of housing shortages during wartime. The federal program ended after the war, but in some locations, including New York City, controls continued. Under New York's controls, a landlord generally cannot raise rents on apartments as long as the tenants continue to renew their leases. In places such as Santa Monica, California, rent controls are more recent. They were spurred by the inflation of the 1970's, which, combined with California's rapid population growth, pushed housing prices, as well as rents, to record levels. In 1979 Santa Monica's municipal government ordered landlords to roll back their rents to the levels charged in 1978. Future rents could only go up by two-thirds as much as any increase in the overall price level.

In any housing market, rental prices perform three functions: (1) promoting the efficient maintenance of existing housing and stimulating the construction of new housing, (2) allocating existing scarce housing among competing claimants, and (3) rationing use of existing housing by potential renters.

One result of rent control is a decrease in the construction of new rental units. Rent controls have artificially depressed the most important long-term determinant of profitability — rents. Consider some examples. In a recent year in Dallas, Texas, with a 16 percent rental vacancy rate but no rent control laws, 11,000 new housing units were built. In the same year, in San Francisco, California, only 2,000 units were built. The major difference? San Francisco has only a 1.6 percent vacancy rate but stringent rent control laws. In New York City, except for government-subsidized construction, the only rental units being built are luxury units, which are exempt from controls. In Santa Monica, California, new apartments are not being constructed. New office rental space and commercial developments are, however. They are exempt from rent controls.

1. What does the passage mainly discuss?

(A) The construction of apartments in the United States.
(B) Causes and effects of rent control
(C) The fluctuations of rental prices
(D) The shortage of affordable housing in the United States.

2. The word "They" in line 9 refers to
(A) the tenants
(B) their leases
(C) places
(D) rent controls.

3. Which of the following was NOT a reason for the introduction of rent controls in Santa Monica, California?
(A) rapid population growth
(B) inflation
(C) economic conditions during wartime
(D) record-high housing prices

4. The phrase "roll back" in line 11 is closest in meaning to
(A) credit
(B) measure
(C) vary
(D) reduce

5. The word "stimulating" in line 15 is closest in meaning to
(A) experimenting with
(B) identifying
(C) estimating
(D) encouraging

6. It can be inferred that the purpose of rent control is to
(A) protect tenants
(B) promote construction
(C) increase vacancy rates
(D) decrease sales of rental units

7. The word "depressed" in line 19 is closest in meaning to
(A) saddened
(B) created
(C) lowered
(D) defeated

8. The information in the last paragraph supports which of the following statements?
(A) San Francisco has eliminated its rent control laws.

(B) Rent control leads to a reduction in the construction of housing units
(C) Luxury apartments are rarely built when there is rent control
(D) There is a growing need for government-subsidized housing.

9. According to the passage , which of the following cities does NOT currently have rent controls?
(A) Santa Monica
(B) Dallas
(C) San Francisco
(D) New York City

10. The word "stringent" in line 23 is closest in meaning to
(A) straightforward
(B) strict
(C) expanded
(D) efficient

11. According to the passage , which of the following is NOT exempt from rent control?
(A) Luxury apartments
(B) Commercial development
(C) Moderately priced apartments
(D) Office space.

PASSAGE 32

By 1776 the fine art of painting as it had developed in western Europe up to this time had been introduced into the American colonies through books and prints, European visitors and immigrants, and traveling colonists who brought back copies (and a few original) of old master paintings and acquaintance with European art institutions.

By the outbreak of the Revolution against British rule in 1776, the status of the artists had already undergone change. In the mid-eighteenth century, painters had been willing to assume such artisan-related tasks as varnishing, gilding teaching, keeping shops, and painting wheel carriages, houses, and signs. The terminology by which artists were described at the time suggests their status: "limner" was usually applied to the anonymous portrait painter up to the 1760's; "painter" characterized anyone who could paint a flat surface. By the second half of the century, colonial artists who were trained in England or educated in the classics rejected the status of laborer and thought of themselves as artists. Some colonial urban portraitists, such as John Singleton Copley, Benjamin West, and Charles Wilson Peale, consorted with affluent patrons. Although subject to fluctuations in their economic status, all three enjoyed sufficient patronage to allow them to maintain an image of themselves as professional artists, an image indicated by their custom of signing their paintings. A few art collectors James Bowdoin III of Boston, William Byrd of Virginian, and the Aliens and Hamiltons of Philadelphia introduced European art traditions to those colonists privileged to visit their galleries, especially aspiring artists, and established in their respective communities the idea of the value of art and the need for institutions devoted to its encouragement.

Although the colonists tended to favor portraits, they also accepted landscapes, historical

works, and political engravings as appropriate artistic subjects. With the coming of independence from the British Crown, a sufficient number of artists and their works were available to serve nationalistic purposes. The achievements of the colonial artists, particularly those of Copley, West, and Peale, lent credence to the boast that the new nation was capable of encouraging genius and that political liberty was congenial to the development of taste — a necessary step before art could assume an important role in the new republic.

1. What does the passage mainly discuss?
(A) European influence on colonial American painting
(B) The importance of patronage to artist
(C) The changing status of artists in the American colonies in the eighteenth century
(D) Subjects preferred by artists in the American colonies in the eighteenth century.

2. The word "outbreak" in line 5 is closest in meaning to
(A) cause
(B) beginning
(C) position
(D) explanation

3. The word "undergone" in line 6 is closest in meaning to
(A) led to
(B) transformed
(C) preferred
(D) experienced

4. According to the passage , before the American Revolution the main task of limners was to
(A) paint wheel carriages
(B) paint portraits
(C) varnish furniture
(D) paint flat surfaces

5. It can be inferred from the passage that artists who were trained in England
(A) considered artists to be superior to painters
(B) barely painted portraitists
(C) were often very wealthy
(D) imitated English painters

6. The word "consorted" in line 14 is closest in meaning to
(A) made decisions
(B) studies
(C) agreed
(D) associated

7. The word "sufficient" in line 16 is closest in meaning to
(A) adequate
(B) temporary

(C) friendly
(D) expensive

8. According to the passage , artists such as Copley, West and Peal signed their paintings
(A) increased the monetary value of the paintings
(B) made it more difficult for other artists to copy the paintings
(C) supported the artists' image of professionalism
(D) distinguished colonial American artists from European artists

9. The author mentions James Bowdoin III and William Byrd in line 17 as examples of which of the following?
(A) Art gallery owners who displayed only European art
(B) Art collectors who had a profound influence on American attitudes toward art
(C) Artists who gave financial support to other artists
(D) Patrons whose helped to encourage artisans to become artists

10. With which of the following would the author be most likely to agree?
(A) Countries that have not had a political revolution are unlikely to develop great art.
(B) The most successful art collectors are usually artists themselves.
(C) The value of colonial American paintings decreased after the Revolution.
(D) Colonial artists made an important contribution to the evolving culture of the new nation.

PASSAGE 33

Researchers in the field of psychology have found that one of the best ways to make an important decision, such as choosing a university to attend or a business to invest in, involves the utilization of a decision worksheet. Psychologists who study optimization compare the actual decisions made by people to theoretical ideal decisions to see how similar they are. Proponents of the worksheet procedure believe that it will yield optimal, that is, the best decisions. Although there are several variations on the exact format that worksheets can take, they are all similar in their essential aspects. Worksheets require defining the problem in a clear and concise way and then listing all possible solutions to the problem. Next, the pertinent considerations that will be affected by each decision are listed, and the relative importance of each consideration or consequence is determined. Each consideration is assigned a numerical value to reflect its relative importance. A decision is mathematically calculated by adding these values together. The alternative with the highest number of points emerges as the best decision.

Since most important problems are multifaceted, there are several alternatives to choose from, each with unique advantages and disadvantages. One of the benefits of a pencil and paper decision-making procedure is that it permits people to deal with more variables than their minds can generally comprehend and remember. On the average, people can keep about seven ideas in their minds at once. A worksheet can be especially useful when the decision involves a large number of variables with complex relationships. A realistic example for many college students is the question "What will I do after graduation?" A graduate might seek a position that offers specialized training, pursue an advanced degree, or travel abroad for a year.

A decision-making worksheet begins with a succinct statement of the problem that will also help to narrow it. It is important to be clear about the distinction between long-range and immediate goals because long-range goals often involve a different decision than short-range ones. Focusing on long-range goals, a graduating student might revise the question above to "What will I do after graduation that will lead to successful career?"

1. What does the passage mainly discuss?
(A) A tool to assist in making complex decisions.
(B) A comparison of actual decisions and ideal decisions
(C) Research on how people make decisions
(D) Differences between long-range and short-range decision making

2. The word "essential" in line 7 is closest in meaning to
(A) introductory
(B) changeable
(C) beneficial
(D) fundamental

3. The word "pertinent" in line 9 is closest in meaning to
(A) relevant
(B) preceding
(C) insightful
(D) responsive

4. Of the following steps, which occurs before the others in making a decision worksheet?
(A) Listing the consequences of each solution
(B) Calculating a numerical summary of each solution
(C) Deciding which consequences are most important
(D) Writing down all possible solutions

5. According to decision-worksheet theory, an optimal decision is defined as one that
(A) has the fewest variables to consider
(B) uses the most decision worksheets
(C) has the most points assigned to it
(D) is agreed to by the greatest number of people

6. The author develops the discussion in paragraph 1 by means of
(A) describing a process
(B) classifying types of worksheets
(C) providing historical background
(D) explaining a theory

7. The author states that "On the average, people can keep about seven ideas in their minds at once (lines 17-18) to explain that

(A) most decisions involve seven steps
(B) human mental capacity has limitations
(C) some people have difficulty making minor as well as major decisions
(D) people can learn to keep more than seven ideas in their minds with practice

8. The word "succinct "in line 24 is closest in meaning to
(A) creative
(B) satisfactory
(C) personal
(D) concise

9. Which of the following terms is defined in the passage ?
(A) Proponents (line 5)
(B) Optimal (line 5)
(C) Variables (line 17)
(D) Long-range goals (line 25)

10. The word "it" in line 24 refers to
(A) worksheet
(B) problem
(C) distinction
(D) decision

11. The word "revise" in line 26 is closest in meaning to
(A) ask
(B) explain
(C) change
(D) predict

PASSAGE 34

Matching the influx of foreign immigrants into the larger cities of the United States during the late nineteenth century was a domestic migration, from town and farm to city, within the United States. The country had been overwhelmingly rural at the beginning of the century, with less than 5 percent of Americans living in large towns or cities. The proportion of urban population began to grow remarkably after 1840, increasing from 11 percent that year to 28 percent by 1880 and to 46 percent by 1900. A country with only 6 cities boasting a population of more than 8,000 in 1800 had become one with 545 such cities in 1900. Of these, 26 had a population of more than 100,000 including 3 that held more than a million people. Much of the migration producing an urban society came from smaller towns within the United States, but the combination of new immigrants and old American "settlers" on America's "urban frontier" in the late nineteenth century proved extraordinary.

The growth of cities and the process of industrialization fed on each other. The agricultural

revolution stimulated many in the countryside to seek a new life in the city and made it possible for fewer farmers to feed the large concentrations of people needed to provide a workforce for growing numbers of factories. Cities also provided ready and convenient markets for the products of industry, and huge contracts in transportation and construction — as well as the expanded market in consumer goods — allowed continued growth of the urban sector of the overall economy of the Untied States.

Technological developments further stimulated the process of urbanization. One example is the Bessemer converter (an industrial process for manufacturing steel), which provided steel girders for the construction of skyscrapers. The refining of crude oil into kerosene, and later the development of electric lighting as well as of the telephone, brought additional comforts to urban areas that were unavailable to rural Americans and helped attract many of them from the farms into the cities. In every era the lure of the city included a major psychological element for country people: the bustle and social interaction of urban life seemed particularly intriguing to those raised in rural isolation.

1. What aspects of the United States in the nineteenth century does the passage mainly discuss?
(A) Technological developments
(B) The impact of foreign immigrants on cities
(C) Standards of living
(D) The relationship between industrialization and urbanization

2. The word "influx" in line 1 is closest in meaning to
(A) working
(B) processing
(C) arrival
(D) attraction

3. The paragraph preceding the passage most probably discuss
(A) foreign immigration
(B) rural life
(C) the agricultural revolution
(D) famous cities of the twentieth century

4. What proportion of population of the United States was urban in 1900?
(A) Five percent
(B) Eleven percent
(C) Twenty-eight percent
(D) Forty-six percent

5. The word "extraordinary" in line 12 is closet in meaning to
(A) expensive
(B) exceptional
(C) supreme
(D) necessary

6. The phrase "each other" in line 13 refers to
(A) foreign immigrants and domestic migrants
(B) farms and small towns
(C) growth of cities and industrialization
(D) industry and transportation

7. The word "stimulated" in line 14 is closest in meaning to
(A) forced
(B) prepared
(C) limited
(D) motivated
8. Why does the author mention "electric lighting" and "the telephone" in line 23?
(A) They contributed to the agricultural revolution
(B) They are examples of the conveniences of city life
(C) They were developed by the same individual.
(D) They were products of the Bessemer converter.

9. The word "them" in line 25 refers to
(A) urban areas
(B) rural Americans
(C) farms
(D) cities

10. The word "era" in line 25 is closest in meaning to
(A) period of time
(B) location
(C) action
(D) unique situation

11. The word "intriguing" in line 27 is closest in meaning to
(A) profitable
(B) attractive
(C) comfortable
(D) challenging

PASSAGE 35
(20)

The observation of the skies has played a special part in the lives and cultures of peoples since the earliest of times. Evidence obtained from a site known as the Hole in the Rock, in Papago Park in Phoenix, Arizona, indicates that it might have been used as an observatory by a prehistoric people known as the Hohokam.

The physical attributes of the site allow its use as a natural calendar/clock. The "hole" at Hole in the Rock is formed by two large overhanging rocks coming together at a point, creating a shelter with an opening large enough for several persons to pass through. The northeast-facing

overhang has a smaller opening in its roof. It is this smaller hole that produces the attributes that may have been used as a calendar/clock.

Because of its location in the shelter's roof, a beam of sunlight can pass through this second hole and cast a spot onto the shelter's wall and floor. This spot of light travels from west to east as the sun moves across the sky. It also moves from north to south and back again as the Earth travels around the Sun, the west-to-east movement could have been used to establish a daily clock, much like a sundial, while the north-to-south movement could have been used to establish a seasonal calendar.

The spot first appears and starts down the surface of the wall of the shelter at different times of the morning depending on the time of the year. The spot grows in size from its first appearance until its maximum size is achieved roughly at midday. It then continues its downward movement until it reaches a point where it jumps to the floor of the shelter. As the Sun continues to move to the west, the spot continues to move across the shelter floor and down the butte, or hill, toward a group of small boulders. If a person is seated on a certain one of these rocks as the spot reaches it, the Sun can be viewed through the calendar hole. This occurs at different times in the afternoon depending on the time of year.

1. What does the passage mainly discuss?
(A) observations of the stars by ancient people
(B) rock formations of Arizona
(C) a site used by ancient people to measure time
(D) the movement of the earth around the Sun

2. The word "obtained" in line 2 is closest in meaning to
(A) acquired
(B) transported
(C) covered
(D) removed

3. The word "attributes" in line 5 is closest in meaning to
(A) changes
(B) characteristics
(C) locations
(D) dimensions

4. The word "its" in line 10 refers to
(A) roof
(B) beam
(C) hole
(D) spot

5. The word "establish" in line 15 is closest in meaning to
(A) create
(B) locate
(C) consult

(D) choose

6. Which of the following is NOT true of the spot of light?
(A) It is caused by sunlight passing through a hole.
(B) It travels across the roof of the shelter.
(C) Its movement is affected by the position of the Sun.
(D) It movement could have been used to estimate the time of day.

7. From which of the following can be the time of year be determined?
(A) The movement of the spot of light from west to east
(B) The speed with which the spot of light moves
(C) The movement of the spot of light from north to south
(D) The size of the sport of light at midday

8. The word "roughly" in line 18 is closest in meaning to
(A) finally
(B) harshly
(C) uneasily
(D) approximately

9. The passage mentions that the Hole in the Rock was used as all of the following EXCEPT
(A) a calendar
(B) a home
(C) a clock
(D) an observatory

10. Which of the following can be inferred from the fourth paragraph?
(A) The boulders are located below the rock shelter.
(B) The person seated on the rock cannot see the shelter.
(C) After it passes the boulders, the spot of light disappears.
(D) The spot of light is largest when it first appears.

PASSAGE 36

The year 1850 may be considered the beginning of a new epoch in America art, with respect to the development of watercolor painting. In December of that year, a group of thirty artists gathered in the studio of John Falconer in New York City and drafted both a constitution and bylaws, establishing The Society for the Promotion of Painting in Water Color. In addition to securing an exhibition space in the Library Society building in lower Manhattan, the society founded a small school for the instruction of watercolor painting. Periodic exhibitions of the members' paintings also included works by noted English artists of the day, borrowed from embryonic private collections in the city. The society's activities also included organized sketching excursions along the Hudson River. Its major public exposure came in 1853, when the society presented works by its members in the "Industry of All Nations" section of the Crystal Palace Exposition in New York.

The society did not prosper, however, and by the time of its annual meeting in 1854 membership had fallen to twenty-one. The group gave up its quarters in the Library Society building and returned to Falconer's studio, where it broke up amid dissension. No further attempt to formally organize the growing numbers of watercolor painters in New York City was made for more than a decade. During that decade, though, Henry Warren's Painting in Water Color was published in New York City in 1856 — the book was a considerable improvement over the only other manual of instruction existing at the time, Elements of Graphic Art, by Archibald Roberson, published in 1802 and by the 1850's long out of print.

In 1866 the National Academy of Design was host to an exhibition of watercolor painting in its elaborate neo-Venetian Gothic building on Twenty-Third Street in New York City. The exhibit was sponsored by an independent group called The Artists Fund Society. Within a few months of this event, forty-two prominent artists living in and near New York City founded The American Society of Painters in Water Colors.

1. This passage is mainly about
(A) the most influential watercolor painters in the mid-1800's
(B) efforts to organize watercolor painters in New York City during the mid-1800's
(C) a famous exhibition of watercolor paintings in New York City in the mid-1800's
(D) styles of watercolor painting in New York City during the mid-1800's

2. The year 1850 was significant in the history of watercolor painting mainly because
(A) a group of artists established a watercolor painting society
(B) watercolor painting was first introduced to New York City
(C) John Falconer established his studio for watercolor painters
(D) The first book on watercolor painting was published

3. The word "securing" in line 5 is closest in meaning to
(A) locking
(B) creating
(C) constructing
(D) acquiring

4. All of the following can be inferred about the Society for the promotion of Painting in Watercolor EXCEPT:
(A) The society exhibited paintings in lower Manhattan.
(B) Instruction in watercolor painting was offered by members of the society
(C) The society exhibited only the paintings of its members.
(D) Scenes of the Hudson River appeared often in the work of society members.

5. The exhibition at the Crystal Palace of the works of the Society for the Promotion of Painting in Watercolor was significant for which of the following reasons?
(A) It resulted in a dramatic increase in the popularity of painting with watercolor.
(B) It was the first time an exhibition was funded by a private source.
(C) It was the first important exhibition of the society's work.
(D) It resulted in a large increase in the membership of the society.

6. The word "it" in line 15 refers to
(A) time
(B) group
(C) building
(D) studio

7. Which of the following is true of watercolor painters in New York City in the late 1850's?
(A) They increased in number despite a lack of formal organization.
(B) They were unable to exhibit their paintings because of the lack of exhibition space.
(C) The Artists Fund Society helped them to form The American Society of Painters in Water Colors.
(D) They formed a new society because they were not allowed to join groups run by other kinds of artists.

8. Henry Warren's Painting in Water Color was important to artists because it
(A) received an important reward
(B) was the only textbook published that taught painting
(C) was much better than an earlier published fundamental of instruction
(D) attracted the interest of art collectors

9. The word "considerable" in line 19 is closest in meaning to
(A) sensitive
(B) great
(C) thoughtful
(D) planned

10. The year 1866 was significant for watercolor painting for which of the following reasons?
(A) Elements of Graphic Art was republished.
(B) Private collections of watercolors were first publicly exhibited.
(C) The neo-Venetian Gothic building on Twenty-Third Street in New York City was built.
(D) The National Academy of Design held an exhibition of watercolor paintings.

11. The word "prominent" in line 25 is closest in meaning to
(A) wealthy
(B) local
(C) famous
(D) organized

PASSAGE 37

A number of factors related to the voice reveal the personality of the speaker. The first is the broad area of communication, which includes imparting information by use of language,

communicating with a group or an individual, and specialized communication through performance. A person conveys thoughts and ideas through choice of words, by a tone of voice that is pleasant or unpleasant, gentle or harsh, by the rhythm that is inherent within the language itself, and by speech rhythms that are flowing and regular or uneven and hesitant, and finally, by the pitch and melody of the utterance. When speaking before a group, a person's tone may indicate unsureness or fright, confidence or calm. At interpersonal levels, the tone may reflect ideas and feelings over and above the words chosen, or may belie them. Here the conversant's tone can consciously or unconsciously reflect intuitive sympathy or antipathy, lack of concern or interest, fatigue, anxiety, enthusiasm or excitement, all of which are usually discernible by the acute listener. Public performance is a manner of communication that is highly specialized with its own techniques for obtaining effects by voice and /or gesture. The motivation derived from the text, and in the case of singing, the music, in combination with the performer's skills, personality, and ability to create empathy will determine the success of artistic, political, or pedagogic communication.

Second, the voice gives psychological clues to a person's self-image, perception of others, and emotional health. Self-image can be indicated by a tone of voice that is confident, pretentious, shy, aggressive, outgoing, or exuberant, to name only a few personality traits. Also the sound may give a clue to the facade or mask of that person, for example, a shy person hiding behind an overconfident front. How a speaker perceives the listener's receptiveness, interest, or sympathy in any given conversation can drastically alter the tone of presentation, by encouraging or discouraging the speaker. Emotional health is evidenced in the voice by free and melodic sounds of the happy, by constricted and harsh sound of the angry, and by dull and lethargic qualities of the depressed.

1. What does the passage mainly discuss?
(A) The function of the voice in performance
(B) The connection between voice and personality
(C) Communication styles
(D) The production of speech

2. What does the author mean by stating that, "At interpersonal levels, tone may reflect ideas and feelings over and above the words chosen" (lines 9-10)?
(A) Feelings are expressed with different words than ideas are.
(B) The tone of voice can carry information beyond the meaning of words.
(C) A high tone of voice reflects an emotional communication.
(D) Feelings are more difficult to express than ideas.

3. The word "Here" in line 10 refers to
(A) interpersonal interactions
(B) the tone
(C) ideas and feelings
(D) words chosen

4. The word "derived" in line 15 is closest in meaning to
(A) discussed

(B) prepared
(C) registered
(D) obtained

5. Why does the author mention "artistic, political, or pedagogic communication" in line 17?
(A) As examples of public performance
(B) As examples of basic styles of communication
(C) To contrast them to singing
(D) To introduce the idea of self-image

6. According to the passage , an exuberant tone of voice, may be an indication of a person's
(A) general physical health
(B) personality
(C) ability to communicate
(D) vocal quality

7. According to the passage , an overconfident front may hide
(A) hostility
(B) shyness
(C) friendliness
(D) strength

8. The word "drastically" in line 24 is closest in meaning to
(A) frequently
(B) exactly
(C) severely
(D) easily

9. The word "evidenced" in line 25 is closest in meaning to
(A) questioned
(B) repeated
(C) indicated
(D) exaggerated

10. According to the passage , what does a constricted and harsh voice indicate?
(A) lethargy
(B) depression
(C) boredom
(D) anger

PASSAGE 38

During most of their lives, surge glaciers behave like normal glaciers, traveling perhaps only a

couple of inches per day. However, at intervals of 10 to 100 years, these glaciers move forward up to 100 times faster than usual. The surge often progresses along a glacier like a great wave, proceeding from one section to another. Subglacial streams of meltwater might act as a lubricant, allowing the glacier to flow rapidly toward the sea. The increasing water pressure under the glacier might lift it off its bed, overcoming the friction between ice and rock, thus freeing the glacier, which rapidly sliders downhill. Surge glaciers also might be influenced by the climate, volcanic heat, or earthquakes. However, many of these glaciers exist in the same area as normal glaciers, often almost side by side.

Some 800 years ago, Alaska's Hubbard Glacier advanced toward the sea, retreated, and advanced again 500 years later. Since 1895, this seventy-mile-long river of ice has been flowing steadily toward the Gulf of Alaska at a rate of approximately 200 feet per year. In June 1986, however, the glacier surged ahead as much as 47 feet a day. Meanwhile, a western tributary, called Valerie Glacier, advanced up to 112 feet a day. Hubbard's surge closed off Russell Fiord with a formidable ice dam, some 2,500 feet wide and up to 800 feet high, whose caged waters threatened the town of Yakutat to the south.

About 20 similar glaciers around the Gulf of Alaska are heading toward the sea. If enough surge glaciers reach the ocean and raise sea levels, west Antarctic ice shelves could rise off the seafloor and become adrift. A flood of ice would then surge into the Southern Sea. With the continued rise in sea level, more ice would plunge into the ocean, causing sea levels to rise even higher, which in turn would release more ice and set in motion a vicious cycle. The additional sea ice floating toward the tropics would increase Earth's albedo and lower global temperatures, perhaps enough to initiate a new ice age. This situation appears to have occurred at the end of the last warm interglacial (the time between glacations), called the Sangamon, when sea ice cooled the ocean dramatically, spawning the beginning of the Ice Age.

1. What is the main topic of the passage ?
(A) The classification of different types of surge glaciers
(B) The causes and consequences of surge glaciers
(C) The definition of a surge glacier
(D) The history of a particular surge glacier

2. The word "intervals" in line 2 is closest in meaning to
(A) records
(B) speeds
(C) distances
(D) periods

3. The author compares the surging motion of a surge glacier to the movement of a
(A) fish
(B) wave
(C) machine
(D) boat

4. Which of the following does the author mention as a possible cause of surging glaciers?
(A) The decline in sea levels

(B) The occurrence of unusually large ocean waves
(C) The shifting Antarctic ice shelves
(D) The pressure of meltwater underneath the glacier

5. The word "freeing" in line 7 is closest in meaning to
(A) pushing
(B) releasing
(C) strengthening
(D) draining

6. According to the passage , the Hubbard Glacier
(A) moves more often than the Valerie Glacier
(B) began movement toward the sea in 1895
(C) is 800 feet wide
(D) has moved as fast as 47 feet per day

7. Yakutat is the name of
(A) an Alaskan town
(B) the last ice age
(C) a surge glacier
(D) an Antarctic ice shelf

8. The word "plunge" in line 22 is closest in meaning to
(A) drop
(B) extend
(C) melt
(D) drift

9. The term "vicious cycle" in line 24 refers to the
(A) movement pattern of surge glaciers
(B) effect surge glaciers could have on the temperature of tropical areas
(C) effect that repeated rising sea levels might have on glacial ice
(D) constant threat surge glaciers could pose to the Gulf of Alaska

10. The author provides a definition for which of the following terms?
(A) tributary (line 15)
(B) ice dam (line 16)
(C) albedo (line 25)
(D) interglacial(line 26)

11. Which of the following statements is supported by the passage ?
(A) The movement of surge glaciers can be prevented.
(B) The next ice age could be caused by surge glaciers.
(C) Surge glaciers help to support Antarctic ice shelves.

(D) Normal glaciers have little effect on Earth's climate.

PASSAGE 39

(25)

The Native American peoples of the north Pacific Coast created a highly complex maritime culture as they invented modes of production unique to their special environment. In addition to their sophisticated technical culture, they also attained one of the most complex social organizations of any nonagricultural people in the world.

In a division of labor similar to that of the hunting peoples in the interior and among foraging peoples throughout the world, the men did most of the fishing, and the women processed the catch. Women also specialized in the gathering of the abundant shellfish that lived closer to shore. They collected oysters, crabs, sea urchins, mussels, abalone, and clams, which they could gather while remaining close to their children. The maritime life harvested by the women not only provided food, but also supplied more of the raw materials for making tools than did fish gathered by the men. Of particular importance for the native tool kit before the introduction of metal was the wide knife made from the larger mussel shells, and a variety of cutting edges that could be made from other marine shells.

The women used their tools to process all of the fish and marine mammals brought in by the men. They cleaned the fish, and dried vast quantities of them for the winter. They sun-dried fish when practical, but in the rainy climate of the coastal area they also used smokehouses to preserve tons of fish and other seafood annually. Each product had its own peculiar characteristics that demanded a particular way of cutting or drying the meat, and each task required its own cutting blades and other utensils.

After drying the fish, the women pounded some of them into fish meal, which was an easily transported food used in soups, stews, or other dishes to provide protein and thickening in the absence of fresh fish or while on long trips. The woman also made a cheese-like substance from a mixture of fish and roe by aging it in storehouses or by burying it in wooden boxes or pits lined with rocks and tree leaves.

1. Which aspect of the lives of the Native Americans of the north Pacific Coast does the passage mainly discuss?

(A) Methods of food preservation

(B) How diet was restricted by the environment

(C) The contributions of women to the food supply

(D) Difficulties in establishing successful farms

2. The word "unique" in line 2 is closest in meaning to

(A) comprehensible

(B) productive

(C) intentional

(D) particular

3. The word "attained" in line 3 is closest in meaning to

(A) achieved

(B) modified

(C) demanded
(D) spread

4. It can be inferred from paragraph 1 that the social organization of many agricultural peoples is
(A) more complex than that of hunters and foragers
(B) less efficient than that of hunters and foragers
(C) more widespread than that of hunters and foragers
(D) better documented than that of hunters and foragers

5. According to the passage , what is true of the "division of labor" mentioned in line 5?
(A) It was first developed by Native Americans of the north Pacific Coast.
(B) It rarely existed among hunting
(C) It was a structure that the Native Americans of the north Pacific Coast shared with many other peoples.
(D) It provided a form of social organization that was found mainly among coastal peoples.

6. The word "abundant" in line 7 is closest in meaning to
(A) prosperous
(B) plentiful
(C) acceptable
(D) fundamental

7. All of the following are true of the north Pacific coast women EXCEPT that they
(A) were more likely to catch shellfish than other kinds of fish
(B) contributed more materials for tool making than the men did
(C) sometimes searched for food far inland from the coast
(D) prepared and preserved the fish

8. The word "They" in line 16 refers to
(A) women
(B) tools
(C) mammals
(D) men

9. The Native Americans of the north Pacific Coast used smokehouses in order to
(A) store utensils used in food preparation
(B) prevent fish and shellfish from spoiling
(C) have a place to store fish and shellfish
(D) prepare elaborate meals

10. The wore "peculiar" in line 19 is closest in meaning to
(A) strange
(B) distinctive
(C) appealing

(D) biological

11. All of following are true of the cheese-like substance mentioned in paragraph 4 EXCEPT that it was
(A) made from fish
(B) not actually cheese
(C) useful on long journeys
(D) made in a short period of time

PASSAGE 40

According to anthropologists, people in preindustrial societies spent 3 to 4 hours per day or about 20 hours per week doing the work necessary for life. Modern comparisons of the amount of work performed per week, however, begin with the Industrial Revolution (1760-1840) when 10- to 12-hour workdays with six workdays per week were the norm. Even with extensive time devoted to work, however, both incomes and standards of living were low. As incomes rose near the end of the Industrial Revolution, it became increasingly common to treat Saturday afternoons as a half-day holiday. The half holiday had become standard practice in Britain by the 1870's, but did not become common in the United States until the 1920's.

In the United States, the first third of the twentieth century saw the workweek move from 60 hours per week to just under 50 hours by the start of the 1930's. In 1914 Henry Ford reduced daily work hours at his automobile plants from 9 to 8. In 1926 he announced that henceforth his factories would close for the entire day on Saturday. At the time, Ford received criticism from other firms such as United States Steel and Westinghouse, but the idea was popular with workers.

The Depression years of the 1930's brought with them the notion of job sharing to spread available work around; the workweek dropped to a modem low for the United States of 35 hours. In 1938 the Fair Labor Standards Act mandated a weekly maximum of 40 hours to begin in 1940, and since that time the 8-hour day, 5-day workweek has been the standard in the United States. Adjustments in various places, however, show that this standard is not immutable. In 1987, for example, German metalworkers struck for and received a 37.5-hour workweek; and in 1990 many workers in Britain won a 37-hour week. Since 1989, the Japanese government has moved from a 6- to a 5-day workweek and has set a national target of 1,800 work hours per year for the average worker. The average amount of work per year in Japan in 1989 was 2,088 hours per worker, compared to 1,957 for the United States and 1,646 for France.

1. What does the passage mainly discuss?
(A) Why people in preindustrial societies worked few hours per week
(B) Changes that have occurred in the number of hours that people work per week
(C) A comparison of the number of hours worked per year in several industries
(D) Working conditions during the Industrial Revolution

2. Compared to preiudustrial times, the number of hours in the workweek in the nineteenth century
(A) remained constant

(B) decreased slightly
(C) decreased significantly
(D) increased significantly
3. The word "norm" in line 5 is closest in meaning to
(A) minimum.
(B) example
(C) possibility
(D) standard

4. The word "henceforth" in line 13 is closest in meaning to
(A) in the end
(B) for a brief period
(C) from that time on
(D) on occasion

5. The "idea" mentioned in line 15 refers to
(A) the 60-hour workweek
(B) the reduction in the cost of automobiles
(C) the reduction in the workweek at some automobile factories
(D) the criticism of Ford by United States Steel and Westinghouse

6. What is one reason for the change in the length of the workweek for the average worker in the United States during the 1930's?
(A) Several people sometimes shared a single job.
(B) Labor strikes in several countries influenced labor policy in the United States.
(C) Several corporations increased the length of the workweek.
(D) The United States government instituted a 35-hour workweek.

7. Which of the following is mentioned as one of the purposes of the Fair Labor Standards Act of 1938 ?
(A) to discourage workers from asking for increased wages
(B) to establish a limit on the number of hours in the workweek
(C) to allow employers to set the length of the workweek for their workers
(D) to restrict trade with countries that had a long workweek

8. The word "mandated" in line 18 is closest in meaning to
(A) required
(B) recommended
(C) eliminated
(D) considered

9. The word "immutable" in line 21 is closest in meaning to
(A) unmatched
(B) irregular

(C) unnecessary
(D) unchangeable

10. Which of the following is NOT mentioned as evidence that the length of the workweek has been declining since the nineteenth century?
(A) The half-day holiday (line 7)
(B) Henry Ford (lines 11-12)
(C) United States Steel and Westinghouse (line 14-15)
(D) German metalworkers (line 21)

11. According to the passage , one goal of the Japanese government is to reduce the average annual amount of work to
(A) 1,646 hours
(B) 1,800 hours
(C) 1,957 hours
(D) 2,088 hours

PASSAGE 41

Biological diversity has become widely recognized as a critical conservation issue only in the past two decades. The rapid destruction of the tropical rain forests, which are the ecosystems with the highest known species diversity on Earth, has awakened people to the importance and fragility of biological diversity. The high rate of species extinctions in these environments is jolting, but it is important to recognize the significance of biological diversity in all ecosystems. As the human population continues to expand, it will negatively affect one after another of Earth's ecosystems. In terrestrial ecosystems and in fringe marine ecosystems (such as wetlands), the most common problem is habitat destruction. In most situations, the result is irreversible. Now humans are beginning to destroy marine ecosystems through other types of activities, such as disposal and run off of poisonous waste; in less than two centuries, by significantly reducing the variety of species on Earth, they have unraveled cons of evolution and irrevocably redirected its course.

Certainly, there have been periods in Earth's history when mass extinctions have occurred. The extinction of the dinosaurs was caused by some physical event, either climatic or cosmic. There have also been less dramatic extinctions, as when natural competition between species reached an extreme conclusion. Only .01 percent of the species that have lived on Earth have survived to the present, and it was largely chance that determined which species survived and which died out.

However, nothing has ever equaled the magnitude and speed with which the human species is altering the physical and chemical world and demolishing the environment. In fact, there is wide agreement that it is the rate of change humans are inflicting, even more than the changes themselves, that will lead to biological devastation. Life on Earth has continually been in flux as slow physical and chemical changes have occurred on Earth, but life needs time to adapt — time for migration and genetic adaptation within existing species and time for the proliferation of new genetic material and new species that may be able to survive in new environments.
1. What does the passage mainly discuss?

(A) The causes of the extinction of the dinosaur
(B) The variety of species found in tropical rain forests.
(C) The impact of human activities on Earth's ecosystems
(D) The time required for species to adapt to new environments

2. The word "critical" in line 1 is closest in meaning to
(A) negative
(B) essential
(C) interesting
(D) complicated

3. The word "jolting" in line 5 is closest in meaning to
(A) predicted
(B) shocking
(C) unknown
(D) illuminating

4. The author mentions the reduction of the variety of species on Earth in line 12 to suggest that
(A) new habitats can be created for species
(B) humans are often made ill by polluted water
(C) some species have been made extinct by human activity
(D) an understanding of evolution can prevent certain species from disappearing

5. The author mentions all of the following as examples of the effect of humans oil the world's ecosystems EXCEPT
(A) destruction of the tropical rain forests
(B) habitat destruction in wetlands
(C) damage to marine ecosystems
(D) the introduction of new varieties of plant species

6. The author mentions the extinction of the dinosaurs in the second paragraph to emphasize that
(A) the cause of the dinosaurs extinction is unknown
(B) Earth's climate has changed significantly since the dinosaurs' extinction,
(C) not all mass extinctions have been caused by human activity
(D) actions by humans could not stop the irreversible process of a species' extinction

7. The word "magnitude" in line 20 is closest in meaning to
(A) concern
(B) determination
(C) carelessness
(D) extent

8. According to the passage , natural evolutionary change is different from changes caused by humans in that changes caused by humans

(A) are occurring at a much faster rate
(B) are less devastating to most species
(C) affect fewer ecosystems
(D) are reversible

9. With which of the following statements would the author be most likely to agree?
(A) Human influence on ecosystems should not be a factor in determining public policy.
(B) The extinction of a few species is an acceptable consequence of human progress.
(C) Technology will provide solutions to problems caused by the destruction of ecosystems.
(D) Humans should be more conscious of the influence they have on ecosystems

PASSAGE 42
(25)

Railroads reshaped the North American environment and reoriented North American behavior. "In a quarter of a century", claimed the Omaha Daily Republican in 1883, "they have made the people of the United States homogeneous, breaking through the peculiarities and provincialisms which marked separate and unmingling sections."

The railroad simultaneously stripped the landscape of the natural resources, made velocity of transport and economy of scale necessary parts of industrial production, and carried consumer goods to households; it dispatched immigrants to unsettled places, drew emigrants away from farms and villages to cities, and sent men and guns to battle. It standardized time and travel, seeking to annihilate distance and space by allowing movement at any time and in any season or type of weather. In its grand and impressive terminals and stations, architects recreated historic Roman temples and public baths, French chateaus and Italian bell towers — edifices that people used as stages for many of everyday life's high emotions: meeting and parting, waiting and worrying, planning new starts or coming home.

Passenger terminals, like the luxury express trains that hurled people over spots, spotlight the romance of railroading. (The twentieth-Century Limited sped between Chicago and New York in twenty hours by 1915). Equally important to everyday life were the slow freight trans chugging through industrial zones, the morning and evening commuter locals shuttling back ions and urban terminals, and the incessant comings and goings that occurred in the classifications, or switching, yards. Moreover, in addition to its being a transportation pathway equipped with a mammoth physical plant of tracks signals, crossings, bridges, and junctions, plus telegraph and telephone lines the railroad nurtured factory complexes, coat piles, warehouses, and generating stations, forming along its right-of-way what has aptly been called "the metropolitan corridor" of the American landscape.

1. What does the passage mainly discuss?
(A) The influence of ancient architecture on the design of railroad terminals
(B) The importance of natural resources in the development of railroads
(C) The railroad's impact on daily life in the United States in the nineteenth century
(D) Technological improvements in the area of communication in the nineteenth century

2. It can be inferred from the quote from the Omaha Daily Republican (line 2-4) that railroads

(A) made all sections of the nation much wealthier
(B) brought more unity to what had been a fragmented nation
(C) reduced dependence on natural resources
(D) had no effect on the environment of the United States

3. The word "it" in line 7 refers to
(A) transport
(B) scale
(C) production
(D) railroad

4. The word "drew" in line 8 is closest
(A) obliged
(B) designed
(C) helped
(D) attracted

5. The word "annihilate" in line 9 is closest in meaning to
(A) conquer
(B) utilize
(C) separate
(D) mechanize

6. The word "Moreover" in line 20 is closest in meaning to
(A) consequently
(B) furthermore
(C) although
(D) because

7. All of the following were true of impressive passenger terminals EXCEPT:
(A) Their architecture was influenced by the architecture of Europe.
(B) Luxury express trains traveled between them.
(C) They were usually located in small towns.
(D) They were important to many commuters.

8. According to the passage , which type of development lined the area along the metropolitan corridor?
(A) Stores and shopping areas
(B) Recreational areas
(C) Industrial
(D) Agricultural

9. The word "aptly" in line 24 is closest in meaning to
(A) appropriately

(B) virtually
(C) consistently
(D) incessantly

10. The author mentions the Twentieth-Century Limited as an example of
(A) a freight train
(B) a commuter train
(C) a luxury train
(D) an underground train

11. The author gives a synonym for which of the following words?
(A) homogeneous (line 3)
(B) standardized (line 9)
(C) temples (line 11)
(D) classification(line 20)

PASSAGE 43

(25)

Elizabeth Hazen and Rachel Brown copatented one of the most widely acclaimed wonder drugs of the post-Second World War years. Hazen and Brown's work was stimulated by the wartime need to find a cure for the fungus infections that afflicted many military personnel. Scientists had been feverishly searching for an antibiotic toxic enough to kill the fungi but safe enough for human use, since, unfortunately, the new "wonder drugs" such as penicillin and streptomycin killed the very bacteria in the body that controlled the fungi. It was to discover a fungicide without that double effect that Brown, of New York State's Department of Health Laboratories at Albany, and Hazen, senior microbiologist at the Department of Health in New York, began their long-distance collaboration. Based upon Hazen's previous research at Columbia University, where she had built an impressive collection of fungus cultures, both were convinced that an antifungal organism already existed in certain soils.

They divided the work. Hazen methodically screened and cultured scores of soil samples, which she then sent to her partner, who prepared extracts, isolated and purified active agents, and shipped them back to New York, where Hazen could study their biological properties. On a 1948 vacation, Hazen fortuitously collected a clump of soil from the edge of W.B. Nourse's cow pasture in Fauquier County, Virginia, that, when tested, revealed the presence of the microorganisms. In farm owner Nourse's honor, Hazen named it Streptomyces Noursei, and within a year the two scientists knew that the properties of their substance distinguished it from previously described antibiotics. After further research they eventually reduced their substance to a fine, yellow powder, which they first named "fungiciden." Then renamed "nystatin" (to honor the New York State laboratory) when they learned the previous name was already in use. Of their major discovery, Brown said lightly that it simply illustrated "how unpredictable consequences can come from rather modest beginnings."

1. What is the main topic of the passage ?
(A) The lives of Hazen and Brown.
(B) The development of a safe fungicide.
(C) The New York State Department of Health.

(D) The development of penicillin.

2. What can be inferred from the passage about penicillin?
(A) It effectively treats fungus infections.
(B) It was developed before nystatin.
(C) It was developed before the Second World War.
(D) One of its by-products is nystatin.

3. Why does the author mention Columbia University in line 10?
(A) Hazen and Brown developed nystatin there.
(B) Brown was educated there.
(C) Hazen did research there.
(D) It awarded a prize to Hazen and Brown.

4. The word "both" in line 11 refers to
(A) Hazen and Brown
(B) penicillin and streptomycin
(C) the Department of Health laboratories at Albany and New York
(D) double effect

5. What substance did Brown and Hazen analyze?
(A) Dirt
(B) Streptomycin
(C) Bacteria
(D) Penicillin

6. Who was W. B. Nourse?
(A) A microbiologist
(B) A teacher of Hazen's
(C) A collector of fungi
(D) A farmer

PASSAGE 44

The nervous system of vertebrates is characterized by a hollow, dorsal nerve cord that ends in the head region as an enlargement, the brain. Even in its most primitive form this cord and its attached nerves are the result of evolutionary specialization, and their further evolution from lower to higher vertebrate classes is a process that is far from fully understood. Nevertheless, the basic arrangements are similar in all vertebrates, and the study of lower animals gives insight into the form and structure of the nervous system of higher animals. Moreover, for any species, the study of the embryological development of the nervous system is indispensable for an understanding of adult morphology.

In any vertebrate two chief parts of the nervous system may be distinguished. These are the central nervous system (the nerve cord mentions above), consisting of the brain and spinal cord,

and the peripheral nervous system, consisting of the cranial, spinal, and peripheral nerves, together with their motor and sensory endings. The term "autonomic nervous system" refers to the parts of the central and peripheral systems that supply and regulate the activity of cardiac muscle, smooth muscle, and many glands.

The nervous system is composed of many millions of nerve and glial cells, together with blood vessels and a small amount of connective tissue. The nerve cells, or "neurons", are characterized by many processes and are specialized in that they exhibit to a great degree the phenomena of irritability and conductivity. The glial cells of the central nervous system are supporting cells collectively termed "neuroglia". They are characterized by short processes that have special relationships to neurons, blood vessels, and connective tissue. The comparable cells in the peripheral nervous system are termed "neurilemmal" cells.

1. What does the passage mainly discuss?
(A) The parts of a neuron
(B) The structure of animals' nerve
(C) The nervous system of vertebrates
(D) The development of the brain

2. According to the passage , the nerve cord of vertebrates is
(A) large
(B) hollow
(C) primitive
(D) embryological

3. The author implies that a careful investigation of a biological structure in an embryo may
(A) Improved research of the same structure in other species
(B) A better understanding of the fully developed structure
(C) Discovering ways in which poor development can be corrected
(D) A method by which scientists can document the various stages of development

4. The two main parts of the central nervous system are the brain and the
(A) sensory endings
(B) cranial nerve
(C) spinal cord
(D) peripheral nerves

5. All of the following are described as being controlled by the autonomic nervous system EXCEPT
(A) connective tissue
(B) cardiac muscle
(C) glandular activity
(D) smooth muscle

6. In what lines does the author identify certain characteristic of nerve cells?
(A) lines 1-2

(B) lines 9-12
(C) lines 12-14
(D) lines 16-18

PASSAGE 45

By the turn of the century, the middle-class home in North American had been transformed. "The flow of industry has passed and left idle the loom in the attic, the soap kettle in the shed," Ellen Richards wrote in 1908. The urban middle class was now able to buy a wide array of food products and clothing — baked goods, canned goods, suits, shirts, shoes, and dresses. Not only had household production waned, but technological improvements were rapidly changing the rest of domestic work. Middle-class homes had indoor running water and furnaces, run on oil, coal, or gas, that produced hot water. Stoves were fueled by gas, and delivery services provided ice for refrigerators. Electric power was available for lamps, sewing machines, irons, and even vacuum cleaners. No domestic task was unaffected. Commercial laundries, for instance, had been doing the wash for urban families for decades; by the early 1900's the first electric washing machines were on the market.

One impact of the new household technology was to draw sharp dividing lines between women of different classes and regions. Technological advances always affected the homes of the wealthy first, filtering downward into the urban middle class. But women who lived on farms were not yet affected by household improvements. Throughout the nineteenth century and well into the twentieth, rural homes lacked running water and electric power. Farm women had to haul large quantities of water into the house from wells or pumps for every purpose. Doing the family laundry, in large vats heated over stoves, continued to be a full day's work, just as canning and preserving continued to be seasonal necessities. Heat was provided by wood or coal stoves. In addition, rural women continued to produce most of their families' clothing. The urban poor, similarly, reaped few benefits from household improvements. Urban slums such as Chicago's nineteenth ward often had no sewers, garbage collection, or gas or electric lines; and tenements lacked both running water and central heating. At the turn of the century, variations in the nature of women's domestic work were probably more marked than at any time before.

1. What is the main topic of the passage ?
(A) The creation of the urban middle class
(B) Domestic work at the turn of the century
(C) The spread of electrical power in the United States
(D) Overcrowding in American cities.

2. According to the passage , what kind of fuel was used in a stove in a typical middle-class household?
(A) oil
(B) coal
(C) gas
(D) wood

3. Which of the following is NOT mentioned as a household convenience in the passage ?
(A) the electric fan
(B) the refrigerator
(C) the electric light
(D) the washing machine

4. According to the passage , who were the first beneficiaries of technological advances?
(A) Farm women
(B) The urban poor
(C) The urban middle class
(D) The wealthy

5. The word "reaped" in line 23 is closest in meaning to
(A) gained
(B) affected
(C) wanted
(D) accepted

6. Which of the following best characterizes the passage 's organization?
(A) analysis of a quotation
(B) chronological narrative
(C) extended definition
(D) comparison and contrast

7. Where in the passage does the author discuss conditions in poor urban neighborhoods?
(A) lines 3-5
(B) lines 6-7
(C) lines 8-9
(D) lines 22-23

PASSAGE 46

Pennsylvania's colonial ironmasters forged iron and a revolution that had both industrial and political implications. The colonists in North America wanted the right to the profits gained from their manufacturing. However, England wanted all of the colonies' rich ores and raw materials to feed its own factories, and also wanted the colonies to be a market for its finished goods. England passed legislation in 1750 to prohibit colonists from making finished iron products, but by 1771, when entrepreneur Mark Bird established the Hopewell blast furnace in Pennsylvania, iron making had become the backbone of American industry. It also had become one of the major issues that fomented the revolutionary break between England and the British colonies. By the time the War of Independence broke out in 1776, Bird, angered and determined, was manufacturing cannons and shot at Hopewell to be used by the Continental Army.

After the war, Hopewell, along with hundreds of other "iron plantations," continued to form the new nation's industrial foundation well into the nineteenth century. The rural landscape became dotted with tall stone pyramids that breathed flames and smoke, charcoal-fueled iron

furnaces that produced the versatile metal so crucial to the nation's growth. Generations of ironmasters, craftspeople, and workers produced goods during war and peace-ranging from cannons and shot to domestic items such as cast-iron stoves, pots, and sash weights for windows.

The region around Hopewell had everything needed for iron production: a wealth of iron ore near the surface, limestone for removing impurities from the iron, hardwood forests to supply the charcoal used for fuel, rushing water to power the bellows that pumped blasts of air into the furnace fires, and workers to supply the labor. By the 1830's, Hopewell had developed a reputation for producing high quality cast-iron stoves, for which there was a steady market. As Pennsylvania added more links to its transportation system of roads, canals, and railroads, it became easier to ship parts made by Hopewell workers to sites all over the east coast. There they were assembled into stoves and sold from Rhode Island to Maryland as the "Hopewell stove". By the time the last fires burned out at Hopewell ironworks in 1883, the community had produced some 80,000 cast-iron stoves.

1. The word "implications" in line 2 is closest in meaning to
(A) significance
(B) motives
(C) foundations
(D) progress

2. It can be inferred that the purpose of the legislation passed by England in 1750 was to
(A) reduce the price of English-made iron goods sold in the colonies
(B) prevent the outbreak of the War of Independence
(C) require colonists to buy manufactured goods from England.
(D) keep the colonies from establishing new markets for their raw materials.

3. The author compares iron furnaces to which of the following?
(A) cannons
(B) pyramids
(C) pots
(D) windows

4. The word "rushing" in line 21 is closest in meaning to
(A) reliable
(B) fresh
(C) appealing
(D) rapid

5. Pennsylvania was an ideal location for the Hopewell ironworks for all of the following reasons EXCEPT
(A) Many workers were available in the area.
(B) The center of operations of the army was nearby.
(C) The metal ore was easy to acquire
(D) There was an abundance of wood.

6. The passage mentions "roads, canals, and railroads" in line 25 in order to explain that
(A) improvements in transportation benefited the Hopewell ironworks
(B) iron was used in the construction of various types of transportation
(C) the transportation system of Pennsylvania was superior to that of other states.
(D) Hopewell never became a major transportation center

7. The word "they" in line 26 refers to
(A) links
(B) parts
(C) workers
(D) sites

8. The word "some" in line 28 is closest in meaning to
(A) only
(B) a maximum of
(C) approximately
(D) a variety of

PASSAGE 47

As the twentieth century began, the importance of formal education in the United States increased. The frontier had mostly disappeared and by 1910 most Americans lived in towns and cities. Industrialization and the bureaucratization of economic life combined with a new emphasis upon credentials and expertise to make schooling increasingly important for economic and social mobility. Increasingly, too, schools were viewed as the most important means of integrating immigrants into American society.

The arrival of a great wave of southern and eastern European immigrants at the turn of the century coincided with and contributed to an enormous expansion of formal schooling. By 1920 schooling to age fourteen or beyond was compulsory in most states, and the school year was greatly lengthened. Kindergartens, vacation schools, extracurricular activities, and vocational education and counseling extended the influence of public schools over the lives of students, many of whom in the larger industrial cities were the children of immigrants. Classes for adult immigrants were sponsored by public schools, corporations, unions, churches, settlement houses, and other agencies.

Reformers early in the twentieth century suggested that education programs should suit the needs of specific populations. Immigrant women were one such population. Schools tried to educate young women so they could occupy productive places in the urban industrial economy, and one place many educators considered appropriate for women was the home.

Although looking after the house and family was familiar to immigrant women, American education gave homemaking a new definition. In preindustrial economies, homemaking had meant the production as well as the consumption of goods, and it commonly included income-producing activities both inside and outside the home, in the highly industrialized early-twentieth-century United States, however, overproduction rather than scarcity was becoming a problem. Thus, the ideal American homemaker was viewed as a consumer rather than a producer. Schools trained

women to be consumer homemakers cooking, shopping, decorating, and caring for children "efficiently" in their own homes, or if economic necessity demanded, as employees in the homes of others. Subsequent reforms have made these notions seem quite out-of-date.

1. It can be inferred from paragraph 1 that one important factor in the increasing importance of education in the United States was
(A) the growing number of schools in frontier communities
(B) an increase in the number of trained teachers
(C) the expanding economic problems of schools
(D) the increased urbanization of the entire country

2. The word "means" in line 6 is closest in meaning to
(A) advantages
(B) probability
(C) method
(D) qualifications

3. The phrase "coincided with" in line 8 is closest in meaning to
(A) was influenced by
(B) happened at the same time as
(C) began to grow rapidly
(D) ensured the success of

4. According to the passage , one important change in United States education by the 1920's was that
(A) most places required children to attend school
(B) the amount of time spent on formal education was limited
(C) new regulations were imposed on nontraditional education
(D) adults and children studied in the same classes

5. Vacation schools and extracurricular activities are mentioned in lines 10-11 to illustrate
(A) alternatives to formal education provided by public schools
(B) the importance of educational changes
(C) activities that competed to attract new immigrants to their programs.
(D) the increased impact of public schools on students.

6. According to the passage , early-twentieth century education reformers believed that
(A) different groups needed different kinds of education
(B) special programs should be set up in frontier communities to modernize them
(C) corporations and other organizations damaged educational progress
(D) more women should be involved in education and industry

7. The word "it" in line 22 refers to
(A) consumption
(B) production

(C) homemaking
(D) education

PASSAGE 48
(30)

According to sociologists, there are several different ways in which a person may become recognized as the leader of a social group in the United States. In the family, traditional cultural patterns confer leadership on one or both of the parents. In other cases, such as friendship groups, one or more persons may gradually emerge as leaders, although there is no formal process of selection. In larger groups, leaders are usually chosen formally through election or recruitment.

Although leaders are often thought to be people with unusual personal ability, decades of research have failed to produce consistent evidence that there is any category of "natural leaders." It seems that there is no set of personal qualities that all leaders have in common; rather, virtually any person may be recognized as a leader if the person has qualities that meet the needs of that particular group.

Furthermore, although it is commonly supposed that social groups have a single leader, research suggests that there are typically two different leadership roles that are held by different individuals. Instrumental leadership is leadership that emphasizes the completion of tasks by a social group. Group members look to instrumental leaders to "get things done." Expressive leadership, on the other hand, is leadership that emphasizes the collective well-being of a social group's members. Expressive leaders are less concerned with the overall goals of the group than with providing emotional support to group members and attempting to minimize tension and conflict among them. Group members expect expressive leaders to maintain stable relationships within the group and provide support to individual members.

Instrumental leaders are likely to have a rather secondary relationship to other group members. They give orders and may discipline group members who inhibit attainment of the group's goals. Expressive leaders cultivate a more personal or primary relationship to others in the group. They offer sympathy when someone experiences difficulties or is subjected to discipline, are quick to lighten a serious moment with humor, and try to resolve issues that threaten to divide the group. As the differences in these two roles suggest, expressive leaders generally receive more personal affection from group members; instrumental leaders, if they are successful in promoting group goals, may enjoy a more distant respect.

1. What does the passage mainly discuss?
(A) The problems faced by leaders
(B) How leadership differs in small and large groups
(C) How social groups determine who will lead them
(D) The role of leaders in social groups

2. The passage mentions all of the following ways by which people can become leaders EXCEPT
(A) recruitment
(B) formal election process
(C) specific leadership training
(D) traditional cultural patterns

3. In mentioning "natural leaders" in line 9, the author is making the point that
(A) few people qualify as "natural leaders"
(B) there is no proof that "natural leaders" exist
(C) "natural leaders' are easily accepted by the members of a social group
(D) "natural leaders" share a similar set of characteristics

4. Which of the following statements about leadership can be inferred from paragraph 2?
(A) A person who is an effective leader of a particular group may not be an effective leader in another group.
(B) Few people succeed in sharing a leadership role with another person.
(C) A person can best learn how to be an effective leader by studying research on leadership.
(D) Most people desire to be leaders but can produce little evidence of their qualifications.

5. The passage indicates that instrumental leaders generally focus on
(A) ensuring harmonious relationships
(B) sharing responsibility with group members
(C) identifying new leaders
(D) achieving a goal

6. The word "collective" in line 17 is closest in meaning to
(A) necessary
(B) typical
(C) group
(D) particular

7. The word "them" in line 19 refers to
(A) expressive leaders
(B) goals of the group
(C) group members
(D) tension and conflict

8. A "secondary relationship" mentioned in line 22 between a leader and the members of a group could best be characterized as
(A) distant
(B) enthusiastic
(C) unreliable
(D) personal

9. The word "resolve" in line 27 is closest in meaning to
(A) avoid repeating
(B) talk about
(C) avoid thinking about
(D) find a solution for

10. Paragraphs 3 and 4 organize the discussion of leadership primarily in term of
(A) examples that illustrate a problem
(B) cause and effect analysis
(C) narration of events
(D) comparison and contrast

PASSAGE 49

Archaeological literature is rich in descriptions of pot making. Unlike modern industrial potters, prehistoric artisans created each of their pieces individually, using the simplest technology but demonstrating remarkable skill in making and adorning their vessels.

The clay used in prehistoric pot making was invariably selected with the utmost care: often it was traded over considerable distances. The consistency of the clay was crucial: it was pounded meticulously and mixed with water to make it entirely even in texture. By careful kneading, the potter removed the air bubbles and made the clay as plastic as possible, allowing it to be molded into shape as the pot was built up, When a pot is fired, it loses its water and can crack, so the potter added a temper to the clay, a substance that helped reduce shrinkage and cracking.

Since surface finishes provided a pleasing appearance and also improved the durability in day-to-day use, the potter smoothed the exterior surface of the pot with wet hands. Often a wet clay solution, known as a slip, was applied to the smooth surface. Brightly colored slips were often used and formed painted decorations on the vessel. In later times. Glazes came into use in some areas. A glaze is a form of slip that turns to a glasslike finish during high-temperature firing. When a slip was not applied, the vessel was allowed to dry slowly until the external surface was almost like leather in texture. It was then rubbed with a round stone or similar object to give it a shiny, hard surface. Some pots were adorned with incised or stamped decorations.

Most early pottery was then fired over open hearths. The vessels were covered with fast-burning wood; as it burned, the ashes would all around the pots and bake them evenly over a few hours. Far higher temperatures were attained in special ovens, known as kilns, which would not only bake the clay and remove its plasticity, but also dissolve carbons and iron compounds. Kilns were also used for glazing, when two firings were needed. Once fired, the pots were allowed to cool slowly, and small cracks were repaired before they were ready for use.

1. What does the passage mainly discuss?
(A) Why archaeologists study prehistoric pot making
(B) How early pottery was made and decorated
(C) The development of kilns used by early potters
(D) The variety of decorations on Prehistoric pottery

2. The word " meticulously" in line 7 is closest in meaning to
(A) heavily
(B) initially
(C) carefully
(D) completely

3. Which of the following was a process used by prehistoric potters to improve the texture of the clay?
(A) adding temper
(B) removing the water
(C) beating on the clay
(D) mixing the clay with plastic substances

4. The word "durability" in line 13 is closest in meaning to
(A) quality
(B) endurance
(C) adaptability
(D) applicability

5. Prehistoric potters applied slips and glazes to their vessels in order to do which of the following?
(A) Improve the appearance of the vessels
(B) prevent the vessels from leaking
(C) Help the vessels to dry more quickly
(D) Give the vessels a leather like quality

6. Which of the following was a method used by some potters to give vessels a glassy finish?
(A) Smoothing them with wet hands
(B) Mixing the clay with colored solutions
(C) Baking them at a very high temperature
(D) Rubbing them with a smooth hard object

7. The word "incised" in line 20 is closest in meaning to
(A) designed
(B) carved
(C) detailed
(D) painted

8. The word "they" in ling 27 refers to
(A) kilns
(B) firings
(C) pots
(D) cracks

9. According to the passage , the advantage of kilns over open fires was that the kilns
(A) required less wood for burning
(B) reached higher temperatures
(C) kept ashes away from the pots
(D) baked vessels without cracking them

10. Look at the terms "temper" (line 10), "glazes" (line 16), "kilns" (line 24), and "compounds" (line 25). Which of these terms is NOT defined in the passage ?
(A) temper
(B) glazes
(C) kilns
(D) compounds

11. The passage mentions that when pottery is fired under burning wood, the ashes help
(A) prevent the clay from cracking
(B) produce a more consistently baked pot
(C) attain a very high temperature
(D) give the vessel a glasslike finish

PASSAGE 50

The Arts and Crafts Movement in the United States was responsible for sweeping changes in attitudes toward the decorative arts, then considered the minor or household arts. Its focus on decorative arts helped to induce United States museums and private collectors to begin collecting furniture, glass, ceramics, metalwork, and textiles in the late nineteenth and early twentieth centuries. The fact that artisans, who were looked on as mechanics or skilled workers in the eighteenth century, are frequently considered artists today is directly attributable to the Arts and Crafts Movement of the nineteenth century. The importance now placed on attractive and harmonious home decoration can also be traced to this period, when Victorian interior arrangements were revised to admit greater light and more freely flowing spaces.

The Arts and Crafts Movement reacted against mechanized processes that threatened handcrafts and resulted in cheapened, monotonous merchandise. Founded in the late nineteenth century by British social critics John Ruskin and William Morris, the movement revered craft as a form of art. In a rapidly industrializing society, most Victorians agreed that art was an essential moral ingredient in the home environment, and in many middle- and working-class homes craft was the only form of art, Ruskin and his followers criticized not only the degradation of artisans reduced to machine operators, but also the impending loss of daily contact with handcrafted objects, fashioned with pride, integrity, and attention to beauty.

In the United States as well as in Great Britain, reformers extolled the virtues of handcrafted objects: simple, straightforward design; solid materials of good quality; and sound, enduring construction techniques. These criteria were interpreted in a variety of styles, ranging from rational and geometric to romantic or naturalistic. Whether abstract, stylized, or realistically treated, the consistent theme in virtually all Arts and Crafts design is nature.

The Arts and Crafts Movement was much more than a particular style; it was a philosophy of domestic life. Proponents believed that if simple design, high-quality materials, and honest construction were realized in the home and its appointments, then the occupants would enjoy moral and therapeutic effects. For both artisan and consumer, the Arts and Crafts doctrine was seen as a magical force against the undesirable effects of industrialization. 1. The passage primarily focuses on nineteenth-century arts and crafts in terms of which of the following?
(A) Their naturalistic themes

(B) Their importance in museum collections
(C) Their British origin
(D) Their role in an industrialized society

2. According to the passage , before the nineteenth century, artisans were thought to be
(A) defenders of moral standards
(B) creators of cheap merchandise
(C) skilled workers
(D) artists

3. It can be inferred from the passage that the Arts and Crafts Movement would have considered all of the following to be artists EXCEPT
(A) creators of textile designs
(B) people who produce handmade glass objects
(C) operators of machines that automatically cut legs for furniture
(D) metalworkers who create unique pieces of jewelry

4. The word "revered" in line 14 is closest in meaning to
(A) respected
(B) described
(C) avoided
(D) created

5. According to paragraph 2, the handcrafted objects in the homes of middle- and working-class families usually were
(A) made by members of the family
(B) the least expensive objects in their homes
(C) regarded as being morally uplifting
(D) thought to symbolize progress

6. The word "extolled" in line 20 is closest in meaning to
(A) exposed
(B) praised
(C) believed
(D) accepted

7. The author mentions all of the following as attributes of handcrafted objects EXCEPT
(A) the pride with which they were crafted
(B) the complexity of their design
(C) the long time that they lasted
(D) the quality of their materials

8. The word "consistent" in line 24 is closest in meaning to
(A) conservative

(B) considerable
(C) constant
(D) concrete

9. According to the passage , which of the following changes occurred at the same time as the Arts and Crafts Movement?
(A) The creation of brighter and more airy spaces inside homes
(B) The rejection of art that depicted nature in a realistic manner
(C) A decline of interest in art museum collections
(D) An increase in the buying of imported art objects

10. Which of the following statements is supported by the passage ?
(A) Private collectors in the nineteenth century concentrated on acquiring paintings.
(B) The Arts and Crafts Movement in the United States, unlike the one in Britain, did not react strongly against mechanized processes.
(C) Handcrafted objects in the United States and Britain in the nineteenth century did not use geometric designs.
(D) The Arts and Crafts Movement believed in the beneficial effect for people from being surrounded by beautiful objects.

PASSAGE 51
(30)

In 1972, a century after the first national park in the United States was established at Yellowstone, legislation was passed to create the National Marine Sanctuaries Program. The intent of this legislation was to provide protection to selected coastal habitats similar to that existing for land areas designated as national parks. The designation of an area's marine sanctuary indicates that it is a protected area, just as a national park is. People are permitted to visit and observe there, but living organisms and their environments may not be harmed or removed.

The National Marine Sanctuaries Program is administered by the National Oceanic and Atmospheric Administration, a branch of the United States Department of Commerce. Initially, 70 sites were proposed as candidates for sanctuary status. Two and a half decades later, only fifteen sanctuaries had been designated, with half of these established after 1978. They range in size from the very small (less than 1 square kilometer) Fagatele Bay National Marine Sanctuary in American Samoa to the Monterey Bay National Marine Sanctuary in California, extending over 15,744 square kilometers.

The National Marine Sanctuaries Program is a crucial part of new management practices in which whole communities of species, and not just individual species, are offered some degree of protection from habitat degradation and overexploitation. Only in this way can a reasonable degree of marine species diversity be maintained in a setting that also maintains the natural interrelationships that exist among these species.

Several other types of marine protected areas exist in the United States and other countries. The National Estuarine Research Reserve System, managed by the United States government, includes 23 designated and protected estuaries. Outside the United States, marine protected-area

programs exist as marine parks, reserves, and preserves. Over 100 designated areas exist around the periphery of the Caribbean Sea. Others range from the well-known Australian Great Barrier Reef Marine Park to lesser-known parks in countries such as Thailand and Indonesia, where tourism is placing growing pressures on fragile coral reef systems. As state, national, and international agencies come to recognize the importance of conserving marine biodiversity, marine projected areas. whether as sanctuaries, parks, or estuarine reserves, will play an increasingly important role in preserving that diversity.

1. What does the passage mainly discuss?
(A) Differences among marine parks, sanctuaries, and reserves
(B) Various marine conservation programs
(C) International agreements on coastal protection
(D) Similarities between land and sea protected environments

2. The word "intent" in line 3 is closest in meaning to
(A) repetition
(B) approval
(C) goal
(D) revision

3. The word "administered" in line 8 is closest in meaning to
(A) managed
(B) recognized
(C) opposed
(D) justified

4. The word "these" in line 11 refers to
(A) sites
(B) candidates
(C) decades
(D) sanctuaries

5. The passage mentions the Monterey Bay National Marine Sanctuary (lines 13-14) as an example of a sanctuary that
(A) is not well know
(B) covers a large area
(C) is smaller than the Fagatele Bay National Marine Sanctuary
(D) was not originally proposed for sanctuary status

6. According to the passage , when was the National Marine Sanctuaries Program established?
(A) before 1972
(B) after 1987
(C) one hundred years before national parks were established
(D) one hundred years after Yellowstone National Park was established

7. According to the passage , all of the following are achievements of the National Marine Sanctuaries Program EXCEPT

(A) the discovery of several new marine organisms

(B) the preservation of connections between individual marine species

(C) the protection of coastal habitats

(D) the establishment of areas where the public can observe marine life

8. The word "periphery" in line 24 is closest in meaning to

(A) depth

(B) landmass

(C) warm habitat

(D) outer edge

9. The passage mentions which of the following as a threat to marine areas outside the United States?

(A) limitations in financial support

(B) the use of marine species as food

(C) variability of the climate

(D) increases in tourism

PASSAGE 52

(30)

In the early 1800's, over 80 percent of the United States labor force was engaged in agriculture. Sophisticated technology and machinery were virtually nonexistent. People who lived in the cities and were not directly involved in trade often participated in small cottage industries making handcrafted goods. Others cured meats, ran bakeries, or otherwise produced needed goods and commodities. Blacksmiths, silversmiths, candle makers, and other artisans worked in their homes or barns, relying on help of family members or apprentices.

Perhaps no single phenomenon brought more widespread and lasting change to the United States society than the rise of industrialization. Industrial growth hinged on several economic factors. First, industry requires an abundance of natural resources, especially coal, iron ore, water, petroleum, and timber — all readily available on the North American continent. Second, factories demand a large labor supply. Between the 1870's and the First World War (1914-1918), approximately 23 million immigrants streamed to the United States, settled in cities, and went to work in factories and mines. They also helped build the vast network of canals and railroads that crisscrossed the continent and linked important trade centers essential to industrial growth.

Factories also offered a reprieve from the backbreaking work and financial unpredictability associated with farming. Many adults, poor and disillusioned with farm life, were lured to the cities by promises of steady employment, regular paychecks, increased access to goods and services, and expanded social opportunities. Others were pushed there when new technologies made their labor cheap or expendable; inventions such as steel plows and mechanized harvesters allowed one farmhand to perform work that previously had required several, thus making farming capital-intensive rather than labor-intensive.

The United States economy underwent a massive transition and the nature of work was permanently altered. Whereas cottage industries relied on a few highly skilled craft workers who slowly and carefully converted raw materials into finished products from start to finish, factories relied on specialization. While factory work was less creative and more monotonous, it was also more efficient and allowed mass production of goods at less expense.

1. What aspect of life in the United States does the passage mainly discuss?
(A) The transition from an agricultural to an industrial economy
(B) The inventions that transformed life in the nineteenth century
(C) The problems associated with the earliest factories
(D) The difficulty of farm life in the nineteenth century

2. Blacksmiths, silversmiths, and candle makers are mentioned in lines 5-6 as examples of artisans who
(A) maintained their businesses at home
(B) were eventually able to use sophisticated technology
(C) produced unusual goods and commodities
(D) would employ only family members

3. The phrase "hinged on" in line 9 is closest in meaning to
(A) recovered from
(B) depended on
(C) started on
(D) contributed to

4. Which of the following is mentioned in the passage as a reason for the industrial growth that occurred in the United States before 1914?
(A) The availability of natural resources found only in the United States
(B) The decrease in number of farms resulting from technological advances
(C) The replacement of canals and railroads by other forms of transportation
(D) The availability of a large immigrant work force

5. The word "lured" in line 19 is closest in meaning to
(A) attracted
(B) assigned
(C) restricted
(D) attached

6. The word "Others" in line 20 refers to other
(A) adults
(B) promises
(C) goods and services
(D) social opportunities

7. The word "expendable" in line 21 is closest in meaning to

(A) nonproductive
(B) unacceptable
(C) nonessential
(D) unprofitable

8. It can be inferred from the passage that industrialization affected farming in that industrialization
(A) increased the price of farm products
(B) limited the need for new farm machinery
(C) created new and interesting jobs on farms
(D) reduced the number of people willing to do farm work

9. What does the author mean when stating that certain inventions made farming "capital-intensive rather than labor-intensive" (lines 23-24)?
(A) Workers had to be trained to operate the new machines.
(B) Mechanized farming required more capital and fewer laborers.
(C) The new inventions were not helpful for all farming activities.
(D) Human labor could still accomplish as much work as the first machines.

10. According to the passage , factory workers differed from craft workers in that factory workers
(A) were required to be more creative
(B) worked extensively with raw materials
(C) changed jobs frequently
(D) specialized in one aspect of the finished product only

PASSAGE 53

Glass fibers have a long history. The Egyptians made coarse fibers by 1600 B.C., and fibers survive as decorations on Egyptian pottery dating back to 1375 B.C. During the Renaissance (fifteenth and sixteenth centuries A.D.), glassmakers from Venice used glass fibers to decorate the surfaces of plain glass vessels. However, glassmakers guarded their secrets so carefully that no one wrote about glass fiber production until the early seventeenth century.

The eighteenth century brought the invention of "spun glass" fibers. René-Antoine de Réaumur, a French scientist, tried to make artificial feathers from glass. He made fibers by rotating a wheel through a pool of molten glass, pulling threads of glass where the hot thick liquid stuck to the wheel. His fibers were short and fragile, but he predicted that spun glass fibers as thin as spider silk would be flexible and could be woven into fabric.

By the start of the nineteenth century, glassmakers learned how to make longer, stronger fibers by pulling them from molten glass with a hot glass tube. Inventors wound the cooling end of the thread around a yarn reel, then turned the reel rapidly to pull more fiber from the molten glass. Wandering tradespeople began to spin glass fibers at fairs, making decorations and ornaments as novelties for collectors, but this material was of little practical use; the fibers were brittle, ragged, and no longer than ten feet, the circumference of the largest reels. By the mid-1870's, however, the

best glass fibers were finer than silk and could be woven into fabrics or assembled into imitation ostrich feathers to decorate hats. Cloth of white spun glass resembled silver; fibers drawn from yellow-orange glass looked golden.

Glass fibers were little more than a novelty until the 1930's, when their thermal and electrical insulating properties were appreciated and methods for producing continuous filaments were developed. In the modern manufacturing process, liquid glass is fed directly from a glass-melting furnace into a bushing, a receptacle pierced with hundreds of fine nozzles, from which the liquid issues in fine streams. As they solidify, the streams of glass are gathered into a single strand and wound onto a reel.

1. Which of the following aspects of glass fiber does the passage mainly discuss?
(A) The major developments in its production
(B) Its relationship with pottery making
(C) Important inventors in its long history
(D) The variety of its uses in modern industry

2. The word "coarse" in line 1 is closest in meaning to
(A) decorative
(B) natural
(C) crude
(D) weak

3. Why was there nothing written about the making of Renaissance glass fibers until the seventeenth century?
(A) Glassmakers were unhappy with the quality of the fibers they could make.
(B) Glassmakers did not want to reveal the methods they used.
(C) Few people were interested in the Renaissance style of glass fibers.
(D) Production methods had been well known for a long time.

4. According to the passage , using a hot glass tube rather than a wheel to pull fibers from molten glass made the fibers
(A) quicker to cool
(B) harder to bend
(C) shorter and more easily broken
(D) longer and more durable

5. The phrase "this material" in line 16 refers to
(A) glass fibers
(B) decorations
(C) ornaments
(D) novelties for collectors

6. The word "brittle" in line 17 is closest in meaning to
(A) easily broken
(B) roughly made

(C) hairy
(D) shiny

7. The production of glass fibers was improved in the nineteenth century by which of the following
(A) Adding silver to the molten glass
(B) Increasing the circumference of the glass tubes
(C) Putting silk thread in the center of the fibers
(D) Using yarn reels

8. The word "appreciated" in line 23 is closest in meaning to
(A) experienced
(B) recognized
(C) explored
(D) increased

9. Which of the following terms is defined in the passage ?
(A) invention (line 7)
(B) circumference (line 17)
(C) manufacturing process (line 24)
(D) bushing (line 25)

PASSAGE 54

Composers today use a wider variety of sounds than ever before, including many that were once considered undesirable noises. Composer Edgard Varèse (1883-1965) called thus the "liberation of sound...the right to make music with any and all sounds." Electronic music, for example — made with the aid of computers, synthesizers, and electronic instruments — may include sounds that in the past would not have been considered musical. Environmental sounds, such as thunder, and electronically generated hisses and blips can be recorded, manipulated, and then incorporated into a musical composition. But composers also draw novel sounds from voices and nonelectronic instruments. Singers may be asked to scream, laugh, groan, sneeze, or to sing phonetic sounds rather than words. Wind and string players may lap or scrape their instruments. A brass or woodwind player may hum while playing, to produce two pitches at once; a pianist may reach inside the piano to pluck a string and then run a metal blade along it. In the music of the Western world, the greatest expansion and experimentation have involved percussion instruments, which outnumber strings and winds in many recent compositions. Traditional percussion instruments are struck with new types of beaters; and instruments that used to be couriered unconventional in Western music — tom-toms, bongos, slapsticks, maracas—are widely used.

In the search for novel sounds, increased use has been made in Western music of microtones. Non-western music typically divides and interval between two pitches more finely than western music does, thereby producing a greater number of distinct tones, or microtones, within the same interval. Composers such as Krzysztof Penderecki create sound that borders on electronic noise through tone clusters — closely spaced tones played together and heard as a mass, block, or band

of sound. The directional aspect of sound has taken on new importance as well. Loudspeakers or groups of instruments may be placed at opposite ends of the stage, in the balcony, or at the back and sides of the auditorium.

Because standard music notation makes no provision for many of these innovations, recent music scores may contain graphlike diagrams, new note shapes and symbols, and novel ways of arranging notation on the page.

1. What does the passage mainly discuss?
(A) The use of nontraditional sounds in contemporary music
(B) How sounds are produced electronically
(C) How standard musical notation has been adapted for nontraditional sounds
(D) Several composers who have experimented with the electronic production of sound

2. The word "wider" in one 1 is closest in meaning to more impressive
(A) more distinctive
(B) more controversial
(C) more extensive
(D) more impressive

3. The passage suggests that Edgard Varèse is an example of a composer who
(A) criticized electronic music as too noiselike
(B) modified sonic of the electronic instruments he used in his music
(C) believed that any sound could be used in music
(D) wrote music with environmental themes

4. The word "it" in line 12 refers to
(A) piano
(B) string
(C) blade
(D) music

5. According to the passage , which of the following types of instruments has played a role in much of the innovation in western music?
(A) string
(B) percussion
(C) woodwind
(D) brass

6. The word "thereby" in line 20 is closest in meaning to
(A) in return for
(B) in spite of
(C) by the way
(D) by that means

7. According to the passage , Krzysztof Penderecki is known for which of the following practices?

(A) Using tones that are clumped together
(B) Combining traditional and nontradinonal instruments
(C) Seating musicians in unusual areas of an auditorium
(D) Playing Western music for non-Western audiences

8. According to the passage , which of the following would be considered traditional elements of Western music?
(A) microtones
(B) tom-toms and bongos
(C) pianos
(D) hisses

9. In paragraph 3, the author mentions diagrams as an example of a new way to
(A) chart the history of innovation in musical notation
(B) explain the logic of standard musical notation
(C) design and develop electronic instruments
(D) indicate how particular sounds should be produced

PASSAGE 55

In 1903 the members of the governing board of the University of Washington, in Seattle, engaged a firm of landscape architects, specialists in the design of outdoor environment — Olmsted Brothers of Brookline, Massachusetts — to advise them on an appropriate layout for the university grounds. The plan impressed the university officials, and in time many of its recommendations were implemented. City officials in Seattle, the largest city in the northwestern United States, were also impressed, for they employed the same organization to study Seattle's public park needs. John Olmsted did the investigation and subsequent report on Seattle's parks. He and his brothers believed that parks should be adapted to the local topography, utilize the area's trees and shrubs, and be available to the entire community. They especially emphasized the need for natural, serene settings where hurried urban dwellers could periodically escape from the city. The essence of the Olmsted park plan was to develop a continuous driveway, twenty miles long, that would tie together a whole series of parks, playgrounds, and parkways. There would be local parks and squares, too, but all of this was meant to supplement the major driveway, which was to remain the unifying factor for the entire system.

In November of 1903 the city council of Seattle adopted the Olmsted Report, and it automatically became the master plan for the city's park system. Prior to this report, Seattle's park development was very limited and funding meager. All this changed after the report. Between 1907 and 1913, city voters approved special funding measures amounting to $4,000,000. With such unparalleled sums at their disposal, with the Olmsted guidelines to follow, and with the added incentive of wanting to have the city at its best for the Alaska-Yukon-Pacific Exposition of 1909, the Parks Board bought aggressively. By 1913 Seattle had 25 parks amounting to 1,400 acres, as well as 400 acres in playgrounds, pathways, boulevards, and triangles. More lands would be added in the future, but for all practical purposes it was the great land surge of 1907-1913 that

established Seattle's park system.

1. What does the passage mainly discuss?

(A) The planned development of Seattle's public park system

(B) The organization of the Seattle city government

(C) The history of the Olmsted Brothers architectural firm

(D) The design and building of the University of Washington campus

2. The word "engaged" in line 2 is closest in meaning to

(A) trained

(B) hired

(C) described

(D) evaluated

3. The word "subsequent" in line 8 is closest in meaning to

(A) complicated

(B) alternate

(C) later

(D) detailed

4. Which of the following statements about parks does NOT reflect the views of the Olmsted Brothers firm?

(A) They should be planted with trees that grow locally.

(B) They should provide a quiet, restful environment.

(C) They should be protected by limiting the number of visitors from the community.

(D) They should be designed to conform to the topography of the area.

5. Why does the author mention "local parks and squares" in lines 14 when talking about the Olmsted plan?

(A) To emphasize the difficulties facing adoption of the plan

(B) To illustrate the comprehensive nature of the plan

(C) To demonstrate an omission in the plan

(D) To describe Seattle's landscape prior to implementation of the plan

6. Which of the following can be inferred from the passage about how citizens of Seattle received the Olmsted Report?

(A) They were hostile to the report's conclusions.

(B) They ignored the Olmsted's findings.

(C) They supported the Olmsted's plans.

(D) They favored the city council's seeking advice from another firm.

7. According to the passage , when was the Olmsted Report officially accepted as the master plan for the Seattle public park system?

(A) 1903

(B) 1907

(C) 1909
(D) 1913

8. The word "sums" in line 20 is closest in meaning to
(A) problems
(B) amounts
(C) services
(D) debts

9. According to the passage , which of the following was most directly influenced by the Alaska-Yukon- Pacific Exposition?
(A) The University of Washington
(B) Brookline, Massachusetts
(C) The mayor of Seattle
(D) The Seattle Parks Board

PASSAGE 56

The term "folk song" has been current for over a hundred years, but there is still a good deal of disagreement as to what it actually means. The definition provided by the International Folk Music Council states that folk music is the music of ordinary people, which is passed on from person to person by being listened to rather than learned from the printed page. Other factors that help shape a folk song include: continuity (many performances over a number of years); variation (changes in words and melodies either through artistic interpretation or failure of memory); and selection (the acceptance of a song by the community in which it evolves).

When songs have been subjected to these processes their origin is usually impossible to trace. For instance, if a farm laborer were to make up a song and sing it to a-couple of friends who like it and memorize it, possibly when the friends come to sing it themselves one of them might forget some of the words and make up new ones to fill the gap, while the other, perhaps more artistic, might add a few decorative touches to the tune and improve a couple of lines of text. If this happened a few times there would be many different versions, the song's original composer would be forgotten, and the song would become common property. This constant reshaping and re-creation is the essence of folk music. Consequently, modem popular songs and other published music, even though widely sung by people who are not professional musicians, are not considered folk music. The music and words have been set by a printed or recorded source, limiting scope for further artistic creation. These songs' origins cannot be disguised and therefore they belong primarily to the composer and not to a community.

The ideal situation for the creation of folk music is an isolated rural community. In such a setting folk songs and dances have a special purpose at every stage in a person's life, from childhood to death. Epic tales of heroic deeds, seasonal songs relating to calendar events, and occupational songs are also likely to be sung.

1. What does the passage mainly discuss?
(A) Themes commonly found in folk music
(B) Elements that define folk music

(C) Influences of folk music on popular music
(D) The standards of the International Folk Music Council

2. Which of the following statements about the term "folk song" is supported by the passage ?
(A) It has been used for several centuries.
(B) The International Folk Music Council invented it.
(C) It is considered to be out-of-date.
(D) There is disagreement about its meaning.

3. The word "it" in line 8 refers to
(A) community
(B) song
(C) acceptance
(D) memory

4. Which of the following is NOT mentioned in the passage as a characteristic of the typical folk song?
(A) It is constantly changing over time.
(B) It is passed on to other people by being performed.
(C) It contains complex musical structures.
(D) It appeals to many people.

5. The word "subjected" in line 9 is closest in meaning to
(A) reduced
(B) modified
(C) exposed
(D) imitated

6. The author mentions the farm laborer and his friends (lines 10-14) in order to do which of the following?
(A) Explain how a folk song evolves over time
(B) Illustrate the importance of music to rural workers
(C) Show how subject matter is selected for a folk song
(D) Demonstrate how a community, chooses a folk song

7. According to the passage , why would the original composers of folk songs be forgotten?
(A) Audiences prefer songs composed by professional musicians.
(B) Singers dislike the decorative touches in folk song tunes.
(C) Numerous variations of folk songs come to exist at the same time.
(D) Folk songs are not considered an important form of music.

8. The word "essence" in line 16 is closest in meaning to
(A) basic nature
(B) growing importance

(C) full extent
(D) first phase

9. The author mentions that published music is not considered to be folk music because
(A) the original composer can be easily identified
(B) the songs attract only the young people in a community
(C) the songs are generally performed by professional singers
(D) the composers write the music in rural communities

PASSAGE 57

Often enough the craft worker's place of employment in ancient Greece was set in rural isolation. Potter, for instance, found it convenient to locate their workshops near their source of clay, regardless of its relation to the center of settlement. At Corinth and Athens, however, two of the best-known potters' quarters were situated on the cities' outskirts, and potters and makers of terra-cotta figurines were also established well within the city of Athens itself. The techniques of pottery manufacture had evolved well before the Greek period, but marked stylistic developments occurred in shape and in decoration, for example, in the interplay of black and other glazes with the red surface of the fired pot. Athenian black-figure and red-figure decoration, which emphasized human figures rather than animal images, was adopted between 630 and 530 B.C.; its distinctive color and luster were the result of the skillful adjustments of the kiln's temperature during an extended three-stage period if firing the clayware. Whether it was the potters or the vase-painters who initiated changes in firing is unclear, the functions of making and decorating were usually divided between them, but neither group can have been so specialized that they did not share in the concerns of the other.

The broad utility of terra-cotta was such that workers in clay could generally afford to confine themselves to either decorated ware and housewares like cooking pots and storage jars or building materials like roof tiles and drainpipes. Some sixth- and fifth-century B.C. Athenian pottery establishments are known to have concentrated on a limited range of fine ware, but a rural pottery establishment on the island of Thasos produced many types of pottery and roof tiles too, presumably to meet local demand. Molds were used to create particular effects for some products, such as relief-decorated vessels and figurines; for other products such as roof tiles, which were in some quantity, they were used to facilitate mass production. There were also a number of poor-quality figurines and painted pots produced in quantity by easy, inexpensive means — as numerous featureless statuettes and unattractive cases testify.

1. The passage mainly discusses ancient Greek pottery and its
(A) production techniques
(B) similarity to other crafts
(C) unusual materials
(D) resemblance to earlier pottery

2. The phrase "regardless of" in line 3 is closest in meaning to
(A) as a result of

(B) no matter what
(C) proud of
(D) according to

3. It can be inferred from the passage that most pottery establishments in ancient Greece were situated
(A) in city centers
(B) on the outskirts of cities
(C) where clay could be found
(D) near other potters' workshops

4. The word "marked" in line 7 is closest in meaning to
(A) original
(B) attractive
(C) noticeable
(D) patterned
5. The word "confine" in line 17 is closest in meaning to
(A) adapt
(B) train
(C) restrict
(D) organize

6. It can be inferred from the passage that terra-cotta had which of the following advantages
(A) It did not break during the firing process.
(B) It was less expensive than other available materials.
(C) Its surface had a lasting shine.
(D) It could be used for many purposes.

7. The word "presumably" in line 21 is closest in meaning to
(A) frequently
(B) practically
(C) preferably
(D) probably

8. The word "they" in line 24 refers to
(A) molds
(B) particular effects
(C) products
(D) vessels and figurines

9. According to the passage , all of the following are true of ancient Greek potters and vase painters EXCEPT:
(A) Their functions were so specialized that they lacked common concerns.
(B) They sometimes produced inferior ware.

(C) They produced pieces that had unusual color and shine.
(D) They decorated many of their works with human images.

PASSAGE 58

Hunting is at best a precarious way of procuring food, even when the diet is supplemented with seeds and fruits. Not long after the last Ice Age, around 7,000 B.C. (during the Neolithic period), some hunters and gatherers began to rely chiefly on agriculture for their sustenance. Others continued the old pastoral and nomadic ways. Indeed, agriculture itself evolved over the course of time, and Neolithic peoples had long known how to grow crops. The real transformation of human life occurred when huge numbers of people began to rely primarily and permanently on the grain they grew and the animals they domesticated.

Agriculture made possible a more stable and secure life. With it Neolithic peoples flourished, fashioning an energetic, creative era. They were responsible for many fundamental inventions and innovations that the modern world takes for granted. First, obviously, is systematic agriculture — that is, the reliance of Neolithic peoples on agriculture as their primary, not merely subsidiary, source of food.

Thus they developed the primary economic activity of the entire ancient world and the basis of all modern life. With the settled routine of Neolithic farmers came the evolution of towns and eventually cities. Neolithic farmers usually raised more food than they could consume, and their surpluses permitted larger, healthier populations. Population growth in turn created an even greater reliance on settled farming, as only systematic agriculture could sustain the increased numbers of people. Since surpluses of food could also be bartered for other commodities, the Neolithic era witnessed the beginnings of large-scale exchange of goods. In time the increasing complexity of Neolithic societies led to the development of writing, prompted by the need to keep records and later by the urge to chronicle experiences, learning, and beliefs.

The transition to settled life also had a profound impact on the family. The shared needs and pressures that encourage extended-family ties are less prominent in settled than in nomadic societies. Bonds to the extended family weakened. In towns and cities, the nuclear family was more dependent on its immediate neighbors than on kinfolk.

1. What does the passage mainly discuss?
(A) Why many human societies are dependent on agriculture
(B) the changes agriculture brought to human life
(C) How Neolithic peoples discovered agriculture
(D) Why the first agricultural societies failed

2. The word "precarious" in line 1 is closest in meaning to
(A) uncertain
(B) humble
(C) worthy
(D) unusual

3. The author mentions "seeds and fruits" in line 2 as examples of

(A) the first crops cultivated by early agricultural societies
(B) foods eaten by hunters and gatherers as a secondary food source
(C) types of food that hunters and gatherers lacked in their diets
(D) the most common foods cultivated by early agricultural societies

4. The word "settled" in line 15 is closest in meaning to
(A) advanced
(B) original
(C) involved
(D) stable

5. According to the passage , agricultural societies produced larger human populations because agriculture
(A) created more varieties of food
(B) created food surpluses
(C) resulted in increases in leisure time
(D) encouraged bartering

6. According to the passage , all of the following led to the development of writing EXCEPT the
(A) need to keep records
(B) desire to write down beliefs
(C) extraction of ink from plants
(D) growth of social complexity

7. The word "chronicle" in line 23 is closest in meaning to
(A) repeat
(B) exchange
(C) understand
(D) describe

8. According to the passage , how did the shift to agricultural societies impact people's family relationships?
(A) The extended family became less important.
(B) Immediate neighbors often became family members.
(C) The nuclear family became self-sufficient.
(D) Family members began to wok together to raise food.

9. The author mentions all of the following as results of the shift to agricultural societies EXCEPT
(A) an increase in invention and innovation
(B) emergence of towns and cities
(C) development of a system of trade
(D) a decrease in warfare

10. Which of the following is true about the human diet prior to the Neolithic period?
(A) It consisted mainly of agricultural products

(B) It varied according to family size.
(C) It was based on hunting and gathering.
(D) It was transformed when large numbers of people no longer depended on the grain they grew themselves.

PASSAGE 59
(20)

The first birds appeared during late Jurassic times. These birds are known from four very good skeletons, two incomplete skeletons, and an isolated feather, all from the Solnhofen limestone of Bavaria, Germany. This fine-grained rock, which is extensively quarried for lithographic stone, was evidently deposited in a shallow coral lagoon of a tropical sea, and flying vertebrates occasionally fell into the water and were buried by the fine limy mud, to be preserved with remarkable detail. In this way, the late Jurassic bird skeletons, which have been named Archaeopteryx, were fossilized. And not only were the bones preserved in these skeletons, but also were imprints of the feathers. If the indications of feathers had not been preserved in association with Archaeopteryx, it is likely that these fossils would have been classified among the dinosaurs, for they show numerous theropod characteristics. Archaeopteryx were animals about the size of a crow, with an archeosaurian type of skull, a long neck, a compact body balanced on a pair of strong hind limbs, and a long tail. The forelimbs were enlarged and obviously functioned as wings.

Modern birds, who are the descendants of these early birds, are highly organized animals, with a constant body temperature and a very high rate of metabolism. In addition, they are remarkable for having evolved extraordinarily complex behavior patterns such as those of nesting and song, and the habit among many species of making long migrations from one continent to another and back each year.

Most birds also have very strong legs, which allow them to run or walk on the ground as well as to fly in the air. Indeed, some of the waterbirds, such as ducks and geese, have the distinction of being able to move around proficiently in the water, on land, and in the air, a range in natural locomotor ability that has never been attained by any other vertebrate. 1. According to the author, all of the following evidence relating to the first birds was found EXCEPT
(A) nesting materials
(B) four skeletons in good condition
(C) two fragmented skeletons
(D) a single feather

2. The word "preserved" in line 8 is closest in meaning to
(A) confused with others
(B) gradually weakened
(C) protected from destruction
(D) lost permanently

3. It can be inferred from the passage that the Archaeopteryx were classified as birds on the basis of

(A) imprints of bones
(B) imprints of feathers
(C) the neck structure
(D) skeletons

4. The word "they" in line 10 refers to
(A) indications
(B) fossils
(C) dinosaurs
(D) characteristics

5. Why does the author mention "a crow" in line 11?
(A) to indicate the size of Archaeopteryx
(B) To specify the age of the Archaeopteryx fossils
(C) To explain the evolutionary history of Archaeopteryx
(D) To demonstrate the superiority of the theropod to Archaeopteryx

6. It can be inferred from the passage that theropods were
(A) dinosaurs
(B) birds
(C) Archaeopteryx
(D) crows

7. The word "constant" in line 16 is closest in meaning to
(A) comfortable
(B) combined
(C) consistent
(D) complementary

8. The author mentions all of the following as examples of complex behavior patterns evolved by birds EXCEPT
(A) migrating
(B) nesting
(C) singing
(D) running

9. The word "attained" in line 23 is closest in meaning to
(A) required
(B) achieved
(C) observed
(D) merited

PASSAGE 60

By far the most important United States export product in the eighteenth and nineteenth centuries was cotton, favored by the European textile industry over flax or wool because it was easy to process and soft to tile touch. Mechanization of spinning and weaving allowed significant centralization and expansion in the textile industry during this period, and at the same time the demand for cotton increased dramatically. American producers were able to meet this demand largely because of tile invention of the cotton gin by Eli Whitney in 1793. Cotton could be grown throughout the South, but separating the fiber — or lint — from the seed was a laborious process. Sea island cotton was relatively easy to process by hand, because its fibers were long and seeds were concentrated at the base of the flower, but it demanded a long growing season, available only along the nation's eastern seacoast. Short-staple cotton required a much shorter growing season, but the shortness of the fibers and their mixture with seeds meant that a worker could hand-process only about one pound per day. Whitney's gin was a hand-powered machine with revolving drums and metal teeth to pull cotton fibers away from seeds. Using the gin, a worker could produce up to 50 pounds of lint a day. The later development of larger gins, powered by horses, water, or steam, multiplied productivity further.

The interaction of improved processing and high demand led to the rapid spread of the cultivation of cotton and to a surge in production. It became the main American export, dwarfing all others. In 1802, cotton composed 14 percent of total American exports by value. Cotton had a 36 percent share by 1810 and over a 50 percent share in 1830. In 1860, 61 percent of the value of American exports was represented by cotton.

In contrast, wheat and wheat flour composed only 6 percent of the value of American exports in that year. Clearly, cotton was king in the trade of the young republic. The growing market for cotton and other American agricultural products led to an unprecedented expansion of agricultural settlement, mostly in the eastern half of the United States — west of the Appalachian Mountains and east of the Mississippi River.

1. The main point of the passage is that the eighteenth and nineteenth centuries were a time when
(A) the European textile industry increased its demand for American export products
(B) mechanization of spinning and weaving dramatically changed the textile industry
(C) cotton became a profitable crop but was still time-consuming to process
(D) cotton became the most important American export product

2. The word "favored" in line 2 is closest in meaning to
(A) preferred
(B) recommended
(C) imported
(D) included

3. All of the following are mentioned in the passage as reasons for the increased demand for cotton EXCEPT
(A) cotton's softness
(B) cotton's ease of processing
(C) a shortage of flax and wool
(D) the growth that occurred in the textile industry.

4. The word "laborious" in line 8 is closest in meaning to
(A) unfamiliar
(B) primitive
(C) skilled
(D) difficult

5. According to the passage , one advantage of Sea island cotton was its
(A) abundance of seeds
(B) long fibers
(C) long growing season
(D) adaptability to different climates

6. Which of the following can be inferred from the passage about cotton production in the United States after the introduction of Whitney's cotton gin?
(A) More cotton came from Sea island cotton plants than before.
(B) More cotton came from short-staple cotton plants than before.
(C) Most cotton produced was sold domestically.
(D) Most cotton produced was exported to England.

7. The word "surge" in line 19 is closest in meaning to
(A) sharp increase
(B) sudden stop
(C) important change
(D) excess amount

8. The author mentions "wheat and wheat flour" in line 23 in order to
(A) show that Americans exported more agricultural products than they imported.
(B) show the increase in the amount of wheat products exported.
(C) demonstrate the importance of cotton among American export products.
(D) demonstrate that wheat farming was becoming more profitable.

9. The word "unprecedented" in line 26 is closest in meaning to
(A) slow
(B) profitable
(C) not seen before
(D) never explained

10. According to the passage , the Mississippi River was
(A) one of the boundaries of a region where new agricultural settlement took place
(B) a major source of water for agricultural crops
(C) the primary route by which agricultural crops were transported
(D) a main source of power for most agricultural machinery
PASSAGE 61

(25)

From their inception, most rural neighborhoods in colonial North America included at least one carpenter, joiner, sawyer, and cooper in woodworking; a weaver and a tailor for clothing production; a tanner, currier, and cordwainer (shoemaker) for fabricating leather objects; and a blacksmith for metalwork. Where stone was the local building material, a mason was sure to appear on the list of people who paid taxes. With only an apprentice as an assistant, the rural artisan provided the neighborhood with common goods from furniture to shoes to farm equipment in exchange for cash or for "goods in kind" from the customer's field, pasture, or dairy. Sometimes artisans transformed material provided by the customer; wove cloth of yarn spun at the farm from the wool of the family sheep; made chairs or tables from wood cut in the customer's own woodlot; produced shoes or leather breeches from cow, deer, or sheepskin tanned on the farm.

Like their farming neighbors, rural artisans were part of an economy scene, by one historian, as "an orchestra conducted by nature." Some tasks could not be done in the winter, other had to be put off during harvest time, and still others waited on raw materials that were only produced seasonally. As the days grew shorter, shop hours kept pace, since few artisans could afford enough artificial light to continue work when the Sun went down. To the best of their ability, colonial artisans tried to keep their shops as efficient as possible and to regularize their schedules and methods of production for the best return on their investment in time, tools, and materials. While it is pleasant to imagine a woodworker, for example, carefully matching lumber, joining a chest together without resort to nails or glue, and applying all thought and energy to carving beautiful designs on the finished piece, the time required was not justified unless the customer was willing to pay extra for the quality — and few in rural areas were. Artisans, therefore, often found it necessary to employ as many shortcuts and economics as possible while still producing satisfactory products.

1. What aspect of rural colonial North America does the passage mainly discuss?
(A) Farming practices
(B) The work of artisans
(C) The character of rural neighborhoods
(D) Types of furniture that were popular

2. The word "inception" in line 1 is closest in meaning to
(A) investigation
(B) location
(C) beginning
(D) records

3. The word "fabricating" in line 3 is closest in meaning to
(A) constructing
(B) altering
(C) selecting
(D) demonstrating

4. It can be inferred from the passage that the use of artificial light in colonial times was

(A) especially helpful to woodworkers
(B) popular in rural areas
(C) continuous in winter
(D) expensive

5. Why did colonial artisans want to "regularize their schedules and methods" (line 18)?
(A) to enable them to produce high quality products
(B) to enable them to duplicate an item many times
(C) to impress their customers
(D) to keep expenses low

6. The phrase "resort to" in line 21 is closest in meaning to
(A) protecting with
(B) moving toward
(C) manufacturing
(D) using

7. The word "few' in lines 23 refers to
(A) woodworkers
(B) finished pieces
(C) customers
(D) chests

8. It can be inferred that the artisans referred to in the passage usually produced products that were
(A) simple
(B) delicate
(C) beautifully decorated
(D) exceptionally long-lasting

PASSAGE 62

Molting is one of the most involved processes of a bird's annual life cycle. Notwithstanding preening and constant care, the marvelously intricate structure of a bird's feather inevitably wears out. All adult birds molt their feathers at least once a year, and upon close observation, one can recognize the frayed, ragged appearance of feathers that are nearing the end of their useful life. Two distinct processes are involved in molting. The first step is when the old, worn feather is dropped, or shed. The second is when a new feather grows in its place. When each feather has been shed and replaced, then the molt can be said to be complete. This, however, is an abstraction that often does not happen: incomplete, overlapping, and arrested molts are quite common.

Molt requires that a bird find and process enough protein to rebuild approximately one-third of its body weight. It is not surprising that a bird in heavy molt often seems listless and unwell. But far from being random, molt is controlled by strong evolutionary forces that have established an optimal time and duration. Generally, molt occurs at the time of least stress on the bird. Many

songbirds, for instance, molt in late summer, when the hard work of breeding is done but the weather is still warm and food still plentiful. This is why the woods in late summer often seem so quiet, when compared with the exuberant choruses of spring.

Molt of the flight feathers is the most highly organized part of the process. Some species, for example, begin by dropping the outermost primary feathers on each side (to retain balance in the air) and wait until the replacement feathers are about one-third grown before shedding the next outermost, and so on. Others always start with the innermost primary feathers and work outward. Yet other species begin in the middle and work outward on both sides. Most ducks shed their wing feathers at once, and remain flightless for two or three weeks while the replacement feathers grow.

1. The passage mainly discusses how
(A) birds prepare for breeding
(B) bird feathers differ from species
(C) birds shed and replace their feathers
(D) birds are affected by seasonal changes

2. The word "Notwithstanding" in line 2 is closest in meaning to
(A) despite
(B) because of
(C) instead of
(D) regarding

3. The word "intricate" in line 2 is closest in meaning to
(A) regular
(B) complex
(C) interesting
(D) important

4. The word "random" in line 12 is closest in meaning to
(A) unfortunate
(B) unusual
(C) unobservable
(D) unpredictable

5. The word "optimal" in line 13 is closest in meaning to
(A) slow
(B) frequent
(C) best
(D) early

6. Which of the following is NOT mentioned as a reason that songbirds molt in the late summer?
(A) Fewer predators are in the woods.
(B) The weathers are still warm.
(C) The songbirds have finished breeding.
(D) Food is still available.

7. Some birds that are molting maintain balance during flight by
(A) constantly preening and caring for their remaining feathers
(B) dropping flight feathers on both sides at the same time
(C) adjusting the angle of their flight to compensate for lost feathers
(D) only losing one-third of their feathers

8. The word "Others" in line 21 refers to
(A) ducks
(B) sides
(C) species
(D) flight feathers

9. The author discusses ducks in order to provide an example of birds that
(A) grow replacement feathers that are very long
(B) shed all their wing feathers at one time
(C) keep their innermost feathers
(D) shed their outermost feathers first

10. It can be inferred from the discussion about ducks that the molting of their flight feathers takes
(A) a year
(B) a season
(C) several months
(D) a few weeks

PASSAGE 63

The most thoroughly studied cases of deception strategies employed by ground-nesting birds involve plovers, small birds that typically nest on beaches or in open fields, their nests merely scrapes in the sand or earth. Plovers also have an effective repertoire of tricks for distracting potential nest predators from their exposed and defenseless eggs or chicks.

The ever-watchful plover can detect a possible threat at a considerable distance. When she does, the nesting bird moves inconspicuously off the nest to a spot well away from eggs or chicks. At this point she may use one of several ploys. One technique involves first moving quietly toward an approaching animal and then setting off noisily through the grass or brush in a low, crouching run away from the nest, while emitting rodent like squeaks. The effect mimics a scurrying mouse or vole, and the behavior rivets the attention of the type of predators that would also be interested in eggs and chicks.

Another deception begins with quiet movement to an exposed and visible location well away from the nest. Once there, the bird pretends to incubate a brood. When the predator approaches, the parent flees, leaving the false nest to be searched. The direction in which the plover "escapes" is such that if the predator chooses to follow, it will be led still further away from the true nest.

The plover's most famous stratagem is the broken-wing display, actually a continuum of

injury-mimicking behaviors spanning the range from slight disability to near-complete helplessness. One or both wings are held in an abnormal position, suggesting injury. The bird appears to be attempting escape along an irregular route that indicates panic. In the most extreme version of the display, the bird flaps one wing in an apparent attempt to take to the air, flops over helplessly, struggles back to its feet, runs away a short distance, seemingly attempts once more to take off, flops over again as the "useless" wing fails to provide any lift, and so on. Few predators fail to pursue such obviously vulnerable prey. Needless to say, each short run between "flight attempts" is directed away from the nest.

1. What does the passage mainly discuss?
(A) The nest-building techniques of plovers
(B) How predators search for plovers
(C) The strategies used by plovers to deceive predators
(D) Why plovers are vulnerable to predators

2. The word "merely" in fine 3 is closest in meaning to
(A) often
(B) only
(C) usually
(D) at first

3. Which of the following is mentioned in the passage about plovers?
(A) Their eggs and chicks are difficult to find.
(B) They are generally defenseless when away from their nests.
(C) They are slow to react in dangerous situations.
(D) Their nests are on the surface of the ground.

4. The word "emitting" in line 10 is closest in meaning to
(A) bringing
(B) attracting
(C) producing
(D) minimizing

5. In the deception technique described in paragraph 2, the plover tries to
(A) stay close to her nest
(B) attract the predator's attention
(C) warn other plovers of danger
(D) frighten the approaching predator

6. The word "spanning" in line 19 is closest in meaning to
(A) covering
(B) selecting
(C) developing
(D) explaining

7. According to paragraph 4, which of the following aspects of the plover's behavior gives the appearance that it is frightened?
(A) Abnormal body position
(B) Irregular escape route
(C) Unnatural wing movement
(D) Unusual amount of time away from the nest

8. The word "pursue" in line 25 is closest in meaning to
(A) catch
(B) notice
(C) defend
(D) chase

9. According to the passage , a female plover utilizes all of the following deception techniques EXCEPT
(A) appearing to be injured
(B) sounding like another animal
(C) pretending to search for prey
(D) pretending to sit on her eggs

10. Which of the following best describes the organization of the passage ?
(A) A description of the sequence of steps involved in plovers nest building
(B) A generalization about plover behavior followed by specific examples
(C) A comparison and contrast of the nesting behavior of plovers and other ground nesting birds
(D) A cause-and-effect analysis of the relationship between a prey and a predator

PASSAGE 64

What unusual or unique biological trait led to the remarkable diversification and unchallenged success of the ants for ever 50 million years? The answer appears to be that they were the first group of predatory eusocial insects that both lived and foraged primarily in the soil and in rotting vegetation on the ground. Eusocial refers to a form of insect society characterized by specialization of tasks and cooperative care of the young; it is rare among insects. Richly organized colonies of the land made possible by eusociality enjoy several key advantages over solitary individuals.

Under most circumstances groups of workers are better able to forage for food and defend the nest, because they can switch from individual to group response and back again swiftly and according to need. When a food object or nest intruder is too large for one individual to handle, nestmates can be quickly assembled by alarm or recruitment signals. Equally important is the fact that the execution of multiple-step tasks is accomplished in a series-parallel sequence. That is, individual ants can specialize in particular steps, moving from one object (such as a larva to be fed) to another (a second larva to be fed). They do not need to carry each task to completion from start to finish — for example, to check the larva first, then collect the food, then feed the larva. Hence, if each link in the chain has many workers in attendance, a series directed at any particular object is less likely to fail. Moreover, ants specializing in particular labor categories typically constitute a caste specialized by age or body form or both. There has been some documentation of the

superiority in performance and net energetic yield of various castes for their modal tasks, although careful experimental studies are still relatively few.

What makes ants unusual in the company of eusocial insects is the fact that they are the only eusocial predators (predators are animals that capture and feed on other animals) occupying the soil and ground litter. The eusocial termites live in the same places as ants and also have wingless workers, but they feed almost exclusively on dead vegetation.

1. Which of the following questions does the passage primarily answer?
(A) How do individual ants adapt to specialized tasks?
(B) What are the differences between social and solitary insects?
(C) Why are ants predators?
(D) Why have ants been able to thrive for such a long time?

2. The word "unique" in line 1 is closest in meaning to
(A) inherited
(B) habitual
(C) singular
(D) natural

3. The word "rotting" in line 4 is closest in meaning to
(A) decaying
(B) collected
(C) expanding
(D) cultivated

4. The word "key" in line 7 is closest in meaning to
(A) uncommon
(B) important
(C) incidental
(D) temporary

5. According to the passage , one thing eusocial insects can do is rapidly switch from
(A) one type of food consumption to another
(B) one environment to another
(C) a solitary task to a group task
(D) a defensive to an offensive stance

6. The task of feeding larvae is mentioned in the passage to demonstrate
(A) the advantages of specialization
(B) the type of food that larvae are fed
(C) the ways ant colonies train their young for adult tasks
(D) the different stages of ant development

7. The author uses the word "Hence" in line 16 to indicate
(A) a logical conclusion

(B) the next step in a senes of steps
(C) a reason for further study
(D) the relationship among ants

8. All of the following terms art defined in the passage EXCEPT
(A) eusocial (line 3)
(B) series-parallel sequence (line 13)
(C) caste (line 19)
(D) predators (line 23)

9. The word "they" in line 25 refers to
(A) termites
(B) ants
(C) places
(D) predators

10. It can be inferred from the passage that one main difference between termites and ants is that termites
(A) live above ground
(B) are eusocial
(C) protect their nests
(D) eat almost no animal substances

PASSAGE 65

No two comets ever look identical, but they have basic features in common, one of the most obvious of which is a coma. A coma looks like a misty, patch of light with one or more tails often streaming from it in the direction away from the sun.

At the heart of a comet's coma lies a nucleus of solid material, typically no more than 10 kilometers across. The visible coma is a huge cloud of gas and dust that has escaped from the nucleus, which then surrounds like an extended atmosphere. The coma can extend as far as a million kilometers outward from the nucleus. Around the coma there is often an even larger invisible envelope of hydrogen gas.

The most graphic proof that the grand spectacle of a comet develops from a relatively small and inconspicuous chunk of ice and dust was the close-up image obtained in 1986 by the European Giotto probe of the nucleus of Halley's Comet. It turned out to be a bit like a very dark asteroid, measuring 16 by 8 kilometers. Ices have evaporated from its outer layers to leave a crust of nearly black dust all over the surface. Bright jets of gas from evaporating ice burst out on the side facing the Sun, where the surface gets heated up, carrying dust with them. This is how the coma and the tails are created.

Comets grow tails only when they get warm enough for ice and dust to boil off. As a comet's orbit brings it closer to the sun, first the coma grows, then two distinct tails usually form. One, the less common kind, contains electrically charged (i.e., ionized) atoms of gas, which are blown off

directly in the direction away from the Sun by the magnetic field of the solar wind. The other tail is made of neutral dust particles, which get gently pushed back by the pressure of the sunlight itself. Unlike the ion tail, which is straight, the dust tail becomes curved as the particles follow their own orbits around the Sun.

1. The passage focuses on comets primarily in terms of their
(A) orbital patterns
(B) coma and tails
(C) brightness
(D) size

2. The word "identical" in line 1 is closest in meaning to
(A) equally fast
(B) exactly alike
(C) near each other
(D) invisible

3. The word "heart" in line 4 is closest in meaning to
(A) center
(B) edge
(C) tail
(D) beginning

4. Why does the author mention the Giotto probe in paragraph 3?
(A) It had a relatively small and inconspicuous nucleus.
(B) It was very similar to an asteroid.
(C) It was covered with an unusual black dust.
(D) It provided visual evidence of the makeup of a comet's nucleus.

5. It can be inferred from the passage that the nucleus of a comet is made up of
(A) dust and gas
(B) ice and dust
(C) hydrogen gas
(D) electrically charged atoms

6. The word "graphic" in line 9 is closest in meaning to
(A) mathematical
(B) popular
(C) unusual
(D) vivid

7. Which of the following occurred as the ices from Halley's Comet evaporated?
(A) Black dust was left on the comet's surface.
(B) The nucleus of the comet expanded.
(C) The tail of the comet straightened out.

(D) Jets of gas caused the comet to increase its speed.

8. All of the following statements about the tails of comets are true EXCEPT:
(A) They can contain electrically charged or neutral particles.
(B) They can be formed only when there is sufficient heat.
(C) They are formed before the coma expands.
(D) They always point in the direction away from the Sun.

9. The word "distinct" in line 17 is closest in meaning to
(A) visible
(B) gaseous
(C) separate
(D) new

10. Compared to the tail of electrically charged atoms, the tail of neutral dust particles is relatively
(A) long
(B) curved
(C) unpredictable
(D) bright

PASSAGE 66

Long before they can actually speak, babies pay special attention to the speech they hear around them. Within the first month of their lives, babies' responses to the sound of the human voice will be different from their responses to other sorts of auditory stimuli. They will stop crying when they hear a person talking, but not if they hear a bell or the sound of a rattle. At first, the sounds that an infant notices might be only those words that receive the heaviest emphasis and that often occur at the ends of utterances. By the time they are six or seven weeks old, babies can detect the difference between syllables pronounced with rising and falling inflections. Very soon, these differences in adult stress and intonation can influence babies' emotional states and behavior. Long before they develop actual language comprehension, babies can sense when an adult is playful or angry, attempting to initiate or terminate new behavior, and so on, merely on the basis of cues such as the rate, volume, and melody of adult speech.

Adults make it as easy as they can for babies to pick up a language by exaggerating such cues. One researcher observed babies and their mothers in six diverse cultures and found that, in all six languages, the mothers used simplified syntax, short utterances and nonsense sounds, and transformed certain sounds into baby talk. Other investigators have noted that when mothers talk to babies who are only a few months old, they exaggerate the pitch, loudness, and intensity of their words. They also exaggerate their facial expressions, hold vowels longer, and emphasize certain words.

More significant for language development than their response to general intonation is observation that tiny babies can make relatively fine distinctions between speech sounds. In other words, babies enter the world with the ability to make precisely those perceptual discriminations

that are necessary if they are to acquire aural language.

Babies obviously derive pleasure from sound input, too: even as young as nine months they will listen to songs or stories, although the words themselves are beyond their understanding. For babies, language is a sensory-motor delight rather than the route to prosaic meaning that it often is for adults.

1. What does the passage mainly discuss?
(A) How babies differentiate between the sound of the human voice and other sounds
(B) The differences between a baby's and an adult's ability to comprehend language
(C) How babies perceive and respond to the human voice in their earliest stages of language development
(D) The response of babies to sounds other than the human voice

2. Why does the author mention a bell and a rattle in lines 4-5?
(A) To contrast the reactions of babies to human and nonhuman sounds
(B) To give examples of sounds that will cause a baby to cry
(C) To explain how babies distinguish between different nonhuman sounds
(D) To give examples of typical toys that babies do not like

3. Why does the author mention syllables pronounced with rising and falling inflections in lines 7-8?
(A) To demonstrate how difficult it is for babies to interpret emotions
(B) To illustrate that a six-week-old baby can already distinguish some language differences
(C) To provide an example of ways adults speak to babies
(D) To give a reason for babies' difficulty in distinguishing one adult from another

4. The word "diverse" in line 14 is closest in meaning to
(A) surrounding
(B) divided
(C) different
(D) stimulating

5. The word "noted" in line 17 is closest in meaning to
(A) theorized
(B) requested
(C) disagreed
(D) observed

6. The word "They" in line 18 refers to
(A) mothers
(B) investigators
(C) babies
(D) words

7. The passage mentions all of the following as ways adults modify their speech when talking to

babies EXCEPT
(A) giving all words equal emphasis
(B) speaking with shorter sentences
(C) speaking more loudly than normal
(D) using meaningless sounds

8. The word "emphasize" in line 19 is closest in meaning to
(A) stress
(B) repeat
(C) explain
(D) leave out

9. Which of the following can be inferred about the findings described in paragraph 2?
(A) Babies who are exposed to more than one language can speak earlier than babies exposed to a single language.
(B) Mothers from different cultures speak to their babies in similar ways.
(C) Babies ignore facial expressions in comprehending aural language.
(D) The mothers observed by the researchers were consciously teaching their babies to speak.

10. What point does the author make to illustrate that babies are born with the ability to acquire language?
(A) Babies begin to understand words in songs.
(B) Babies exaggerate their own sounds and expressions.
(C) Babies are more sensitive to sounds than are adults.
(D) Babies notice even minor differences between speech sounds.

11. According to the author, why do babies listen to songs and stories, even though they cannot understand them?
(A) They understand the rhythm.
(B) They enjoy the sound.
(C) They can remember them easily.
(D) They focus on the meaning of their parents' words.

PASSAGE 67

Geographers say that what defines a place are four properties: soil, climate, altitude, and aspect, or attitude to the Sun. Florida's ancient scrub demonstrates this principle. Its soil is pure silica, so barren it supports only lichens as ground cover. It does, however, sustain a sand-swimming lizard that cannot live where there is moisture or plant matter the soil. Its climate, despite more than 50 inches of annual rainfall, is blistering desert. The only plant life it can sustain is the xerophytic, the quintessentially dry. Its altitude is a mere couple of hundred feet, but it is high ground on a peninsula elsewhere close to sea level, and its drainage is so critical that a difference of inches in elevation can bring major changes in its plant communities. Its aspect is flat direct, brutal — and subtropical.

Florida's surrounding lushness cannot impinge on its desert scrubbiness. This does not sound like an attractive place. It does not look much like one either: shrubby little oaks, clumps of scraggly bushes prickly pear, thorns, and tangles. "It appears," Said one early naturalist, "to desire to display the result of the misery through which it has passed and is passing". By our narrow standards, scrub is not beautiful; neither does it meet our selfish utilitarian needs. Even the name is an epithet, a synonym for the stunted, the scruffy, the insignificant, what is beautiful about such a place?

The most important remaining patches of scrub lie along the Lake Wales Ridge, a chain of paleoislands running for a hundred miles down the center of Florida, in most places less than ten miles wide. It is relict seashore, tossed up millions of years ago when ocean levels were higher and the rest of the peninsula was submerged. That ancient emergence is precisely what makes Lake Wales Ridge so precious: it has remained unsubmerged, its ecosystems essentially undisturbed since the Miocene era. As a result, it has gathered to itself one of the largest collections of rare organisms in the world. Only about 75 plant species survive there, but at least 30 of these are found nowhere else on Earth.

1. What does the passage mainly discuss?
(A) How geographers define a place
(B) The characteristics of Florida's ancient scrub
(C) An early naturalist's opinion of Florida
(D) The history of the Lake Wales Ridge

2. The author mentions all of the following factors that define a place EXCEPT
(A) aspect
(B) altitude
(C) soil
(D) life-forms

3. It can be inferred from the passage that soil composed of silica
(A) does not hold moisture
(B) is found only in Florida
(C) nourishes many kinds of ground cover
(D) provides food for many kinds of lizards

4. The word "sustain" in line 6 is closets in meaning to
(A) select
(B) strain
(C) support
(D) store

5. The author mentions the prickly pear (line 12) as an example of
(A) valuable fruit-bearing plants of the scrub area
(B) unattractive plant life of the scrub area
(C) a pant discovered by an early naturalist
(D) plant life that is extremely rare

6. The author suggests that human standards of beauty are
(A) tolerant
(B) idealistic
(C) defensible
(D) limited

7. The word "insignificant" in line 16 is closest in meaning to
(A) unimportant
(B) undisturbed
(C) immature
(D) inappropriate

8. According to the passage , why is the Lake Wales Ridge valuable?
(A) It was originally submerged in the ocean.
(B) It is less than ten miles wide.
(C) It is located near the seashore.
(D) It has ecosystems that have long remained unchanged

9. The word "it" in line 21 refer to
(A) Florida
(B) the peninsula
(C) the Lake Wales Ridge
(D) the Miocene era

10. The passage probably continues with a discussion of
(A) ancient scrub found in other areas of the country
(B) geographers who study Florida's scrub
(C) the climate of the Lake Wales Ridge
(D) the unique plants found on the Lake Wales Ridge

PASSAGE 68
(30)

In the North American colonies, red ware, a simple pottery fired at low temperatures, and stone ware, a strong, impervious grey pottery fired at high temperatures, were produced from two different native clays. These kinds of pottery were produced to supplement imported European pottery. When the American Revolution (1775-1783) interrupted the flow of the superior European ware, there was incentive for American potters to replace the imports with comparable domestic goods. Stoneware, which had been simple, utilitarian kitchenware, grew increasingly ornate throughout the nineteenth century, and in addition to the earlier scratched and drawn designs, three-dimensional molded relief decoration became popular. Representational motifs largely replaced the earlier abstract decorations. Birds and flowers were particularly evident, but other subjects — lions, flags, and clipper ships — are found. Some figurines, mainly of dogs and lions,

were made in this medium. Sometimes a name, usually that of the potter, was die-stamped onto a piece.

As more and more large kilns were built to create the high-fired stoneware, experiments revealed that the same clay used to produce low-fired red ware could produce a stronger, paler pottery if fired at a hotter temperature. The result was yellow ware, used largely for serviceable items; but a further development was Rockingham ware — one of the most important American ceramics of the nineteenth century. (The name of the ware was probably derived from its resemblance to English brown-glazed earthenware made in South Yorkshire.) It was created by adding a brown glaze to the fired clay, usually giving the finished product a mottled appearance. Various methods of spattering or sponging the glaze onto the ware account for the extremely wide variations in color and add to the interest of collecting Rockingham. An advanced form of Rockingham was flint enamel, created by dusting metallic powders onto the Rockingham glaze to produce brilliant varicolored streaks.

Articles for nearly every household activity and ornament could be bought in Rockingham ware: dishes and bowls, of course; also bedpans, foot warmers, cuspidors, lamp bases, doorknobs, molds, picture frames, even curtain tiebacks. All these items are highly collectible today and are eagerly sought. A few Rockingham specialties command particular affection among collectors and correspondingly high prices.

1. Why did the potters discussed in the passage change the kind of pottery they made?
A) They discovered a new kind of clay.
B) They were compensation for the loss of an overseas supplier.
C) They studied new techniques in Europe.
D) The pottery they had been producing was not very strong.

2. The word "ornate" in line 7 is closest in meaning to
A) elaborate
B) puzzling
C) durable
D) common

3. The passage suggests that the earliest stoneware
A) was decorated with simple, abstract designs
B) used three-dimensional decorations
C) was valued for its fancy decorations
D) had no decoration

4. How did yellow ware achieve its distinctive color?
A) by sponging on a glaze
B) by dusting on metallic powders
C) by brown-glazing
D) by firing at a high temperature

5. The phrase "derived from" in line 19 is closest in meaning to
A) ruined by

B) warned against
C) based on
D) sold by

6. The word "It" in line 20 refers to
A) red ware
B) yellow ware
C) Rockingham ware
D) English brown-glazed earthenware

7. The word "Various" in line 21 is closest in meaning to
A) complicated
B) accepted
C) careful
D) different

8. The phrase "account for" in line 22 is closest in meaning to
A) explain
B) restrict
C) finance
D) supplement

9. What was special about flint enamel?
A) its even metallic shine
B) its mottled appearance
C) its spattered effect
D) its varicolored streaks

10. Which of the following kinds of Rockingham ware were probably produced in the greatest quantity?
A) picture frames
B) dishes and bowls
C) curtain tiebacks
D) doorknobs

11. The passage would most probably continue with a discussion of
A) what bedpans, foot warmers, and cuspidors were used for
B) well-known, modern-day potters who make Rockingham ware
C) examples of Rockingham ware that collectors especially want
D) pieces of Rockingham ware that are inexpensive in today's market

PASSAGE 69

Newspaper publishers in the United States have long been enthusiastic users and distributors

of weather maps. Although some newspapers that had carried the United States Weather Bureau's national weather map in 1912 dropped it once the novelty had passed, many continued to print the daily weather chart provided by their local forecasting office. In the 1930's, when interest in aviation and progress in air-mass analysis made weather patterns more newsworthy, additional newspapers started or resumed the daily weather map. In 1935, The Associated Press (AP) news service inaugurated its WirePhoto network and offered subscribing newspapers morning and afternoon weather maps redrafted by the AP's Washington, B.C., office from charts provided by the government agency. Another news service, United Press International (UPI), developed a competing Photowire network and also provided timely weather maps for both morning and afternoon newspapers. After the United States government launched a series of weather satellites in 1966, both the AP and UPI offered cloud-cover photos obtained from the Weather Bureau.

In the late 1970's and early 1980's, the weather map became an essential ingredient in the redesign of the American newspaper. News publishers, threatened by increased competition from television for readers' attention, sought to package the news more conveniently and attractively. In 1982, many publishers felt threatened by the new USA Today, a national daily newspaper that used a page-wide, full-color weather map as its key design element. That the weather map in USA Today did not include information about weather fronts and pressures attests to the largely symbolic role it played. Nonetheless, competing local and metropolitan newspapers responded in a variety of ways. Most substituted full-color temperature maps for the standard weather maps, while others dropped the comparatively drab satellite photos or added regional forecast maps with pictorial symbols to indicate rainy, snowy, cloudy, or clear conditions. A few newspapers, notably The New York Times, adopted a highly informative yet less visually prominent weather map that was specially designed to explain an important recent or imminent weather event. Ironically, a newspaper's richest, most instructive weather maps often are comparatively small and inconspicuous.

1. What does the passage mainly discuss?

(A) The differences between government and newspaper weather forecasting in the United States.

(B) The history of publishing weather maps in United States newspapers

(C) A comparison of regional and national weather reporting in the United States.

(D) Information that forms the basis for weather forecasting in the United States

2. The word "resumed" in line 7 is closest in meaning to

(A) began again

(B) held back

(C) thought over

(D) referred to

3. According to the passage , one important reason why newspapers printed daily weather maps during the first half of the twentieth century was

(A) the progress in printing technology

(B) a growing interest in air transportation

(C) a change in atmospheric conditions

(D) the improvement of weather forecasting techniques

4. What regular service did The Associated Press and United Press International begin to offer

subscribing newspapers in the 1930's?
(A) A new system of weather forecasting
(B) An air-mass analysis
(C) Twice daily weather maps
(D) Cloud-cover photographs

5. The phrase "attests to" in line 21 is closest in meaning to
(A) makes up for
(B) combines with
(C) interferes with
(D) gives evidence of

6. The word "others" in line 24 refers to
(A) newspapers
(B) ways
(C) temperature maps
(D) weather maps

7. The word "drab" in line 24 is closest in meaning to
(A) precise
(B) poor
(C) simple
(D) dull

8. In contrast to the weather maps of USA Today, weather maps in The New York Times tended to be
(A) printed in foil color
(B) included for symbolic reasons
(C) easily understood by the readers
(D) filled with detailed information

9. The word "prominent" in line 27 is closest in meaning to
(A) complex
(B) noticeable
(C) appealing
(D) perfect

10. The author uses the term "Ironically" in line 28 to indicate that a weather map's appearance
(A) is not important to newspaper publishers
(B) does not always indicate how much information it provides
(C) reflects how informative a newspaper can be
(D) often can improve newspaper sales

PASSAGE 70

(20)

The origins of nest-building remain obscure, but current observations of nest-building activities provide evidence of their evolution. Clues to this evolutionary process can be found in the activities of play and in the behavior and movements of birds during mating, such as incessant pulling at strips of vegetation or scraping of the soil. During the early days of the reproductive cycle, the birds seem only to play with the building materials. In preparation for mating, they engage in activities that resemble nest-building, and continue these activities throughout and even after the mating cycle. Effective attempts at construction occur only after mating.

Although nest-building is an instinctive ability, there is considerable adaptability in both site selection and use of materials, especially with those species which build quite elaborate constructions. Furthermore, some element of learning is often evident since younger birds do not build as well as their practiced elders. Young ravens, for example, first attempt to build with sticks of quite unsuitable size, while a jackdaw's first nest includes virtually any movable object. The novelist John Steinbeck recorded the contents of a young osprey nest built in his garden, which included three shirts, a bath towel, and one arrow.

Birds also display remarkable behavior in collecting building materials. Crows have been seen to tear off stout green twigs, and sparrowhawks will dive purposefully onto a branch until it snaps and then hang upside down to break it off. Golden eagles, over generations of work, construct enormous nests. One of these, examined after it had been dislodged by high winds, weighed almost two tons and included foundation branches almost two meters long. The carrying capacity of the eagles, however, is only relative to their size and most birds are able to carry an extra load of just over twenty percent of their body weight.

1. The word "obscure" in line 1 is closest in meaning to
(A) interesting
(B) unclear
(C) imperfect
(D) complex

2. According to the passage , which of the following activities is characteristic of the early part of the reproductive cycle of birds?
(A) Selecting a mate
(B) Collecting nest-building materials
(C) Playing with nest-building materials
(D) Building a nest

3. The word "display" in line 17 is closest in meaning to
(A) communicate
(B) imitate
(C) initiate
(D) exhibit

4. The novelist John Steinbeck is mentioned in line 14 because he
(A) conducted a scientific study on the behavior of ospreys
(B) was the first to describe where ospreys built their nests

(C) described the materials ospreys can use to build their nests
(D) compared the size of osprey nests with the nests of other species

5. Which of the following birds are mentioned as those that build nests that include unusual objects?
(A) Ravens
(B) Ospreys
(C) Crows
(D) Sparrowhawks

6. According to the passage , when gathering materials to build their nests, sparrowhawks do which of the following?
(A) Hang upside down
(B) Select only green twigs
(C) Use objects blowing in the wind
(D) Collect more branches than necessary

7. The word "these" in line 20 refers to
(A) golden eagles
(B) generations
(C) winds
(D) nests

8. The word "load" in line 23 is closest in meaning to
(A) weight
(B) number
(C) section
(D) level

9. The author mentions twenty percent in line 23 to indicate that
(A) eagles are twenty percent bigger than most birds
(B) twenty percent of all nests include foundation branches
(C) the nests of eagles are twenty percent of larger than those of other birds
(D) birds can carry twenty percent more of their own weight

PASSAGE 71

Cities develop as a result of functions that they can perform. Some functions result directly from the ingenuity of the citizenry, but most functions result from the needs of the local area and of the surrounding hinterland (the region that supplies goods to the city and to which the city furnishes services and other goods). Geographers often make a distinction between the situation and the site of a city. Situation refers to the general position in relation to the surrounding region, whereas site involves physical characteristics of the specific location. Situation is normally much

more important to the continuing prosperity of a city. If a city is well situated in regard to its hinterland, its development is much more likely to continue. Chicago, for example, possesses an almost unparalleled situation: it is located at the southern end of a huge lake that forces east-west transportation lines to be compressed into its vicinity, and at a meeting of significant land and water transport routes. It also overlooks what is one of the world's finest large farming regions. These factors ensured that Chicago would become a great city regardless of the disadvantageous characteristics of the available site, such as being prone to flooding during thunderstorm activity.

Similarly, it can be argued that much of New York City's importance stems from its early and continuing advantage of situation. Philadelphia and Boston both originated at about the same time as New York and shared New York's location at the western end of one of the world's most important oceanic trade routes, but only New York possesses an easy-access functional connection (the Hudson-Mohawk lowland) to the vast Midwestern hinterland. This account does not alone explain New York's primacy, but it does include several important factors. Among the many aspects of situation that help to explain why some cities grow and others do not, original location on a navigable waterway seems particularly applicable. Of course, such characteristic as slope, drainage, power resources, river crossings, coastal shapes, and other physical characteristics help to determine city location, but such factors are normally more significant in early stages of city development than later.

1. What does the passage mainly discuss?
(A) The development of trade routes through United States cities
(B) Contrasts in settlement patterns in United States
(C) Historical differences among three large United States cities
(D) The importance of geographical situation in the growth of United States cities

2. The word "ingenuity" in line 2. is closest in meaning to
(A) wealth
(B) resourcefulness
(C) traditions
(D) organization

3. The passage suggests that a geographer would consider a city's soil type part of its
(A) hinterland
(B) situation
(C) site
(D) function

4. According to the passage , a city's situation is more important than its site in regard to the city's
(A) long-term growth and prosperity
(B) ability to protect its citizenry
(C) possession of favorable weather conditions
(D) need to import food supplies

5. The author mentions each of the following as an advantage of Chicago's location EXCEPT its
(A) hinterland

(B) nearness to a large lake
(C) position in regard to transport routes
(D) flat terrain

6. The word "characteristics" in line 14 is closest in meaning to
(A) choices
(B) attitudes
(C) qualities
(D) inhabitants

7. The primary purpose of paragraph 1 is to
(A) summarize past research and introduce a new study
(B) describe a historical period
(C) emphasize the advantages of one theory over another
(D) define a term and illustrate it with an example

8. According to the passage , Philadelphia and Boston are similar to New York City in
(A) size of population
(B) age
(C) site
(D) availability of rail transportation

9. The word "functional" in line 20 is closest in meaning to
(A) alternate
(B) unknown
(C) original
(D) usable

10. The word "it" in line 21 refers to
(A) account
(B) primacy
(C) connection
(D) hinterland

11. The word "significant" in line 26 is closest in meaning to
(A) threatening
(B) meaningful
(C) obvious
(D) available

PASSAGE 72
(30)

The Harlem Renaissance, a movement of the 1920's, marked the twentieth century's first period of intense activity by African Americans in the field of literature, art, and music in the

United States. The philosophy of the movement combined realism, ethnic consciousness, and Americanism. Encouraged by the example of certain Americans of European descent such as Thomas Eakins, Robert Henri, and George Luks, who had included persons of African descent in their paintings as serious studies rather than as trivial or sentimental stereotypes, African American artists of this period set about creating a new portrayal of themselves and their lives in the United States. As they began to strive for social and cultural independence. Their attitudes toward themselves changed, and, to some extent, other segments of American society began to change their attitudes toward them. Thus, though the Harlem Renaissance was a short-lived movement, its impact on American art and culture continues to the present.

The district in New York City known as Harlem was the capital of the movement. In 1925 an issue of Survey Graphic magazine devoted exclusively to Harlem and edited by philosopher Alain Locke became the manifesto of the African American artistic movement. Locke strongly suggested that individuals, while accepting their Americanism, take pride in their African ancestral arts and urged artists to look to Africa for substance and inspiration. Far from advocating a withdrawal from American culture, as did some of his contemporaries, Locke recommended a cultural pluralism through which artists could enrich the culture of America. African Americans were urged by Locke to be collaborators and participators with other Americans in art, literature, and music; and at the same time to preserve, enhance, and promote their own cultural heritage.

Artists and intellectuals from many parts of the United States and the Caribbean had been attracted to Harlem by the pulse and beat of its unique and dynamic culture. From this unity created by the convergence of artists from various social and geographical backgrounds came a new spirit, which, particularly in densely populated Harlem, was to result in greater group awareness and self-determination. African American graphic artists took their place beside the poets and writers of the Harlem Renaissance and carried on efforts to increase and promote the visual arts.

1. What does the passage mainly discuss?

(A) African American paintings in the 1920's

(B) An arts movement of the 1920's

(C) The influence of Alain Locke on African American art

(D) Some ways in which African culture inspired American literature, art and music

2. According to the passage , Tomas Eakins, Robert Henri, and George Luks were important because of

(A) the philosophical contributions they made to the Harlem Renaissance

(B) their development of a new style of African American art

(C) they way in which they depicted African Americans in their paintings

(D) their independence from European artistic traditions

3. The word "them" in line 11 refers to

(A) Americans of European descent

(B) paintings

(C) African American artists

(D) attitudes

4. According to the passage , African American artists of the 1920's differed from earlier African American artists in terms of their feelings about
(A) themselves
(B) other artists
(C) their impact on American art
(D) stereotypes

5. The word "urged" in line 17 is closest in meaning to
(A) prepared
(B) defined
(C) permitted
(D) encouraged

6. Alain Locke believed all of the following to be important to the African American artistic movement EXCEPT
(A) pride in African art
(B) cultural pluralism
(C) collaboration with other artists
(D) withdrawal from American culture

7. In mentioning "the pulse and beat" (line 25) of Harlem during the 1920's, the author is characterizing the district as one that
(A) depended greatly on its interaction with other parts of the city
(B) grew economically in a short period of time
(C) was an exciting place to be
(D) was in danger of losing population

8. The word "convergence" in line 26 is closest in meaning to
(A) gathering
(B) promotion
(C) expression
(D) influence

9. According to the passage , all of the following were true of Harlem in the 1920's EXCEPT:
(A) Some Caribbean artists and intellectuals lived there.
(B) It attracted people from various regions of United States.
(C) It was one of the most expensive neighborhoods in New York City.
(D) It was a unique cultural center.

10. The phrase "carried on" in line 30 is closest in meaning to
(A) continued
(B) praised
(C) transformed
(D) connected

PASSAGE 73

(25)ffeterd "spanning" in line 18d-

The interrelationship of science, technology, and industry is taken for granted today — summed up, not altogether accurately, as "research and development." Yet historically this widespread faith in the economic virtues of science is a relatively recent phenomenon, dating back in the United States about 150 years, and in the Western world as a whole not over 300 years at most. Even in this current era of large scale, intensive research and development, the interrelationships involved in this process are frequently misunderstood. Until the coming of the Industrial Revolution, science and technology evolved for the most part independently of each other. Then as industrialization became increasingly complicated, the craft techniques of preindustrial society gradually gave way to a technology based on the systematic application of scientific knowledge and scientific methods. This changeover started slowly and progressed unevenly. Until late in the nineteenth century, only a few industries could use scientific techniques or cared about using them. The list expanded noticeably after 1870, but even then much of what passed for the application of science was "engineering science" rather than basic science.

Nevertheless, by the middle of the nineteenth century, the rapid expansion of scientific knowledge and of public awareness — if not understanding — of it had created a belief that the advance of science would in some unspecified manner automatically generate economic benefits. The widespread and usually uncritical acceptance of this thesis led in turn to the assumption that the application of science to industrial purposes was a linear process, starting with fundamental science, then proceeding to applied science or technology, and through them to industrial use. This is probably the most common pattern, but it is not invariable. New areas of science have been opened up and fundamental discoveries made as a result of attempts to solve a specific technical or economic problem. Conversely, scientists who mainly do basic research also serve as consultants on projects that apply research in practical ways.

In sum, the science-technology-industry relationship may flow in several different ways, and the particular channel it will follow depends on the individual situation. It may at times even be multidirectional.

1. What is the author's main purpose in the passage ?

(A) To show how technology influenced basic science

(B) To describe the scientific base of nineteenth-century American industries

(C) To correct misunderstandings about the connections between science, technology, and industry

(D) To argue that basic science has no practical application

2. The word "altogether" in line 2 is closest in meaning to

(A) completely

(B) realistically

(C) individually

(D) understandably

3. The word "intensive" in line 5 is closest in meaning to

(A) decreased

(B) concentrated
(C) creative
(D) advanced
4. The "list" mentioned in line 13 refers to
(A) types of scientific knowledge
(B) changes brought by technology
(C) industries that used scientific techniques
(D) applications of engineering science

5. The understanding of research and development in the late nineteenth century is based on which of the following?
(A) Engineering science is not very important.
(B) Fundamental science naturally leads to economic benefits.
(C) The relationship between research and development should be criticized.
(D) Industrial needs should determine what areas fundamental science focuses on.

6. The word "it" in line 16 refers to
(A) understanding
(B) public awareness
(C) scientific knowledge
(D) expansion

7. The word "assumption" in line 19 is closest in meaning to
(A) regulation
(B) belief
(C) contract
(D) confusion

8. Why does the author mention "consultants" in line 25?
(A) To show how new areas of science have given rise to new professions
(B) To distinguish between scientists who work in industry and those who do not
(C) To explain the ways in which scientists find financial support for their work
(D) To show how scientists who work in basic research contribute to applied science

9. Which of the following statements does the passage support?
(A) The development of science and of industry is now interdependent.
(B) Basic scientific research cannot generate practical applications.
(C) Industries should spend less money on research and development.
(D) Science and technology are becoming more separate.

PASSAGE 74

Glaciers are large masses of ice on land that show evidence of past or present movement. They grow by the gradual transformation of snow into glacier ice.

A fresh snowfall is a fluffy mass of loosely packed snowflakes, small delicate ice crystals grown in the atmosphere. As the snow ages on the ground for weeks or months, the crystals shrink and become more compact, and the whole mass becomes squeezed together into a more dense form, granular snow. As new snow falls and buries the older snow, the layers of granular snow further compact to form firm, a much denser kind of snow, usually a year or more old, which has little pore space. Further burial and slow cementation — a process by which crystals become bound together in a mosaic of intergrown ice crystals — finally produce solid glacial ice. In this process of recrystallization, the growth of new crystals at the expense of old ones, the percentage of air is reduced from about 90 percent for snowflakes to less than 20 percent for glacier ice. The whole process may take as little as a few years, but more likely ten or twenty years or longer. The snow is usually many meters deep by the time the lower layers are converted into ice.

In cold glaciers those formed in the coldest regions of the Earth, the entire mass of ice is at temperatures below the melting point and no free water exists. In temperate glaciers, the ice is at the melting point at every pressure level within the glacier, and free water is present as small drops or as larger accumulations in tunnels within or beneath the ice.

Formation of a glacier is complete when ice has accumulated to a thickness (and thus weight) sufficient to make it move slowly under pressure, in much the same way that solid rock deep within the Earth can change shape without breaking. Once that point is reached, the ice flows downhill, either as a tongue of ice filling a valley or as thick ice cap that flows out in directions from the highest central area where the most snow accumulates. The trip down leads to the eventual melting of ice.

1. Which of the following does the passage mainly discuss?
(A) The effect of glaciers on climate
(B) Damage from glaciers
(C) Glacier formation
(D) The location of glaciers

2. Which of the following will cause density within the glacier to increase?
(A) Increased water and air content
(B) Pressure from the weight of new snow
(C) Long periods of darkness and temperature variations
(D) Movement of the glacier

3. The word "bound" in line 9 is closest in meaning to
(A) covered
(B) chosen
(C) planned
(D) held

4. Which of the following will be lost is a glacier forms?
(A) Air
(B) Pressure
(C) Weight
(D) Rocks

5. According to the passage , which of the following is the LEAST amount of time necessary for glacial ice to form?
(A) several months
(B) several years
(C) at least fifty years
(D) a century

6. The word "converted" in line 15 is closest in meaning to
(A) changed
(B) delayed
(C) promoted
(D) dissolved

7. What is the purpose of the material in paragraph three?
(A) To define two types of glaciers
(B) To contrast glacier ice with non-glacier ice
(C) To present theories of glacier formation
(D) To discuss the similarities between glacial types

8. In temperate glaciers, where is water found?
(A) Only near the surface
(B) In pools of various depths
(C) In a thin layer below the firm
(D) In tunnels

9. The word "it" in line 21 refers to
(A) formation
(B) ice
(C) thickness
(D) weight

10. It can be inferred from the last paragraph that a glacier
(A) can revert to a fluffy mass
(B) maintains the same shape throughout the glacial process
(C) is too cold to be thoroughly studied
(D) can contribute water to lakes, rivers, or oceans

PASSAGE 75
(30)

Many prehistoric people subsisted as hunters and gatherers. Undoubtedly, game animals, including some very large species, provided major components of human diets. An important controversy centering on the question of human effects on prehistoric wildlife concerns the sudden

disappearance of so many species of large animals at or near the end of the Pleistocene epoch. Most paleontologists suspect that abrupt changes in climate led to the mass extinctions. Others, however, have concluded that prehistoric people drove many of those species to extinction through overhunting. In their "Pleistocene overkill hypothesis," they cite what seems to be a remarkable coincidence between the arrival of prehistoric peoples in North and South America and the time during which mammoths, giant ground sloths, the giant bison, and numerous other large mammals became extinct.

Perhaps the human species was driving others to extinction long before the dawn of history. Hunter-gatherers may have contributed to Pleistocene extinctions in more indirect ways. Besides overhunting, at least three other kinds of effects have been suggested: direct competition, imbalances between competing species of game animals, and early agricultural practices. Direct competition may have brought about the demise of large carnivores such as the saber-toothed cats. These animals simply may have been unable to compete with the increasingly sophisticated hunting skills of Pleistocene people.

Human hunters could have caused imbalances among game animals, leading to the extinctions of species less able to compete. When other predators such as the gray wolf prey upon large mammals, they generally take high proportions of each year's crop of young. Some human hunters, in contrast, tend to take the various age-groups of large animals in proportion to their actual occurrence. If such hunters first competed with the larger predators and then replaced them, they may have allowed more young to survive each year, gradually increasing the populations of favored species. As these populations expanded, they in turn may have competed with other game species for the same environmental niche, forcing the less hunted species into extinction. This theory, suggests that human hunters played an indirect role in Pleistocene extinctions by hunting one species more than another.

1. What does the passage mainly discuss?
(A) The effects of human activities on prehistoric wildlife
(B) The origins of the hunter-gatherer way of life
(C) The diets of large animals of the Pleistocene epoch
(D) The change in climate at the end of the Pleistocene epoch

2. The word "Undoubtedly" in line 1 is closest in meaning to
(A) occasionally
(B) unexpectedly
(C) previously
(D) certainly

3. The word "components" in line 2 is closest in meaning to
(A) parts
(B) problems
(C) changes
(D) varieties

4. Which of the following is mentioned as supporting the Pleistocene overkill hypothesis?
(A) Many of the animals that became extinct were quite large.

(B) Humans migrated into certain regions around the time that major extinctions occurred.
(C) There is evidence that new species were arriving in areas inhabited by humans.
(D) Humans began to keep and care for certain animals.

5. The word "Besides" in line 14 is closest in meaning to
(A) caused by
(B) whereas
(C) in addition to
(D) in favor of

6. The author mentions saber-toothed cats in line 17 as an example of a carnivore that
(A) became extinct before the Pleistocene epoch
(B) was unusually large for its time
(C) was not able to compete with humans
(D) caused the extinction of several species

7. The word "they" in line 22 refers to
(A) human hunters
(B) game animals
(C) other predators
(D) large mammals

8. According to the passage , what is one difference between the hunting done by some humans and the hunting done by gray wolves?
(A) Some humans hunt more frequently than gray wolves.
(B) Gray wolves hunt in larger groups than some humans.
(C) Some humans can hunt larger animals than gray wolves can hunt.
(D) Some humans prey on animals of all ages, but gray wolves concentrate their efforts on young animals.

9. The word "favored" in line 26 is closest in meaning to
(A) large
(B) escaping
(C) preferred
(D) local

10. According to the passage , the imbalances discussed in paragraph 3 may have resulted from
(A) the effect of climate changes on large game animals
(B) large animals moving into a new environment
(C) humans hunting some species more than others
(D) older animals not being able to compete with younger animals

PASSAGE 76

Under the Earth's topsoil, at various levels, sometimes under a layer of rock, there are deposits of clay. Look at cuts where highways have been built to see exposed clay beds; or look at a construction site, where pockets of clay may be exposed. Rivers also reveal clay along their banks, and erosion on a hillside may make clay easily accessible. What is clay made of? The Earth's surface is basically rock, and it is this rock that gradually decomposes into clay. Rain, streams, alternating freezing and thawing, roots of trees and plants forcing their way into cracks, earthquakes, volcanic action, and glaciers — all of these forces slowly break down the Earth's exposed rocky crust into smaller and smaller pieces that eventually become clay.

Rocks are composed of elements and compounds of elements. Feldspar, which is the most abundant mineral on the Earth's surface, is basically made up of the oxides silica and alumina combined with alkalis like potassium and some so-called impurities such as iron. Feldspar is an essential component of granite rocks, and as such it is the basis of clay. When it is wet, clay can be easily shaped to make a variety of useful objects, which can then be fired to varying degrees of hardness and covered with impermeable decorative coatings of glasslike material called glaze. Just as volcanic action, with its intense heat, fuses the elements in certain rocks into a glasslike rock called obsidian, so can we apply heat to earthen materials and change them into a hard, dense material. Different clays need different heat levels to fuse, and some, the low-fire clays, never become nonporous and watertight like highly fired stoneware. Each clay can stand only a certain amount of heat without losing its shape through sagging or melting. Variations of clay composition and the temperatures at which they are fired account for the differences in texture and appearance between a china teacup and an earthenware flowerpot.

1. The author's main point in paragraph 1 is that clay deposits
(A) conceal layers of rock
(B) can be found in various places
(C) are usually small
(D) must be removed from construction sites

2. It can be inferred from the passage that clay is LEAST likely to be plentiful in which of the following areas?
(A) in desert sand dunes
(B) in forests
(C) on hillsides
(D) near rivers

3. The word "accessible" in line 4 is closest in meaning to
(A) buried
(B) improved
(C) available
(D) workable

4. According to the passage , rock breaks down into clay under all of the following conditions EXCEPT when
(A) it is exposed to freezing and thawing
(B) roots of trees force their way into cracks

(C) it is combined with alkalis
(D) natural forces wear away the Earth's crust

5. Why does the author mention feldspar in line 10?
(A) It is often used as a substitute for clay.
(B) It is damaged by the oxides in clay.
(C) Its presence indicates inferior clay.
(D) It is a major component of clay.

6. The word "it" in line 13 refers to
(A) iron
(B) feldspar
(C) granite
(D) clay

7. Based on the information in the passage , it can be inferred that low-fire clays are MOST appropriate for making objects that
(A) must be strong
(B) can be porous
(C) have a smooth texture
(D) are highly decorated

8. The phrase "account for" in line 22 is closest in meaning to
(A) reduce
(B) explain
(C) combine with
(D) list all of

9. The passage supports which of the following conclusions?
(A) Clay deposits are only found deep in the Earth.
(B) If clay contains too much iron it will melt when fired.
(C) Only certain types of clay are appropriate for making china teacups.
(D) If sufficient heat is applied, all clay will become nonporous.

PASSAGE 77

It is estimated that over 99 percent of all species that ever existed have become extinct. What causes extinction? When a species is no longer adapted to a changed environment, it may perish. The exact causes of a species' death vary from situation to situation. Rapid ecological change may render an environment hostile to a species. For example, temperatures may change and a species may not be able to adapt. Food resources may be affected by environmental changes, which will then cause problems for a species requiring these resources. Other species may become better adapted to an environment, resulting in competition and, ultimately, in the death of a species.

The fossil record reveals that extinction has occurred throughout the history of Earth. Recent analyses have also revealed that on some occasions many species became extinct at the same time — a mass extinction. One of the best-known examples of mass extinction occurred 65 million years ago with the demise of dinosaurs and many other forms of life. Perhaps the largest mass extinction was the one that occurred 225 million years ago, when approximately 95 percent of all species died, mass extinctions can be caused by a relatively rapid change in the environment and can be worsened by the close interrelationship of many species. If, for example, something were to happen to destroy much of the plankton in the oceans, then the oxygen content of Earth would drop, affection even organisms not living in the oceans. Such a change would probably lead to a mass extinction.

One interesting, and controversial, finding is that extinctions during the past 250 million years have tended to be more intense every 26 million years. This periodic extinction might be due to intersection of the Earth's orbit with a cloud of comets, but this theory is purely speculative. Some researchers have also speculated that extinction may often be random. That is, certain species may be eliminated and others may survive for no particular reason. A species' survival may have nothing to do with its ability or inability to adapt. If so, some of evolutionary history may reflect a sequence of essentially random events.

1. The word "it" in line 3 refers to
(A) environment
(B) species
(C) extinction
(D) 99 percent

2. The word "ultimately" in line 8 is closest in meaning to
(A) exceptionally
(B) dramatically
(C) eventually
(D) unfortunately

3. What does the author say in paragraph 1 regarding most species in Earth's history
(A) They have remained basically unchanged from their original forms.
(B) They have been able to adapt to ecological changes.
(C) They have caused rapid change in the environment.
(D) They are no longer in existence.

4. Which of the following is NOT mentioned in paragraph 1 as resulting from rapid ecological change?
(A) Temperature changes
(B) Availability of food resources
(C) Introduction of new species
(D) Competition among species

5. The word "demise" in line 12 is closest in meaning to
(A) change

(B) recovery
(C) help
(D) death

6. Why is "plankton" mentioned in line 17?
(A) To demonstrate the interdependence of different species.
(B) To emphasize the importance of food resources in preventing mass extinction.
(C) To illustrate a comparison between organisms that live on the land and those that live in the ocean.
(D) To point out that certain species could never become extinct.

7. According to paragraph 2, evidence from fossils suggests that
(A) Extinction of species has occurred from time to time throughout Earth's history.
(B) Extinctions on Earth have generally been massive
(C) There has been only one mass extinction in Earth's history.
(D) Dinosaurs became extinct much earlier than scientists originally believed.

8. The word "finding" in line 20 is closest in meaning to
(A) published information
(B) research method
(C) ongoing experiment
(D) scientific discovery

9. Which of the following can be inferred about the theory mentioned in Line 21-23?
(A) Many scientists could be expected to disagree with it.
(B) Evidence to support the theory has recently been found.
(C) The theory is no longer seriously considered.
(D) Most scientists believe the theory to be accurate.

10. In paragraph 3, the author makes which of the following statements about a species' survival?
(A) It reflects the interrelationship of many species.
(B) It may depend on chance events.
(C) It does not vary greatly from species to species
(D) It is associated with astronomical conditions.

11. According to the passage , it is believed that the largest extinction of a species occurred
(A) 26 million years ago
(B) 65 million years ago
(C) 225 million years ago
(D) 250 million years ago

PASSAGE 78

Archaeological discoveries have led some scholars to believe that the first Mesopotamian inventors of writing may have been a people the later Babylonians called Subarians. According to tradition, they came from the north and moved into Uruk in the south. By about 3100 B.C., they were apparently subjugated in southern Mesopotamia by the Sumerians, whose name became synonymous with the region immediately north of the Persian Gulf, in the fertile lower valleys of the Tigris and Euphrates. Here the Sumerians were already well established by the year 3000 B.C. They had invented bronze, an alloy that could be cast in molds, out of which they made tools and weapons. They lived in cities, and they had begun to acquire and use capital. Perhaps most important, the Sumerians adapted writing (probably from the Subarians) into a flexible tool of communication.

Archaeologists have known about the Sumerians for over 150 years. Archaeologists working at Nineveh in northern Mesopotamia in the mid-nineteenth century found many inscribed clay tablets. Some they could decipher because the language was a Semitic one (Akkadian), on which scholars had already been working for a generation. But other tablets were inscribed in another language that was not Semitic and previously unknown. Because these inscriptions made reference to the king of Sumer and Akkad, a scholar suggested that the new language be called Sumerian.

But it was not until the 1890's that archaeologists excavating in city-states well to the south of Nineveh found many thousands of tablets inscribed in Sumerian only. Because the Akkadians thought of Sumerian as a classical language (as ancient Greek and Latin are considered today), they taught it to educated persons and they inscribed vocabulary, translation exercises, and other study aids on tablets. Working from known Akkadian to previously unknown Sumerian, scholars since the 1890's have learned how to read the Sumerian language moderately well. Vast quantities of tablets in Sumerian have been unearthed during the intervening years from numerous sites.

1. According to the passage , the inventors of written language in Mesopotamia were probably the
(A) Babylonians
(B) Subarians
(C) Akkadians
(D) Sumerians

2. The word "subjugated" in line 4 is closest in meaning to
(A) distinguished
(B) segregated
(C) concentrated
(D) conquered

3. The phrase "synonymous with" in line 5 is closest in meaning to
(A) equivalent to
(B) important for
(C) respected in
(D) familiar with

4. According to the passage , by the year 3000 B.C. the Sumerians had already done all of the following EXCEPT:

(A) They had abandoned the area north of the Persian Gulf.
(B) They had established themselves in cities.
(C) They had started to communicate through
(D) They had created bronze tools and weapons.

5. The word "some" in line 14 refers to
(A) Archaeologists
(B) Sumerians
(C) years
(D) clay tablets

6. Which of the following can be inferred from the passage concerning the Sumerians?
(A) They were descendants of the Persians.
(B) They were the first people to cultivate the valley of the Tigris.
(C) They were accomplished musicians.
(D) They had the beginnings of an economy.

7. According to the passage , when did archaeologists begin to be able to understand tablets inscribed in Sumerian?
(A) in the early nineteenth century
(B) more than 150 years ago
(C) after the 1890's
(D) in the mid-eighteenth century

8. According to the passage , in what way did the Sumerian language resemble ancient Greek and Latin?
(A) It was invented in Mesopotamia.
(B) It became well established around 3000 B.C.
(C) It became a classical language.
(D) It was used exclusively for business transactions.

9. The word "excavating" in line 19 is closest in meaning to
(A) living
(B) digging
(C) assembling
(D) building

10. According to the passage , how did archaeologists learn to read the Sumerian language?
(A) by translating the work of the Subarians
(B) by using their knowledge of spoken Semitic languages
(C) by comparing Sumerian to other classical languages
(D) by using their knowledge of Akkadian

PASSAGE 79

Some animal behaviorists argue that certain animals can remember past events, anticipate future ones, make plans and choices, and coordinate activities within a group. These scientists, however, are cautious about the extent to which animals can be credited with conscious processing.

Explanations of animal behavior that leave out any sort of consciousness at all and ascribe actions entirely to instinct leave many questions unanswered. One example of such unexplained behavior: honeybees communicate the sources of nectar to one another by doing a dance in a figure-eight pattern. The orientation of the dance conveys the position of the food relative to the sun's position in the sky, and the speed of the dance tells how far the food source is from the hive. Most researchers assume that the ability to perform and encode the dance is innate and shows no special intelligence. But in one study, when experimenters kept changing the site of the food source, each time moving the food 25 percent farther from the previous site, foraging honeybees began to anticipate where the food source would appear next. When the researchers arrived at the new location, they would find the bees circling the spot, waiting for their food. No one has yet explained how bees, whose brains weigh four ten-thousandths of an ounce, could have inferred the location of the new site.

Other behaviors that may indicate some cognition include tool use. Many animals, like the otter who uses a stone to crack mussel shells, are capable of using objects in the natural environment as rudimentary tools. One researcher has found that mother chimpanzees occasionally show their young how to use tools to open hard nuts. In one study, chimpanzees compared two pairs of food wells containing chocolate chips. One pair might contain, say, five chips and three chips, the other four chips and three chips. Allowed to choose which pair they wanted, the chimpanzees almost always chose the one with the higher total, showing some sort of summing ability. Other chimpanzees have learned to use numerals to label quantities of items and do simple sums.

1. What does the passage mainly discuss?
(A) The role of instinct in animal behavior
(B) Observations that suggest consciousness in animal behavior
(C) The use of food in studies of animal behavior
(D) Differences between the behavior of animals in their natural environments and in laboratory experiments.

2. Which of the following is NOT discussed as an ability animals are thought to have?
(A) Selecting among choices
(B) Anticipating events to come
(C) Remembering past experiences
(D) Communicating emotions

3. What is the purpose of the honeybee dance?
(A) To determine the quantity of food at a site
(B) To communicate the location of food

(C) To increase the speed of travel to food sources
(D) To identify the type of nectar that is available

4. The word "yet" in line 15 is closest in meaning to
(A) however
(B) since
(C) generally
(D) so far

5. What did researchers discover in the study of honeybees discussed in paragraph 2?
(A) Bees are able to travel at greater speeds than scientists thought.
(B) The bees could travel 25% farther than scientists expected.
(C) The bees were able to determine in advance where scientists would place their food.
(D) Changing the location of food caused bees to decrease their dance activity.

6. It can be inferred from the passage that brain size is assumed to
(A) be an indicator of cognitive ability
(B) vary among individuals within a species
(C) be related to food consumption
(D) correspond to levels of activity

7. Why are otters and mussel shells included in the discussion in paragraph 3?
(A) To provide an example of tool use among animals
(B) To prove that certain species demonstrate greater ability in tool use than other species
(C) To illustrate how otters are using objects as tools
(D) To demonstrate why mother chimpanzees show their young how to use tools

8. The word "rudimentary" in line 20 is closest in meaning to
(A) superior
(B) original
(C) basic
(D) technical

9. It can be inferred from the statement about mother chimpanzees and their young (lines 20-22) that young chimpanzees have difficulty
(A) communicating with their mothers
(B) adding quantities
(C) making choices
(D) opening hard nuts

10. The phrase "the one" in line 24-25 refers to the
(A) study
(B) pair
(C) chimpanzee

(D) ability

11. Scientists concluded from the experiment with chimpanzees and chocolate chips that chimpanzees
(A) lack abilities that other primates have
(B) prefer to work in pairs or groups
(C) exhibit behavior that indicates certain mathematical abilities
(D) have difficulty selecting when given choices

PASSAGE 80

A survey is a study, generally in the form of an interview or a questionnaire that provides information concerning how people think and act. In the United States, the best-known surveys are the Gallup poll and the Harris poll. As anyone who watches the news during presidential campaigns knows, these polls have become an important part of political life in the United States.

North Americans are familiar with the many person-on-the-street interviews on local television news shows. While such interviews can be highly entertaining, they are not necessarily an accurate indication of public opinion. First, they reflect the opinions of only those people who appear at a certain location. Thus, such samples can be biased in favor of commuters, middle-class shoppers, or factory workers, depending on which area the newspeople select. Second, television interviews tend to attract outgoing people who are willing to appear on the air, while they frighten away others who may feel intimidated by a camera. A survey must be based on a precise, representative sampling if it is to genuinely reflect a broad range of the population.

In preparing to conduct a survey, sociologists must exercise great care in the wording of questions. An effective survey question must be simple and clear enough for people to understand it. It must also be specific enough so that there are no problems in interpreting the results. Even questions that are less structured must be carefully phrased in order to elicit the type of information desired. Surveys can be indispensable sources of information, but only if the sampling is done properly and the questions are worded accurately.

There are two main forms of surveys: the interview and the questionnaire. Each of these forms of survey research has its advantages. An interviewer can obtain a high response rate because people find it more difficult to turn down a personal request for an interview than to throw away a written questionnaire. In addition, an interviewer can go beyond written questions and probe for a subject's underlying feelings and reasons. However, questionnaires have the advantage of being cheaper and more consistent.

1. What does the passage mainly discuss?
(A) The history of surveys in North America
(B) The principles of conducting surveys
(C) Problems associated with interpreting surveys
(D) The importance of polls in American political life

2. The word "they" in line 8 refers to
(A) North Americans

(B) news shows
(C) interviews
(D) opinions

3. According to the passage , the main disadvantage of person-on-the-street interviews is that they
(A) are not based on a representative sampling
(B) are used only on television
(C) are not carefully worded
(D) reflect political opinions

4. The word "precise" in line 13 is closest in meaning to
(A) planned
(B) rational
(C) required
(D) accurate

5. According to paragraph 3, which of the following is most important for an effective survey?
(A) A high number of respondents
(B) Carefully worded questions
(C) An interviewer's ability to measure respondents' feelings
(D) A sociologist who is able to interpret the results

6. The word "exercise" in line 15 is closest in meaning to
(A) utilize
(B) consider
(C) design
(D) defend

7. The word "elicit" in line 19 is closest in meaning to
(A) compose
(B) rule out
(C) predict
(D) bring out

8. It can be inferred from the passage that one reason that sociologists may become frustrated with questionnaires is that
(A) respondents often do not complete and return questionnaires
(B) questionnaires are often difficult to read
(C) questionnaires are expensive and difficult to distribute
(D) respondents are too eager to supplement questions with their own opinions

9. According to the passage , one advantage of live interviews over questionnaires is that live interviews
(A) cost less

(B) can produce more information
(C) are easier to interpret
(D) minimize the influence of the researcher

10. The word "probe" in line 26 is closest in meaning to
(A) explore
(B) influence
(C) analyze
(D) apply

11. Which of the following terms is defined in the passage ?
(A) Survey (line 1)
(B) Public opinion (line 8)
(C) Representative sampling (line 13)
(D) Response rate (line 24)

PASSAGE 81

The largest of the giant gas planets, Jupiter, with a volume 1,300 times greater than Earth's, contains more than twice the mass of all the other planets combined. It is thought to be a gaseous and fluid planet without solid surfaces, Had it been somewhat more massive, Jupiter might have attained internal temperatures as high as the ignition point for nuclear reactions, and it would have flamed as a star in its own right. Jupiter and the other giant planets are of a low-density type quite distinct from the terrestrial planets: they are composed predominantly of such substances as hydrogen, helium, ammonia, and methane, unlike terrestrial planets. Much of Jupiter's interior might be in the form of liquid, metallic hydrogen. Normally, hydrogen is a gas, but under pressures of millions of kilograms per square centimeter, which exist in the deep interior of Jupiter, the hydrogen atoms might lock together to form a liquid with the properties of a metal. Some scientists believe that the innermost core of Jupiter might be rocky, or metallic like the core of Earth.

Jupiter rotates very fast, once every 9.8 hours. As a result, its clouds, which are composed largely of frozen and liquid ammonia, have been whipped into alternating dark and bright bands that circle the planet at different speeds in different latitudes. Jupiter's puzzling Great Red Spot changes size as it hovers in the Southern Hemisphere. Scientists speculate it might be a gigantic hurricane, which because of its large size (the Earth could easily fit inside it), lasts for hundreds of years.

Jupiter gives off twice as much heat as it receives from the Sun. Perhaps this is primeval heat or heat generated by the continued gravitational contraction of the planet. Another starlike characteristic of Jupiter is its sixteen natural satellites, which, like a miniature model of the Solar System, decrease in density with distance — from rocky moons close to Jupiter to icy moons farther away. If Jupiter were about 70 times more massive, it would have become a star, Jupiter is the best-preserved sample of the early solar nebula, and with its satellites, might contain the most important clues about the origin of the Solar System.

1. The word "attained" in line 4 is closest in meaning to
(A) attempted
(B) changed
(C) lost
(D) reached

2. The word "flamed" in line 5 is closest in meaning to
(A) burned
(B) divided
(C) fallen
(D) grown

3. The word "they" in line 7 refers to
(A) nuclear reactions
(B) giant planets
(C) terrestrial
(D) substances

4. According to the passage , hydrogen can become a metallic-like liquid when it is
(A) extremely hot
(B) combined with helium
(C) similar to atmospheres
(D) under great pressures

5. According to the passage , some scientists believe Jupiter and Earth are similar in that they both have
(A) solid surfaces
(B) similar masses
(C) similar atmospheres
(D) metallic cores

6. The clouds surrounding Jupiter are mostly composed of
(A) ammonia
(B) helium
(C) hydrogen
(D) methane

7. It can be inferred from the passage that the appearance of alternating bands circling Jupiter is caused by
(A) the Great Red Spot
(B) heat from the Sun
(C) the planet's fast rotation
(D) Storms from the planet's Southern Hemisphere

8. The author uses the word "puzzling" in line 17 to suggest that the Great Red Spot is
(A) the only spot of its kind
(B) not well understood
(C) among the largest of such spots
(D) a problem for the planet's continued existence

9. Paragraph 3 supports which of the following conclusions?
(A) Jupiter gives off twice as much heat as the Sun.
(B) Jupiter has a weaker gravitational force than the other planets.
(C) Scientists believe that Jupiter was once a star.
(D) Scientists might learn about the beginning of the Solar System by Studying Jupiter.

10. Why does the author mention primeval heat (lines 21)?
(A) To provide evidence that Jupiter is older than the Sun
(B) To provide evidence that Jupiter is older than the other planets
(C) To suggest a possible explanation for the number of satellites that Jupiter has
(D) To suggest a possible source of the quantity of heat that Jupiter gives off

11. According to the passage , Jupiter's most distant moon is
(A) the least dense
(B) the largest
(C) warm on the surface
(D) very rocky on the surface

12. Which of the following statements is supported by the passage ?
(A) If Jupiter had fewer satellites, it would be easier for scientists to study the planet itself.
(B) If Jupiter had had more mass, it would have developed internal nuclear reactions.
(C) If Jupiter had been smaller, it would have become a terrestrial planet.
(D) if Jupiter were larger, it would give off much less heat

PASSAGE 82

(30)

Ethology is concerned with the study of adaptive, or survival, value of behavior and its evolutionary history. Ethological theory began to be applied to research on children in the 1960's but has become even more influential today. The origins of ethology can be traced back to the work of Darwin. Its modern foundations were laid by two European zoologists, Konrad Lorenz and Niko Tinbergen.

Watching the behaviors diverse animal species in their natural habitats, Lorenz, and Tinbergen observed behavior patterns that promote survival. The most well-known of these is imprinting, the early following behavior of certain baby birds that ensures that the young will stay close to their mother and be fed and protected from danger. Imprinting takes place during an early, restricted time period of development. If the mother goose is not present during this time, but an object

resembling her in important features is, young goslings may imprint on it instead.

Observations of imprinting led to major concept that has been applied in child development — the critical period. It refers to a limited times span during which the child is biologically prepared to acquire certain adaptive behaviors but needs the support of suitably stimulating environment. Many researchers have conducted studies to find out whether complex cognitive and social behaviors must be learned during restricted time periods. For example, if children are deprived of adequate food or physical and social stimulation during the early years of life, will their intelligence be permanently impaired? If language is not mastered during the preschool years, is the child's capacity to acquire it reduced?

Inspired by observations of imprinting, in 1969 the British psychoanalyst John Bowlby applied ethological theory to the understanding of the relationship between an infant and its parents. He argued that attachment behaviors of babies, such as smiling, babbling, grasping, and crying, are built-in social signals that encourage the parents to approach, care for, and interact with the baby. By keeping a parent near, these behaviors help ensure that the baby will be fed, protected from danger, and provided with the stimulation and affection necessary for healthy growth. The development of attachment in human infants is a lengthy process involving changes in psychological structures that lead to a deep affectional tie between parent and baby.

1. What was Darwin's contribution to ethology?
(A) Darwin improved on the original principles of ethology.
(B) Darwin was the professor who taught Lorenz and Tinbergen.
(C) Darwin's work provided the basis for ethology.
(D) Darwin was the first person to apply ethological theory to children.

2. The word "diverse" in line 6 is closest in meaning to
(A) small
(B) varied
(C) wild
(D) particular

3. The word "ensures" in line 8 is closest in meaning to
(A) guarantees
(B) proves
(C) teaches
(D) assumes

4. According to the passage , if a mother goose is not present during the time period when imprinting takes place, which of the following will most likely occur?
(A) The gosling will not imprint on any object.
(B) The gosling may not find a mate when it matures.
(C) The mother will later imprint on the gosling.
(D) The gosling may imprint on another object.

5. The word "it" in line 12 refers to
(A) development

(B) goose
(C) time
(D) object

6. The word "suitably" in line 16 is closest in meaning to
(A) willingly
(B) moderately
(C) appropriately
(D) emotionally

7. The author mentions all of the following as attachment behaviors of human infants EXCEPT
(A) grasping
(B) crying
(C) eating
(D) smiling

8. According to the passage , attachment behaviors of infants are intended to
(A) get the physical, emotional and social needs of the infant met
(B) allow the infant to become imprinted on objects that resemble the parent
(C) provide the infant with a means of self-stimulation
(D) prepare the infant to cope with separation

9. The phrase "affectional tie" in line 30 is closest in meaning to
(A) cognitive development
(B) emotional attachment
(C) psychological need
(D) behavioral change

10. It can be inferred from the passage that ethological theory assumes that
(A) to learn about human behavior only human subjects should be studied
(B) failure to imprint has no influence on intelligence
(C) the notion of critical periods applies only to animals
(D) there are similarities between animal and human behavior

PASSAGE 83

The economic depression in the late-nineteenth-century United States contributed significantly to a growing movement in literature toward realism and naturalism. After the 1870's, a number of important authors began to reject the romanticism that had prevailed immediately following the Civil War of 1861-1865 and turned instead to realism. Determined to portray life as it was, with fidelity to real life and accurate representation without idealization, they studied local dialects, wrote stories which focused on life in specific regions of the country, and emphasized the "true" relationships between people. In doing so, they reflected broader trends in the society, such as industrialization, evolutionary theory which emphasized the effect of the environment on humans,

and the influence of science.

Realists such as Joel Chandler Harris and Ellen Glasgow depicted life in the South, Hamlin Garland described life on the Great Plains, and Sarah Orne Jewett wrote about everyday life in rural New England. Another realist, Bret Harte, achieved fame with stories that portrayed local life in the California mining camps.

Samuel Clemens, who adopted the pen name Mark Twain, became the country's most outstanding realist author, observing life around him with a humorous and skeptical eye. In his stories and novels, Twain drew on his own experiences and used dialect and common speech instead of literary language, touching off a major change in American prose style.

Other writers became impatient even with realism. Pushing evolutionary theory to its limits, they wrote of a world in which a cruel and merciless environment determined human fate. These writers, called naturalists, often focused on economic hardship, studying people struggling with poverty, and other aspects of urban and industrial life. Naturalists brought to their writing a passion for direct and honest experience.

Theodore Dreiser, the foremost naturalist writer, in novels such as Sister Carrie, grimly portrayed a dark world in which human beings were tossed about by forces beyond their understanding or control. Dreiser thought that writers should tell the truth about human affairs, not fabricate romance, and Sister Carrie, he said, was "not intended as a piece of literary craftsmanship, but was a picture of conditions."

1. Which aspect of late-nineteenth-century United States literature does the passage mainly discuss?

(A) The influence of science on literature
(B) The importance of dialects for realist writers
(C) The emergence of realism and naturalism
(D) The effects of industrialization on romanticism

2. The word "prevailed" in line 4 is closest in meaning to

(A) dominated
(B) transformed
(C) entered
(D) generalized

3. The word "they" in line 8 refers to

(A) authors
(B) dialects
(C) stories
(D) relationships

4. According to the passage , a highly significant factor in the development of realist and naturalist literature was

(A) the Civil War
(B) a recognition that romanticism was unpopular
(C) an increased interest in the study of common speech
(D) an economic depression

5. Realist writers took an interest in all of the following EXCEPT
(A) human relationships
(B) characteristics of different regions
(C) the idealization of life
(D) social and historical theories

6. The word "depicted" in line 11 is closest in meaning to
(A) emphasized
(B) described
(C) criticized
(D) classified

7. Why does the author mention mining camps in line 14?
(A) To contrast the themes of realist and naturalist writers
(B) To illustrate how Bret Harte differed from other authors
(C) As an example of a topic taken up by realist writers
(D) As an example of how setting can influence literary style

8. Which of the following wrote about life in rural New England?
(A) Ellen Glasgow
(B) Sarah Orne Jewett
(C) Hamlin Garland
(D) Mark Twain

9. Mark Twain is considered an important literary figure because he
(A) was the first realist writer in the United States
(B) rejected romanticism as a literary approach
(C) wrote humorous stories and novels
(D) influenced American prose style through his use of common speech

10. The word "foremost" in line 25 is closest in meaning to
(A) most difficult
(B) interesting
(C) most focused
(D) leading

11. Which of the following statements about Theodore Dreiser is supported by the passage ?
(A) He mainly wrote about historical subjects such as the Civil War.
(B) His novels often contained elements of humor.
(C) He viewed himself more as a social commentator than as a literary artist.
(D) He believed writers should emphasize the positive aspects of life.

PASSAGE 84

The lack of printing regulations and the unenforceability of British copyright law in the American colonies made it possible for colonial printers occasionally to act as publishers. Although they rarely undertook major publishing project because it was difficult to sell books as cheaply as they could be imported from Europe, printers in Philadelphia did publish work that required only small amounts of capital, paper, and type. Broadsides could be published with minimal financial risk. Consisting of only one sheet of paper and requiring small amounts of type, broadsides involved lower investments of capital than longer works. Furthermore, the broadside format lent itself to subjects of high, if temporary, interest, enabling them to meet with ready sale. If the broadside printer miscalculated, however, and produced a sheet that did not sell, it was not likely to be a major loss, and the printer would know this immediately, There would be no agonizing wait with large amounts of capital tied up, books gathering dust on the shelves, and creditors impatient for payment.

In addition to broadsides, books and pamphlets, consisting mainly of political tracts, catechisms, primers, and chapbooks were relatively inexpensive to print and to buy. Chapbooks were pamphlet-sized books, usually containing popular tales, ballads, poems, short plays, and jokes, small, both in formal and number of pages, they were generally bound simply, in boards (a form of cardboard) or merely stitched in paper wrappers (a sewn antecedent of modern-day paperbacks). Pamphlets and chapbooks did not require fine paper or a great deal of type to produce they could thus be printed in large, cost-effective editions and sold cheaply.

By far, the most appealing publishing investments were to be found in small books that had proven to be steady sellers, providing a reasonably reliable source of income for the publisher. They would not, by nature, be highly topical or political, as such publications would prove of fleeting interest. Almanacs, annual publications that contained information on astronomy and weather patterns arranged according to the days, week, and months of a given year, provided the perfect steady seller because their information pertained to the locale in which they would be used.

1. Which aspect of colonial printing does the passage mainly discuss?
(A) Laws governing the printing industry.
(B) Competition among printers
(C) Types of publications produced
(D) Advances in printing technology

2. According to the passage , why did colonial printers avoid major publishing projects?
(A) Few colonial printers owned printing machinery that was large enough to handle major projects.
(B) There was inadequate shipping available in the colonies.
(C) Colonial printers could not sell their work for a competitive price.
(D) Colonial printers did not have the skills necessary to undertake large publishing projects.

3. Broadsides could be published with little risk to colonial printers because they
(A) required a small financial investment and sold quickly
(B) were in great demand in European markets
(C) were more popular with colonists than chapbooks and pamphlets

(D) generally dealt with topics of long-term interest to many colonists

4. The word "they" in line 17 refers to
(A) chapbooks
(B) tales
(C) jokes
(D) pages

5. The word "antecedent" in line 19 is closest in meaning to
(A) predecessor
(B) format
(C) imitation
(D) component

6. Chapbooks produced in colonial America were characterized by
(A) fine paper
(B) cardboard covers
(C) elaborate decoration
(D) a large number of pages

7. The word "appealing" in line 22 is closest in meaning to
(A) dependable
(B) respectable
(C) enduring
(D) attractive

8. What were "steady sellers" (line 23)?
(A) Printers whose incomes were quite large
(B) People who traveled from town to town selling Books and pamphlets
(C) Investors who provided reliable financial Support for new printers
(D) Publications whose sales were usually consistent from year to year

9. The word "locale" in line 28 is closest in meaning to
(A) topic
(B) season
(C) interest
(D) place

10. All of the following are defined in the passage EXCEPT
(A) "Broadsides" (line 6)
(B) "catechisms" (line 15)
(C) "chapbooks" (line l6)
(D) "Almanacs" (line 25)

PASSAGE 85

Tulips are Old World, rather than New World, plants, with the origins of the species lying in Central Asia. They became an integral part of the gardens of the Ottoman Empire from the sixteenth century onward, and, soon after, part of European life as well. Holland, in particular, became famous for its cultivation of the flower.

A tenuous line marked the advance of the tulip to the New World, where it was unknown in the wild. The first Dutch colonies in North America had been established in New Netherlands by the Dutch West India Company in 1624, and one individual who settled in New Amsterdam (today's Manhattan section of New York City) in 1642 described the flowers that bravely colonized the settlers' gardens. They were the same flowers seen in Dutch still-life paintings of the time: crown imperials, roses, carnations, and of course tulips. They flourished in Pennsylvania too, where in 1698 William Penn received a report of John Tateham's "Great and Stately Palace," its garden full of tulips. By 1760, Boston newspapers were advertising 50 different kinds of mixed tulip "roots." But the length of the journey between Europe and North America created many difficulties. Thomas Hancock, an English settler, wrote thanking his plant supplier for a gift of some tulip bulbs from England, but his letter the following year grumbled that they were all dead.

Tulips arrived in Holland, Michigan, with a later wave of early nineteenth-century Dutch immigrants who quickly colonized the plains of Michigan. Together with many other Dutch settlements, such as the one at Pella, Iowa, they established a regular demand for European plants. The demand was bravely met by a new kind of tulip entrepreneur, the traveling salesperson. One Dutchman, Hendrick van der Schoot, spent six months in 1849 traveling through the United States taking orders for tulip bulbs. While tulip bulbs were traveling from Europe to the United States to satisfy the nostalgic longings of homesick English and Dutch settlers, North American plants were traveling in the opposite direction. In England, the enthusiasm for American plants was one reason why tulips dropped out of fashion in the gardens of the rich and famous.

1. Which of the following questions does the passage mainly answer?
(A) What is the difference between an Old World and a New World plant?
(B) Why are tulips grown in many different parts of the world?
(C) How did tulips become popular in North America?
(D) Where were the first Dutch colonies in North America located?

2. The word "integral" in line 2 is closest in meaning to
(A) interesting
(B) fundamental
(C) ornamental
(D) overlooked

3. The passage mentions that tulips were first found in which of the following regions?
(A) Central Asia
(B) Western Europe
(C) India
(D) North America

4. The word "flourished" in line 11 is closest in meaning to
(A) were discovered
(B) were marketed
(C) combined
(D) thrived

5. The author mentions tulip growing in New Netherlands, Pennsylvania. and Michigan in order to illustrate how
(A) imported tulips were considered more valuable than locally grown tulips
(B) tulips were commonly passed as gifts from one family to another
(C) tulips grew progressively more popular in North America
(D) attitudes toward tulips varied from one location to another

6. The word "grumbled" in line 16 is closest in meaning to
(A) denied
(B) warned
(C) complained
(D) explained

7. The passage mentions that one reason English and Dutch settlers planted tulips in their gardens was that tulips
(A) were easy to grow
(B) had become readily available
(C) made them appear fashionable
(D) reminded them of home

8. The word "they" in line 20 refers to
(A) tulips
(B) plains
(C) immigrants
(D) plants

9. According to the passage , which of the following changes occurred in English gardens during the European settlement of North America?
(A) They grew in size in order to provide enough plants to export to the New World.
(B) They contained a wider variety of tulips than ever before.
(C) They contained many new types of North American plants.
(D) They decreased in size on the estates of wealthy people.

10. The passage mentions which of the following as a problem associated with the importation of tulips into North America?
(A) They were no longer fashionable by the time they arrived.
(B) They often failed to survive the journey.

(C) Orders often took six months or longer to fill.
(D) Settlers knew little about how to cultivate them.

PASSAGE 86
(20)

The smooth operation of an ant colony depends on ten to twenty different signals, most of which are pheromones (chemical signals triggering behavioral responses). It is estimated that red fire ants employ at least twelve different chemical signals. The simplest of these is the carbon dioxide from the respiration of an ant cluster, a chemical that acts as a pheromone to promote aggregation. Workers move toward a source of carbon dioxide, resulting in solitary ants moving to join a group. At the other extreme, the most complex of the fire ants' signals is probably colony odor, by which the workers of a particular colony or nest identify another worker as local or foreign. Each ant nest has its own odor as a result of its location, history, and local food supply. The resident ants pick up this odor on their bodies, so that ants of the same species, but from different nests, have different colony odors. This allows ants to identify intruders and maintain colony integrity.

Fire ants also make use of an alarm pheromone to alert workers to an emergency, and their scouts lay down a trail pheromone as a guide during mass migrations. A fire ant queen emits a chemical signal that identifies her to the colony's workers. They respond by scurrying to gather around her. The decomposing corpse of a dead ant also generates a signal, to which workers respond by eliminating the corpse from the nest.

Ants provide examples of both public (accessible to other species) and private messages. One of their most important private messages concerns food, for a food source is worth keeping secret. Each species marks its trails with signals that are meaningless to others, so that an ant crossing a trail left by another ant species typically notices nothing. On the other hand, a secret signal to mark a dead body is unnecessary. Many kinds of ants perceive a natural decomposition product of dead insects as a signal to remove a corpse. If an outsider recognizes this message and moves the body, no harm is done.

1. What aspect of ants does the passage mainly discuss?
(A) The relationship between the queen and the worker ants
(B) Ways in which ants use chemical signals
(C) Methods ants use to identify food sources
(D) The importance of respiration in the production of ant pheromones

2. The phrase "smooth operation" in line 1 is closest in meaning to
(A) daily activity
(B) effective functioning
(C) delicate balance
(D) permanent location

3. According to the passage , carbon dioxide serves which of the following functions for fire ants?
(A) It protects the queen.
(B) It attracts other ant species.

(C) It informs workers of possible danger.
(D) It encourages the ants to gather together.

4. The word "cluster" in line 4 is closest in meaning to
(A) organ
(B) activity
(C) group
(D) cycle

5. According to the passage , each nest has a distinct odor that allows its inhabitants to
(A) find the location of the nest in the dark
(B) distinguish worker ants from other ants
(C) distinguish foreign ants from resident ants
(D) signal other inhabitants when foreign ants attack

6. The word "alert" in line 13 is closest in meaning to
(A) allow
(B) transport
(C) warn
(D) provide

7. What is the role of pheromones in the mass migrations of ants?
(A) Pheromones are used to create a trail that directs the ants during migrations.
(B) Pheromones signal the ants that the nest has been invaded and must be abandoned.
(C) Pheromones control the speed at which ants move from one location to another.
(D) Pheromones enable scouts to identify suitable areas for establishing a new nest.

8. The word "scurrying" in line 16 is closest in meaning to
(A) agreeing
(B) appearing
(C) competing
(D) rushing

9. The word "others" in line 21 refers to
(A) private messages
(B) species
(C) trails
(D) signals

10. Why does the author mention "dead insects" in line 23?
(A) To compare the social behaviors of ants with those of other insects
(B) To emphasize the dangers that all insects encounter
(C) To argue the superiority of ants over other insects
(D) To indicate a behavior that is common among various kinds of ants

11. Which of the following terms is defined in the passage ?
(A) pheromones (line 2)
(B) colony integrity (lines 12)
(C) mass migrations (line 14)
(D) private messages (lines 18-19)

PASSAGE 87

Because the low latitudes of the Earth, the areas near the equator, receive more heat than the latitudes near the poles, and because the nature of heat is to expand and move, heat is transported from the tropics to the middle and high latitudes. Some of this heat is moved by winds and some by ocean currents, and some gets stored in the atmosphere in the form of latent heat. The term "latent heat" refers to the energy that has to be used to convert liquid water to water vapor. We know that if we warm a pan of water on a stove, it will evaporate, or turn into vapor, faster than if it is allowed to sit at room temperature. We also know that if we hang wet clothes outside in the summertime they will dry faster than in winter, when temperatures are colder. The energy used in both cases to change liquid water to water vapor is supplied by heat — supplied by the stove in the first case and by the Sun in the latter case. This energy is not lost. It is stored in water vapor in the atmosphere as latent heat. Eventually, the water stored as vapor in the atmosphere will condense to liquid again, and the energy will be released to the atmosphere.

In the atmosphere, a large portion of the Sun's incoming energy is used to evaporate water, primarily in the tropical oceans. Scientists have tried to quantify this proportion of the Sun's energy. By analyzing temperature, water vapor, and wind data around the globe, they have estimated the quantity to be about 90 watts per square meter, or nearly 30 percent of the Sun's energy. Once this latent heat is stored within the atmosphere, it can be transported, primarily to higher latitudes, by prevailing, large-scale winds. Or it can be transported vertically to higher levels in the atmosphere, where it forms clouds and subsequent storms, which then release the energy back to the atmosphere.

1. The passage mainly discusses how heat
(A) is transformed and transported in the Earth's atmosphere
(B) is transported by ocean currents
(C) can be measured and analyzed by scientists
(D) moves about the Earth's equator

2. The passage mentions that the tropics differ from the Earth's polar regions in which of the following ways?
(A) The height of cloud formation in the atmosphere.
(B) The amount of heat they receive from the Sun.
(C) The strength of their large scale winds.
(D) The strength of their oceanic currents.

3. The word "convert" in line 6 is closest in meaning to
(A) mix
(B) change
(C) adapt
(D) reduce

4. Why does the author mention "the stove" in line 10?
(A) To describe the heat of the Sun.
(B) To illustrate how water vapor is stored.
(C) To show how energy is stored.
(D) To give an example of a heat source.

5. According to the passage , most ocean water evaporation occurs especially
(A) around the higher latitudes
(B) in the tropics
(C) because of large-scale winds
(D) because of strong ocean currents

6. According to the passage , 30 percent of the Sun's incoming energy
(A) is stored in clouds in the lower latitudes
(B) is transported by ocean currents
(C) never leaves the upper atmosphere
(D) gets stored as latent heat

7. The word "it" in line 18 refers to
(A) square meter
(B) the Sun's energy
(C) latent heat
(D) the atmosphere

8. The word "primarily" in the line 19 is closest in meaning to
(A) chiefly
(B) originally
(C) basically
(D) clearly

9. The word "prevailing" in line 19 is closest in meaning to
(A) essential
(B) dominant
(C) circular
(D) closest

10. All of the following words are defined in the passage EXCEPT
(A) low latitudes(line 1)

(B) latent heat (line 5)
(C) evaporate (line 7)
(D) atmosphere (line 14)

PASSAGE 88

Generally, in order to be preserved in the fossil record, organisms must possess hard body parts such as shells or bones. Soft, fleshy structures are quickly destroyed by predators or decayed by bacteria. Even hard parts left on the surface for a certain length of time will be destroyed. Therefore, organisms must be buried rapidly to escape destruction by the elements and to be protected against agents of weathering and erosion. Marine organisms thus are better candidates for fossilization than those living on the land because the ocean is typically the site of sedimentation, whereas the land is largely the site of erosion.

The beds of ancient lakes were also excellent sites for rapid burial of skeletal remains of freshwater organisms and skeletons of other animals, including those of early humans. Ancient swamps were particularly plentiful with prolific growths of vegetation, which fossilized in abundance. Many animals became trapped in bogs overgrown by vegetation. The environment of the swamps kept bacterial decay to a minimum, which greatly aided in the preservation of plants and animals. The rapidly accumulating sediments in flood plains, deltas, and stream channels buried freshwater organisms, along with other plants and animals that happened to fall into the water.

Only a small fraction of all the organisms that have ever lived are preserved as fossils. Normally, the remains of a plant or animal are completely destroyed through predation and decay. Although it seems that fossilization is common for some organisms, for others it is almost impossible. For the most part, the remains of organisms are recycled in the earth, which is fortunate because otherwise soil and water would soon become depleted of essential nutrients. Also, most of the fossils exposed on Earth's surface are destroyed by weathering processes. This makes for an incomplete fossil record with poor or no representation of certain species.

The best fossils are those composed of unaltered remains. Generally, it is the inorganic hard parts, composed mostly of calcium carbonate, that form the vast majority of unaltered fossils. Calcite and aragonite also contributed to a substantial number of fossils of certain organisms.

1. According to the passage , an organism without hard body parts
(A) is not likely to appear in the fossil record
(B) is not heavy enough to sink below the surface
(C) is not attractive to predators
(D) takes a long time to decay

2. The word "agents" in line 5 is closest in meaning to
(A) dangers
(B) examples
(C) areas
(D) causes

3. Why are marine organisms good candidates for fossilization?
(A) They have more fleshy structures than land organisms.
(B) It is likely that they will be buried rapidly.
(C) The water environment speeds the decay caused by bacteria.
(D) It takes longer for them to be preserved.

4. The fact that the "land is largely the site of erosion" (line 7 - 8) is significant because
(A) erosion is less destructive than sedimentation.
(B) fossils are most common in areas subject to erosion.
(C) erosion contributes to the destruction of skeletal remains.
(D) few organisms live in areas that experience extensive erosion.

5. According to the passage , why were the remains of organisms trapped in swamps better preserved for the fossil record than those that were not?
(A) The swamp environment reduced the amount of bacterial decay.
(B) Swamp waters contained higher amounts of materials such as calcium carbonate.
(C) There were fewer sediments in swamps than in other bodies of water.
(D) Swamp vegetation accelerated the decomposition of organisms.

6. The word "aided" in line 13 is closest in meaning to
(A) reversed
(B) helped
(C) reformed
(D) counted

7. It can be inferred that flood plains, deltas, and stream channels (lines 14 - 15) are similar in which of the following ways?
(A) Animals rather than plants have been preserved at such locations.
(B) Such locations are likely to be rich sources of fossils.
(C) Fossilized human remains are only rarely found in such locations.
(D) Rapid sedimentation in such locations makes it difficult to locate fossils.

8. What is the author's main point in paragraph 3?
(A) Weathering makes it impossible to identify many fossils.
(B) Many fossils have been buried forever under the soil.
(C) Fossils provide a limited sample of ancient organisms.
(D) It is easier to find the remains of plants than animals.

9. Why does the author mention "aragonite" in line 27
(A) To explain why fossils are rare
(B) To compare aragonite fossils and calcite fossils
(C) To argue that certain fossils are more informative than others
(D) To illustrate the kinds of inorganic hard parts that can form fossils

PASSAGE 89

In eighteenth-century colonial America, flowers and fruit were typically the province of the botanical artist interested in scientific illustration rather than being the subjects of fine art. Early in the nineteenth century, however, the Peale family of Philadelphia established the still life, a picture consisting mainly of inanimate objects, as a valuable part of the artist's repertoire. The fruit paintings by James and Sarah Miriam Peale are simple arrangements of a few objects, handsomely colored, small in size, and representing little more than what they are. In contrast were the highly symbolic, complex compositions by Charles Bird King, with their biting satire and critical social commentary. Each of these strains comminuted into and well past mid-century.

John F. Francis (1808-86) was a part of the Pennsylvania still-life tradition that arose, at least in part, from the work of the Peales. Most of his still lifes date from around 1850 to 1875. Luncheon Still Life looks like one of the Peales' pieces on a larger scale, with greater complexity resulting from the number of objects. It is also indebted to the luncheon type of still life found in seventeenth-century Dutch painting. The opened bottles of wine and the glasses of wine partially consumed suggest a number of unseen guests. The appeal of the fruit and nuts to our sense of taste is heightened by the juicy orange, which has already been sliced. The arrangement is additive, that is, made up of many different parts, not always compositionally integrated, with all objects of essentially equal importance.

About 1848, Severin Roesen came to the United States from Germany and settled in New York City, where he began to paint large, lush still lifes of flowers, fruit, or both, often measuring over four feet across. Still Life with fruit and champagne is typical in its brilliance of color, meticulous rendering of detail, compact composition, and unabashed abundance. Rich in symbolic overtones, the beautifully painted objects carry additional meanings — butterflies or fallen buds suggest the impermanence of life, a bird's nest with eggs means fertility, and so on. Above all, Roesen's art expresses the abundance that America symbolized to many of its citizens.

1. What does the passage mainly discuss?
(A) The artwork of James and Sarah Miriam Peale
(B) How Philadelphia became a center for art in the nineteenth century
(C) Nineteenth-century still-life paintings in the United States
(D) How botanical art inspired the first still-life paintings

2. Which of the following is mentioned as a characteristic of the still lifes of James and Sarah Miriam Peale?
(A) simplicity
(B) symbolism
(C) smooth texture
(D) social commentary

3. The word "biting" in line 8 is closest in meaning to
(A) simple
(B) sorrowful
(C) frequent

(D) sharp

4. The word "It" in line 13 refers to
(A) Luncheon Still Life
(B) one of the Peales' pieces
(C) a larger scale
(D) the number of objects

5. The word "heightened" in line 16 is closest in meaning to
(A) complicated
(B) directed
(C) observed
(D) increased

6. The word "meticulous" in line 23 is closest in meaning to
(A) careful
(B) significant
(C) appropriate
(D) believable

7. Which of the following terms is defined in the passage ?
(A) "repertoire" (line 5)
(B) "satire" (line 8)
(C) "additive" (line 17)
(D) "rendering" (line 23)

8. All of the following are mentioned as characteristics of Roesen's still lifes EXCEPT that they
(A) are symbolic
(B) use simplified representations of flowers and fruit
(C) include brilliant colors
(D) are large in size

9. Which of the following is mentioned as the dominant theme in Roesen's painting?
(A) Fertility
(B) Freedom
(C) Impermanence
(D) Abundance

PASSAGE 90

Perhaps one of the most dramatic and important changes that took place in the Mesozoic era occurred late in that era, among the small organisms that populate the uppermost, sunlit portion of the oceans — the plankton. The term "plankton" is a broad one, designating all of the small plants

and animals that float about or weakly propel themselves through the sea. In the late stages of the Mesozoic era, during the Cretaceous period, there was a great expansion of plankton that precipitated skeletons or shells composed of two types of mineral: silica and calcium carbonate.

This development radically changed the types of sediments that accumulated on the seafloor, because, while the organic parts of the plankton decayed after the organisms died, their mineralized skeletons often survived and sank to the bottom. For the first time in the Earth's long history, very large quantities of silica skeletons, which would eventually harden into rock, began to pile up in parts of the deep sea. Thick deposits of calcareous ooze made up of the tiny remains of the calcium carbonate-secreting plankton also accumulated as never before. The famous white chalk cliffs of Dover, in the southeast of England, are just one example of the huge quantities of such material that amassed during the Cretaceous period; there are many more. Just why the calcareous plankton were so prolific during the latter part of the Cretaceous period is not fully understood. Such massive amounts of chalky sediments have never since been deposited over a comparable period of time.

The high biological productivity of the Cretaceous oceans also led to ideal conditions for oil accumulation. Oil is formed when organic material trapped in sediments is slowly buried and subjected to increased temperatures and pressures, transforming it into petroleum. Sediments rich in organic material accumulated along the margins of the Tethys Seaway, the tropical east-west ocean that formed when Earth's single landmass (known as Pangaea) split apart during the Mesozoic era. Many of today's important oil fields are found in those sediments — in Russia, the Middle East, the Gulf of Mexico, and in the states of Texas and Louisiana in the United States.

1. What does the passage mainly discuss?
(A) How sediments were built up in oceans during the Cretaceous period
(B) How petroleum was formed in the Mesozoic era
(C) The impact of changes in oceanic animal and plant life in the Mesozoic era
(D) The differences between plankton found in the present era and Cretaceous plankton

2. The passage indicates that the Cretaceous period occurred
(A) in the early part of the Mesozoic era
(B) in the middle part of the Mesozoic era
(C) in the later part of the Mesozoic era
(D) after the Mesozoic era

3. The passage mentions all of the following aspects of plankton EXCEPT
(A) the length of their lives
(B) the level of the ocean at which they are found
(C) their movement
(D) their size

4. The word "accumulated" in line 8 is closest in meaning to
(A) depended
(B) matured
(C) dissolved
(D) collected

5. According to the passage , the most dramatic change to the oceans caused by plankton during the Cretaceous period concerned
(A) the depth of the water
(B) the makeup of the sediment on the ocean floor
(C) the decrease in petroleum-producing sediment
(D) a decline in the quantity of calcareous ooze on the seafloor

6. The "white chalk cliffs of Dover" are mentioned in line 14 of the passage to
(A) show where the plankton sediment first began to build up
(B) provide an example of a plankton buildup that scientists cannot explain
(C) provide an example of the buildup of plankton sediment
(D) indicate the largest single plankton buildup on Earth

7. The word "prolific" in line 17 is closest in meaning to
(A) fruitful
(B) distinct
(C) determined
(D) energetic

8. The word "ideal" in line 20 is closest in meaning to
(A) common
(B) clear
(C) perfect
(D) immediate

9. The word "it" in line 22 refers to
(A) biological productivity
(B) oil
(C) organic material
(D) petroleum

PASSAGE 91
(30)

The term "art deco" has come to encompass three distinct but related design trends of the 1920's and 1930's. The first was what is frequently referred to as "zigzag moderne" — the exotically ornamental style of such skyscrapers as the Chrysler Building in New York City and related structures such as the Paramount Theater in Oakland, California. The word "zigzag" alludes to the geometric and stylized ornamentation of zigzags, angular patterns, abstracted plant and animal motifs, sunbursts, astrological imagery, formalized fountains, and related themes that were applied in mosaic relief, and mural form to the exterior and interior of the buildings. Many of these buildings were shaped in the ziggurat form, a design resembling an ancient Mesopotamian temple tower that recedes in progressively smaller stages to the summit, creating a staircase-like effect.

The second manifestation of art deco was the 1930's "streamlined moderne" style — a Futuristic-looking aerodynamic style of rounded corners and horizontal bands known as "speed stripes". In architecture, these elements were frequently accompanied by round windows, extensive use of glass block, and flat rooftops.

The third style, referred to as either "international stripped classicism," or simply "classical moderne," also came to the forefront during the Depression, a period of severe economic difficult in the 1930's. This was a more conservative style, blending a simplified modernistic style with a more austere form of geometric and stylized relief sculpture and other ornament, including interior murals. Many buildings in this style were erected nationwide through government programs during the Depression.

Although art deco in its many forms was largely perceived as thoroughly modern, it was strongly influenced by the decorative arts movements that immediately preceded it. For example, like "art nouveau" (1890-1910), art deco also used plant motifs, but regularized the forms into abstracted repetitive patterns rather than presenting them as flowing, asymmetrical foliage, like the Viennese craftspeople of the Wiener Werkstatte, art deco designers worked with exotic materials, geometricized shapes, and colorfully ornate patterns. Furthermore, like the artisans of the Arts and Crafts Movement in England and the United States, art deco practitioners considered it their mission to transform the domestic environment through well-designed furniture and household accessories.

1. What aspect of "art deco" does the passage mainly discuss?
(A) The influence of art deco on the design of furniture and household accessories
(B) Ways in which government programs encouraged the development of art deco
(C) Architectural manifestations of art deco during the 1920's and 1930's
(D) Reasons for the popularity of art deco in New York and California

2. The word "encompass" in line 1 is closest in meaning to
(A) separate
(B) include
(C) replace
(D) enhance

3. The phrase "The first" in line 2 refers to
(A) the term "art deco"
(B) design trends
(C) the 1920's and 1930's
(D) skyscrapers

4. In line 9, the author mentions "an ancient Mesopotamian temple tower " in order to
(A) describe the exterior shape of certain "art deco" buildings
(B) explain the differences between ancient and modern architectural steles
(C) emphasize the extent of architectural advances
(D) argue for a return to more traditional architectural design

5. The streamlined moderne style is characterized by all of the following EXCEPT

(A) animal motifs
(B) flat roofs
(C) round windows
(D) "speed stripes"

6. The phrase "came to the forefront" in line 16 is closest in meaning to
(A) grew in complexity
(B) went through a process
(C) changed its approach
(D) became important

7. According to the passage , which of the following statements most accurately describes the relationship between art deco and art nouveau?
(A) They were art forms that competed with each other for government support during the Depression era.
(B) They were essentially the same art form.
(C) Art nouveau preceded art deco and influenced it.
(D) Art deco became important in the United States while art nouveau became popular in England.

8. According to the passage , a building having an especially ornate appearance would most probably have been designed in the style of
(A) zigzag moderne
(B) streamlined moderne
(C) classical moderne
(D) the Arts and Crafts Movement

9. According to the passage , which of the following design trends is known by more than one name?
(A) Zigzag moderne
(B) Streamlined moderne
(C) International stripped classicism
(D) Arts and Crafts Movement

10. The passage is primarily developed as
(A) the historical chronology of a movement
(B) a description of specific buildings that became famous for their unusual beauty
(C) an analysis of various trends within an artistic movement
(D) an argument of the advantages of one artistic form over another

PASSAGE 92

There are only a few clues in the rock record about climate in the Proterozoic eon. Much of our information about climate in the more recent periods of geologic history comes from the fossil

record, because we have a reasonably good understanding of the types of environment in which many fossil organisms flourished. The scarce fossils of the Proterozoic, mostly single-celled bacteria, provide little evidence in this regard. However, the rocks themselves do include the earliest evidence for glaciation, probably a global ice age.

The inference that some types of sedimentary rocks are the result of glacial activity is based on the principle of uniformitarianism, which posits that natural processes now at work on and within the Earth operated in the same manner in the distant past. The deposits associated with present-day glaciers have been well studied, and some of their characteristics are quite distinctive. In 2.3-billion-year-old rocks in Canada near Lake Huron (dating from the early part of the Proterozoic age), there are thin laminae of fine-grained sediments that resemble varves, the annual layers of sediment deposited in glacial lakes. Typically, present-day varves show two-layered annual cycle, one layer corresponding to the rapid ice melting and sediment transport of the summer season, and the other, finer-grained, layer corresponding to slower winter deposition. Although it is not easy to discern such details in the Proterozoic examples, they are almost certainly glacial varves. These fine-grained, layered sediments even contain occasional large pebbles or "dropstones," a characteristic feature of glacial environments where coarse material is sometimes carried on floating ice and dropped far from its source, into otherwise very fine grained sediment. Glacial sediments of about the same age as those in Canada have been found in other parts of North America and in Africa, India, and Europe. This indicates that the glaciation was global, and that for a period of time in the early Proterozoic the Earth was gripped in an ice age.

Following the early Proterozoic glaciation, however, the climate appears to have been fairly benign for a very long time. There is no evidence for glaciation for the next 1.5 billion years or so. Then, suddenly, the rock record indicates a series of glacial episodes between about 850 and 600 million year ago, near the end of the Proterozoic eon.

1. Which of the following does the passage mainly discuss?

(A) How patterns in rock layers have been used to construct theories about the climate of the Proterozoic age

(B) What some rare fossils indicate about glacial conditions during the late Proterozoic age

(C) The varying characteristics of Proterozoic glacial varves in different parts of the world

(D) The number of glacial episodes that the Earth has experienced since the Proterozoic age

2. According to the passage , the fossil record of the Proterozoic eon is

(A) highly regarded because it preserves the remains of many kinds of organisms

(B) less informative than the fossil record of more recent periods

(C) very difficult to interpret due to damage from bacteria

(D) more useful to researchers than otheraspects of the rock record

3. The word "scarce" in line 4 is closest in meaning to

(A) ancient

(B) tiny

(C) available

(D) rare

4. It can be inferred from the passage that the principle of uniformitarianism indicates that

(A) similar conditions produce similar rock formations
(B) rock layers in a given region remain undisturbed over time
(C) different kinds of sedimentary rocks may have similar origins
(D) each continent has its own distinctive pattern of sediment layers

5. The word "resemble" in line 14 is closest in meaning to
(A) result from
(B) penetrate
(C) look like
(D) replace have similar origins

6. According to the passage , the layers in varves are primarily formed by
(A) fossilized bacteria
(B) pieces of ancient dropstones
(C) a combination of ancient and recent sediments
(D) annual cycles of sediment transport and deposition

7. The phrase "the other" in line 17 refers to another
(A) annual cycle
(B) glacial lake
(C) layer of sediment
(D) season

8. According to the passage , the presence of dropstones indicates that
(A) the glacial environment has been unusually servere
(B) the fine-grained sediment has built up very slowly
(C) there has been a global ice age
(D) coarse rock material has been carried great distances

9. Why does the author mention Canada, North America, Africa, India, and Europe in lines 23-24?
(A) To demonstrate the global spread of dropstones
(B) To explain the principles of varve formation
(C) To provide evidence for the theory that there was a global ice age in the early Proterozoic eon
(D) To illustrate the varied climatic changes of the Proterozoic eon in different parts of the globe

10. Which of the following terms is defined in the passage ?
(A) fossil record (line 3)
(B) laminae (line 13)
(C) varves (line14)
(D) glacial episodes (line 28)

PASSAGE 93

In 1900 the United States had only three cities with more than a million residents — New York, Chicago, and Philadelphia. By 1930, it had ten giant metropolises. The newer ones experienced remarkable growth, which reflected basic changes in the economy.

The population of Los Angeles (114,000 in 1900) rose spectacularly in the early decades of the twentieth century, increasing a dramatic 1,400 percent from 1900 to 1930. A number of circumstances contributed to the meteoric rise of Los Angeles. The agricultural potential of the area was enormous if water for irrigation could be found, and the city founders had the vision and dating to obtain it by constructing a 225-mile aqueduct, completed in 1913, to tap the water of the Owens River. The city had a superb natural harbor, as well as excellent rail connections. The climate made it possible to shoot motion pictures year-round; hence Hollywood. Hollywood not only supplied jobs; it disseminated an image of the good life in Southern California on screens all across the nation. The most important single industry powering the growth of Los Angeles, however, was directly linked to the automobile. The demand for petroleum to fuel gasoline engines led to the opening of the Southern California oil fields, and made Los Angeles North America's greatest refining center.

Los Angeles was a product of the auto age in another sense as well: its distinctive spatial organization depended on widespread private ownership of automobiles. Los Angeles was a decentralized metropolis, sprawling across the desert landscape over an area of 400 square miles. It was a city without a real center. The downtown business district did not grow apace with the city as a whole, and the rapid transit system designed to link the center with outlying areas withered away from disuse. Approximately 800,000 cars were registered in Los Angeles County in 1930, one per 2.7 residents. Some visitors from the east coast were dismayed at the endless urban sprawl and dismissed Los Angeles as a mere collection of suburbs in search of a city. But the freedom and mobility of a city built on wheels attracted floods of migrants to the city.

1. What is the passage mainly about?

(A) The growth of cities in the United States in the early 1900's
(B) The development of the Southern California oil fields
(C) Factors contributing to the growth of Los Angeles
(D) Industry and city planning in Los Angeles

2. The author characterizes the growth of new large cities in the United States after 1900 as resulting primarily from

(A) new economic conditions
(B) images of cities shown in movies
(C) new agricultural techniques
(D) a large migrant population

3. The word "meteoric" in line 6 is closest in meaning to

(A) rapid
(B) famous
(C) controversial
(D) methodical

4. The word "it" in line 8 refers to

(A) aqueduct
(B) vision
(C) water
(D) agricultural potential

5. According to the passage , the most important factor in the development of agriculture around Los Angeles was the
(A) influx of new residents to agricultural areas near the city
(B) construction of an aqueduct
(C) expansion of transportation facilities
(D) development of new connections to the city's natural harbor

6. According to the passage , the initial success of Hollywood' s motion picture industry was due largely to the
(A) availability of many skilled workers
(B) beauty of the countryside
(C) region's reputation for luxurious lifestyles
(D) region's climate and good weather

7. It can be inferred from the passage that in 1930 the greatest number of people in the Los Angeles area were employed in
(A) farming
(B) oil refining
(C) automobile manufacturing
(D) the motion picture industry

8. According to the passage , the Southern California oil fields were initially exploited due to
(A) the fuel requirements of Los Angeles' rail system
(B) an increase in the use of gasoline engines in North America
(C) a desire to put unproductive desert land to good use
(D) innovative planning on the part of the city founders

9. The phrase "apace with" in line 21 is closest in meaning to
(A) anew with
(B) apart from
(C) as fast as
(D) at the middle of

10. It can be inferred from the passage that the spatial organization of Los Angeles contributed to the relative decline there of
(A) public transportation
(B) industrial areas
(C) suburban neighborhoods
(D) oil fields

11. The visitors from the east coast mentioned in the passage thought that Los Angeles
(A) was not accurately portrayed by Hollywood images
(B) lacked good suburban areas in which to live
(C) had an excessively large population
(D) was not really a single city

PASSAGE 94

(30)

Industrialization came to the United State after 1790 as North American entrepreneurs increased productivity by reorganizing work and building factories. These innovations in manufacturing boosted output and living standards to an unprecedented extent; the average per capita wealth increased by nearly 1 percent per year — 30 percent over the course of a generation. Goods that had once been luxury items became part of everyday life.

The impressive gain in output stemmed primarily from the way in which workers made goods, since the 1790's, North American entrepreneurs — even without technological improvements — had broadened the scope of the outwork system that made manufacturing more efficient by distributing materials to a succession of workers who each performed a single step of the production process. For example, during the 1820's and 1830's the shoe industry greatly expanded the scale and extend of the outwork system. Tens of thousands of rural women, paid according to the amount they produced, fabricated the "uppers" of shoes, which were bound to the soles by wage-earning journeymen shoemakers in dozens of Massachusetts towns, whereas previously journeymen would have made the entire shoe. This system of production made the employer a powerful "shoe boss" and eroded workers' control over the pace and conditions of labor. However, it also dramatically increased the output of shoes while cutting their price.

For tasks that were not suited to the outwork system, entrepreneurs created an even more important new organization, the modem factory, which used power-driven machines and assembly-line techniques to turn out large quantities of well-made goods. As early as 1782 the prolific Delaware inventor Oliver Evans had built a highly automated, laborsaving flour mill driven by water power. His machinery lifted the grain to the top of the mill, cleaned it as it fell into containers known as hoppers, ground the grain into flour, and then conveyed the flour back to the top of the mill to allow it to cool as it descended into barrels. Subsequently, manufacturers made use of new improved stationary steam engines to power their mills. This new technology enabled them to build factories in the nation's largest cities, taking advantage of urban concentrations of inexpensive labor, good transportation networks, and eager customers.

1. What is the passage mainly about?
(A) The difficulties of industrialization in North America
(B) The influence of changes in manufacturing on the growth of urban centers
(C) The rapid speed of industrialization in North America
(D) Improved ways of organizing the manufacturing of goods

2. The word "boosted" in line 3 is closest in meaning to

(A) ensured
(B) raised
(C) arranged
(D) discouraged

3. The word "scope" in line 9 is closest in meaning to
(A) value
(B) popularity
(C) extent
(D) diversity

4. The author mentions the shoe industry in the second paragraph to provide an example of how
(A) entrepreneurs increased output by using an extended outwork system
(B) entrepreneurs used technological improvements to increase output
(C) rural workers responded to "shoe bosses"
(D) changes in the outwork system improved the quality of shoes

5. All of the following are mentioned as effects of changes in the shoe industry during the 1820's and 1830's EXCEPT
(A) an increase in the worker's dependence on entrepreneurs
(B) an increase in the wages paid to journeymen shoemakers
(C) a decline in the workers ability to control the speed of production
(D) a decrease in the price of shoes

6. All of the following are true of the outwork system EXCEPT
(A) It involved stages of production.
(B) It was more efficient than the systems used before 1790.
(C) It made many employers less powerful than they had been before.
(D) It did not necessarily involve any technological improvements.

7. The word "prolific" in line 23 is closest in meaning to
(A) efficient
(B) productive
(C) self-employed
(D) progressive

8. According to the passage , how did later mills differ from the mills differ from the mill built by Oliver Evans?
(A) They were located away from large cities.
(B) They used new technology to produce power.
(C) They did not allow flour to cool before it was placed in Barrels.
(D) They combined technology with the outwork system.

9. The word "it" in line 25 refers to

(A) water power
(B) machinery
(C) grain
(D) mill

10. The passage mentions which of the following as a result of improvements in factory machinery?
(A) It become easier for factory' owners to find workers and customers.
(B) Manufacturers had to employ more highly skilled workers.
(C) The amount of power required for factories operate was reduced.
(D) Factories could operate more than one engine at a time.

11. The word "eager" in line 30 is closest in meaning to
(A) wealthy
(B) knowledgeable
(C) regular
(D) enthusiastic

PASSAGE 95

Pheromones are substances that serve as chemical signals between members of the same species. They are secreted to the outside of the body and cause other individuals of the species to have specific reactions. Pheromones, which are sometimes called "social hormones," affect a group of individuals somewhat like hormones do an individual animal. Pheromones are the predominant medium of communication among insects (but rarely the sole method). Some species have simple pheromone systems and produce only a few pheromones, but others produce many with various functions. Pheromone systems are the most complex in some of the so-called social insects, insects that live in organized groups.

Chemical communication differs from that by sight or sound in several ways. Transmission is relatively slow (the chemical signals are usually airborne), but the signal can be persistent, depending upon the volatility of the chemical, and is sometimes effective over a very long range. Localization of the signal is generally poorer than localization of a sound or visual stimulus and is usually effected by the animal's moving upwind in response to the stimulus. The ability to modulate a chemical signal is limited, compared with communication by visual or acoustic means, but some pheromones may convey different meanings and consequently result in different behavioral or physiological responses, depending on their concentration or when presented in combination. The modulation of chemical signals occurs via the elaboration of the number of exocrine glands that produce pheromones. Some species, such as ants, seem to be very articulate creatures, but their medium of communication is difficult for humans to study and appreciate because of our own olfactory, insensitivity and the technological difficulties in detecting and analyzing these pheromones.

Pheromones play numerous roles in the activities of insects. They may act as alarm substances, play a role in individual and group recognition, serve as attractants between sexes, mediate the

formation of aggregations, identify foraging trails, and be involved in caste determination. For example, pheromones involved in caste determination include the "queen substance" produced by queen honey bees. Aphids, which are particularly vulnerable to predators because of their gregarious habits and sedentary nature, secrete an alarm pheromone when attacked that causes nearby aphids to respond by moving away.

1. What does the passage mainly discuss?
(A) How insects use pheromones to communicate
(B) How pheromones are produced by insects
(C) Why analyzing insect pheromones is difficult
(D) The different uses of pheromones among various insect species

2. The word "serve" in line 1 is closest in meaning to
(A) improve
(B) function
(C) begin
(D) rely

3. The purpose of the second mention of "hormones" in line 4 is to point out
(A) chemical signals that are common among insects
(B) specific responses of various species to chemical signals
(C) similarities between two chemical substances
(D) how insects produce different chemical substances

4. The word "sole" in line 6 is closest in meaning to
(A) obvious
(B) best
(C) only
(D) final

5. The passage suggests that the speed at which communication through pheromones occurs is dependent on how quickly they
(A) lose their effectiveness
(B) evaporate in the air
(C) travel through the air
(D) are produced by the body

6. According to the passage , the meaning of a message communicated through a pheromone may vary when the
(A) chemical structure of the pheromone is changed
(B) pheromone is excreted while other pheromones are also being excreted
(C) exocrine glands do not produce the pheromone
(D) pheromone is released near certain specific organisms

7. The word "detecting" in line 23 is closest in meaning to

(A) controlling
(B) storing
(C) questioning
(D) finding

8. According to paragraph 2, which of the following has made the study of pheromones difficult?
(A) Pheromones cannot be easily reproduced in chemical laboratories.
(B) Existing technology cannot fully explore the properties of pheromones.
(C) Pheromones are highly volatile.
(D) Pheromone signals are constantly changing.

9. The word "They" in line 24 refers to
(A) pheromones
(B) roles
(C) activities
(D) insects

10. The word "sedentary" in line 29 is closest in meaning to
(A) inactive
(B) inefficient
(C) unchangeable
(D) unbalanced

11. Pheromone systems are relatively complex in insects that
(A) also communicate using sight and sound
(B) live underground
(C) prey on other insects
(D) live in organized groups

PASSAGE 96

The Homestead Act of 1862 gave heads of families or individuals aged twenty-one or older the right to own 160 acres of public land in the western United States after five years of residence and improvement. This law was intended to provide land for small farmers and to prevent land from being bought for resale at a profit or being owned by large landholders. An early amendment to the act even prevented husbands and wives from filing separate claims. The West, land reformers had assumed, would soon contain many 160-acre family farms.

They were doomed to disappointment. Most landless Americans were too poor to become farmers even when they could obtain land without cost. The expense of moving a family to the ever-receding frontier exceeded the means of many, and the cost of tools, draft animals, a wagon, a well, fencing, and of building the simplest house, might come to $1,000 — a formidable barrier. As for the industrial workers for whom the free land was supposed to provide a "safety valve," they had neither the skills nor the inclination to become farmers. Homesteaders usually came from

districts not far removed from frontier conditions. And despite the intent of the law, speculators often managed to obtain large tracts. They hired people to stake out claims, falsely swear that they had fulfilled the conditions laid down in the law for obtaining legal title, and then deed the land over to their employers.

Furthermore, 160 acres were not enough for raising livestock or for the kind of commercial agriculture that was developing west of the Mississippi. The national government made a feeble attempt to make larger holdings available to homesteaders by passing the Timber Culture Act of 1873, which permitted individuals to claim an additional 160 acres if they would agree to plant a quarter of it in trees within ten years. This law proved helpful to some farmers in the largely treeless states of Kansas, Nebraska, and the Dakotas. Nevertheless, fewer than 25 percent of the 245,000 who took up land under the Act obtained final title to the property.

1. Which aspect of the Homestead Act of 1862 does the passage mainly discuss?
(A) How it transformed the western United States into a place of small farms
(B) Why it was an improvement over previous attempts at land reform
(C) Why it did not achieve its aim to provide land for small farmers
(D) How it failed in the largely treeless states of Kansas, Nebraska, and the Dakotas

2. An amendment added to the Homestead Act of 1862 specified that
(A) five years of residence was required for landownership
(B) husbands and wives could not file separate claims
(C) the price of 160 acres of land was $1,000
(D) land could not be resold for a profit

3. The word "formidable" in line 12 is closest in meaning to
(A) obvious
(B) predictable
(C) difficult
(D) manageable

4. It can be inferred that the "safety valve" in line 13 refers to
(A) a new kind of machinery
(B) an alternative for urban workers
(C) an area in a factory
(D) a procedure designed to protect workers

5. The word "intent" in line 15 is closest in meaning to
(A) purpose
(B) power
(C) effect
(D) invention

6. According to the passage , why did the government pass the Timber Culture Act of 1873?
(A) to make larger tracts of land available to small farmers
(B) to settle Kansas, Nebraska, and the Dakotas

(C) to encourage land speculation west of the Mississippi
(D) to increase the variety of trees growing in the western states

7. The word "they" in line 23 refers to
(A) larger holdings
(B) individuals
(C) 160 acres
(D) trees

8. According to the passage , how many of the farmers who settled land under the Timber Culture Act of 1873 received final title to the property?
(A) fewer than 25%
(B) more than 160
(C) 10% per year
(D) 245,000

9. The passage mentions all of the following as reasons the Homestead Act of 1862 did not achieve its aims EXCEPT:
(A) Most landless Americans could not afford the necessary tools and provisions.
(B) Industrial workers lacked the necessary farming skills.
(C) The farms were too large for single families to operate successfully.
(D) Homesteaders usually came from areas relatively close to the frontier.

10. Which of the following can be inferred from the passage about the Timber Culture Act of 1873?
(A) It especially helped farmers with large holdings of land.
(B) It was most important to farmers living in states that had plenty of trees.
(C) The majority of farmers did not benefit significantly from it.
(D) The majority of farmers did not need the extra 160 acres it provided.
PASSAGE 97

The Moon, which has undergone a distinct and complex geological history, presents a striking appearance. The moon may be divided into two major terrains: the Maria (dark lowlands) and the Terrace (bright highlands). The contrast in the reflectivity (the capability of reflecting light) of these two terrains suggested to many early observers that the two terrains might have different compositions, and this supposition was confirmed by missions to the Moon such as Surveyor and Apollo. One of the most obvious differences between the terrains is the smoothness of the Maria in contrast to the roughness of the highlands. This roughness is mostly caused by the abundance of craters: the highlands are completely covered by large craters (greater than 40-50 km in diameter), while the craters of the Maria tend to be much smaller. It is now known that the vast majority of the Moon's craters were formed by the impact of solid bodies with the lunar surface.

Most of the near side of the Moon was thoroughly mapped and studied from telescopic pictures years before the age of space exploration. Earth-based telescopes can resolve objects as small as a few hundred meters on the lunar surface. Close observation of craters, combined with

the way the Moon diffusely reflects sunlight, led to the understanding that the Moon is covered by a surface layer, or regolith, that overlies the solid rock of the Moon. Telescopic images permitted the cataloging of a bewildering array of land forms. Craters were studied for clues to their origin; the large wispy marks were seen. Strange, sinuous features were observed in the Maria. Although various land forms were catalogued, the majority of astronomers' attention was fixed on craters and their origins.

Astronomers have known for a fairly long time that the shape of craters changes as they increase in size. Small craters with diameters of less than 10-15 km have relatively simple shapes. They have rim crests that are elevated above the surrounding terrain, smooth, bowl-shaped interiors, and depths that are about one-sixth their diameters. The complexity of shape increases for larger craters.

1. What does the passage mainly discuss?
(A) What astronomers learned from the Surveyor and Apollo space missions.
(B) Characteristics of the major terrains of the Moon.
(C) The origin of the Moon's craters.
(D) Techniques used to catalogue the Moon's land forms.

2. The word "undergone" in line 1 is closest in meaning to
(A) altered
(B) substituted
(C) experienced
(D) preserved

3. According to the passage , the Maria differ from the Terrace mainly in terms of
(A) age
(B) manner of creation
(C) size
(D) composition

4. The passage supports which of the following statements about the Surveyor and Apollo missions?
(A) They confirmed earlier theories about the Moon's surface.
(B) They revealed that previous ideas about the Moon's craters were incorrect.
(C) They were unable to provide detailed information about the Moon's surface.
(D) They were unable to identify how the Moon's craters were made.

5. The word "vast" in line 11 is closest in meaning to
(A) special
(B) known
(C) varied
(D) great

6. All of the following are true of the Maria EXCEPT:
(A) They have small craters.

(B) They have been analyzed by astronomers.
(C) They have a rough texture.
(D) They tend to be darker than the terrace.

7. All of the following terms are defined in the passage EXCEPT
(A) Moon (line 1)
(B) reflectivity (line 3)
(C) regolith (line 16)
(D) Maria (line 2)

8. The author mentions "wispy marks" in line 19 as an example of
(A) an aspect of the lunar surface discovered through lunar missions
(B) a characteristic of large craters
(C) a discovery made through the use of Earth-based telescopes
(D) features that astronomers observed to be common to the Earth and the Moon

9. According to the passage , lunar researchers have focused mostly on
(A) the possibility of finding water on the Moon
(B) the lunar regolith
(C) cataloging various land formations
(D) craters and their origins

10. The passage probably continues with a discussion of
(A) the reasons craters are difficult to study
(B) the different shapes small craters can have
(C) some features of large craters
(D) some difference in the ways small and large craters were formed

PASSAGE 98

Naturalists and casual observers alike have been struck by the special relationship between squirrels and acorns (the seeds of oak trees). Ecologists, though, cannot observe these energetic mammals scurrying up and down oak trees and eating and burying acorns without wondering about their complex relationship with trees. Are squirrels dispersers and planters of oak forests or pesky seed predators? The answer is not simple. Squirrels may devour many acorns, but by storing and failing to recover up to 74 percent of them as they do when seeds are abundant, these arboreal rodents can also aid regeneration and dispersal of the oaks.

Their destructive powers are well documented. According to one report, squirrels destroyed tens of thousands of fallen acorns from an oak stand on the University of Indiana campus. A professor there estimated that each of the large white oaks had produced between two and eight thousand acorns, but within weeks of seed maturity, hardly an intact acorn could be found among the fallen leaves.

Deer, turkey, wild pigs, and bears also feed heavily on acorns, but do not store them, and are

therefore of no benefit to the trees. Flying squirrels, chipmunks, and mice are also unlikely to promote tree dispersal, as they often store seeds in tree cavities and underground burrows. Only squirrels — whose behavior of caching (hiding) acorns below the leaf litter — often promote successful germination of acorns, and perhaps blue jays, important long-distance dispersers, seem to help oaks spread and reproduce.

Among squirrels, though, there is a particularly puzzling behavior pattern. Squirrels pry off the caps of acorns, bite through the shells to get at the nutritious inner kernels, and then discard them half-eaten. The ground under towering oaks is often littered with thousands of half-eaten acorns, each one only bitten from the top. Why would any animal waste so much time and energy and risk exposure to such predators as red-tail hawks only to leave a large part of each acorn uneaten? While research is not conclusive at this point, one thing that is certain is that squirrels do hide some of the uneaten portions, and these acorn halves, many of which contain the seeds, may later germinate.

1. What does the passage mainly discuss?
(A) The ecology of oak trees
(B) Factors that determine the feeding habits of Squirrels
(C) Various species of animals that promote the dispersal of tree seeds
(D) The relationship between squirrels and oak trees

2. The word "they" in line 7 refers to
(A) oak forests
(B) acorns
(C) squirrels
(D) predators

3. According to the passage , what do squirrels do when large quantities of acorns are available?
(A) They do not store acorns.
(B) They eat more than 74 percent of available acorns.
(C) They do not retrieve all the acorns that they have stored.
(D) They hide acorns in tree cavities.

4. The word "estimated" in line 11 is closest in meaning to
(A) commented
(B) judged
(C) observed
(D) discovered

5. Why does the author mention "the University of Indiana campus" in line 10 -11?
(A) to provide evidence that intact acorns are hard to find under oak trees
(B) to indicate a place where squirrels can aid seed dispersal of oaks
(C) to argue in favor of additional studies concerning the destructive force of squirrels
(D) to support the claim that squirrels can do great damage to oak stands

6. It can be inferred from paragraph 3 that chipmunks do not aid in the dispersal of oak trees

because
(A) they store their acorns where they cannot germinate
(B) they consume most of their stored acorns
(C) their stored acorns are located and consumed by other species
(D) they cannot travel the long distance required for dispersal

7. According to the passage , which of the following do squirrels and blue jays have in common?
(A) They travel long distances to obtain acorns.
(B) They promote the reproduction of oak trees.
(C) They bury acorns under fallen leaves.
(D) They store large quantities of acorns.

8. The phrase "pry off" in line 21 is closest in meaning to
(A) swallow
(B) remove
(C) squeeze
(D) locate

9. The word "littered" in line 22 is closest in meaning to
(A) covered
(B) displayed
(C) fertilized
(D) planted

10. According to the passage , scientists cannot explain which of the following aspects of squirrel behavior?
(A) Where squirrels store their acorn caches
(B) Why squirrels prefer acorns over other seeds
(C) Why squirrels eat only a portion of each acorn they retrieve
(D) Why squirrels prefer acorns from a particular species of oak trees

PASSAGE 99

Scientists have discovered that for the last 160,000 years, at least, there has been a consistent relationship between the amount of carbon dioxide in the air and the average temperature of the planet. The importance of carbon dioxide in regulating the Earth's temperature was confirmed by scientists working in eastern Antarctica. Drilling down into a glacier, they extracted a mile-long cylinder of ice from the hole. The glacier had formed as layer upon layer of snow accumulated year after year. Thus drilling into the ice was tantamount to drilling back through time.

The deepest sections of the core are composed of water that fell as snow 160,000 years ago. Scientists in Grenoble, France, fractured portions of the core and measured the composition of ancient air released from bubbles in the ice. Instruments were used to measure the ratio of certain isotopes in the frozen water to get an idea of the prevailing atmospheric temperature at the time

when that particular bit of water became locked in the glacier.

The result is a remarkable unbroken record of temperature and of atmospheric levels of carbon dioxide. Almost every time the chill of an ice age descended on the planet, carbon dioxide levels dropped. When the global temperature dropped 9℉ (5 ℃), carbon dioxide levels dropped to 190 parts per million or so. Generally, as each ice age ended and the Earth basked in a warm interglacial period, carbon dioxide levels were around 280 parts per million. Through the 160,000 years of that ice record, the level of carbon dioxide in the atmosphere fluctuated between 190 and 280 parts per million, but never rose much higher-until the Industrial Revolution beginning in the eighteenth century and continuing today.

There is indirect evidence that the link between carbon dioxide levels and global temperature change goes back much further than the glacial record. Carbon dioxide levels may have been much greater than the current concentration during the Carboniferous period, 360 to 285 million years ago. The period was named for a profusion of plant life whose buried remains produced a large fraction of the coal deposits that are being brought to the surface and burned today.

1. Which of the following does the passage mainly discuss?
(A) Chemical causes of ice ages
(B) Techniques for studying ancient layers of ice in glaciers
(C) Evidence of a relationship between levels of carbon dioxide and global temperature
(D) Effects of plant life on carbon dioxide levels in the atmosphere

2. The word "accumulated" in line 6 is closest in meaning to.
(A) spread out
(B) changed
(C) became denser
(D) built up

3. According to the passage , the drilling of the glacier in eastern Antarctica was important because it
(A) allowed scientists to experiment with new drilling techniques
(B) permitted the study of surface temperatures in an ice-covered region of Earth
(C) provided insight about climate conditions in earlier periods
(D) confirmed earlier findings about how glaciers are formed

4. The phrase "tantamount to" in line 7 is closest in meaning to
(A) complementary to
(B) practically the same as
(C) especially well suited to
(D) unlikely to be confused with

5. According to the passage , Grenoble, France, is the place where
(A) instruments were developed for measuring certain chemical elements
(B) scientists first recorded atmospheric levels of carbon dioxide
(C) scientists studied the contents of an ice core from Antarctica
(D) the relationship between carbon dioxide and temperature was discovered

6. According to the passage , scientists used isotopes from the water of the ice core to determine which of following?
(A) The amount of air that had bubbled to the surface since the ice had formed
(B) The temperature of the atmosphere when the ice was formed
(C) The date at which water had become locked in the glacier
(D) The rate at which water had been frozen in the glacier

7. The word "remarkable" in line 14 is closest in meaning to
(A) genuine
(B) permanent
(C) extraordinary
(D) continuous

8. The word "link" in line 23 is closest in meaning to
(A) tension
(B) connection
(C) attraction
(D) distance

9. The passage implies that the warmest temperatures among the periods mentioned occurred
(A) in the early eighteenth century
(B) 160,000 years ago
(C) at the end of each ice age
(D) between 360 and 285 million years ago

10. According to the passage , the Carboniferous period was characterized by
(A) a reduction in the number of coal deposits
(B) the burning of a large amount of coal
(C) an abundance of plants
(D) an accelerated rate of glacier formation

11. The passage explains the origin of which of the following terms?
(A) glacier (line 5)
(B) isotopes (line 11)
(C) Industrial Revolution (line 21)
(D) Carboniferous period (lines 26)
PASSAGE 100

Of all modern instruments, the violin is apparently one of the simplest. It consists in essence of a hollow, varnished wooden sound box, or resonator, and a long neck, covered with a fingerboard, along which four strings are stretched at high tension. The beauty of design, shape, and decoration is no accident: the proportions of the instrument are determined almost entirely by acoustical considerations. Its simplicity of appearance is deceptive. About 70 parts are involved in the

construction of a violin. Its tone and its outstanding range of expressiveness make it an ideal solo instrument. No less important, however, is its role as an orchestral and chamber instrument. In combination with the larger and deeper-sounding members of the same family, the violins form the nucleus of the modern symphony orchestra.

The violin has been in existence since about 1550. Its importance as an instrument in its own right dates from the early 1600's, when it first became standard in Italian opera orchestras. Its stature as an orchestral instrument was raised further when in 1626 Louis XIII of France established at his court the orchestra known as Les vingt-quatre violins du Roy (The King's 24 Violins), which was to become widely famous later in the century.

In its early history, the violin had a dull and rather quiet tone resulting from the fact that the strings were thick and were attached to the body of the instrument very loosely. During the eighteenth and nineteenth century, exciting technical changes were inspired by such composer-violinists as Vivaldi and Tartini. Their instrumental compositions demanded a fuller, clearer, and more brilliant tone that was produced by using thinner strings and a far higher string tension. Small changes had to be made to the violin's internal structure and to the fingerboard so that they could withstand the extra strain. Accordingly, a higher standard of performance was achieved, in terms of both facility and interpretation. Left-hand technique was considerably elaborated, and new fingering patterns on the fingerboard were developed for very high notes.

1. The word "standard" in line 12 is closest in meaning to
(A) practical
(B) customary
(C) possible
(D) unusual

2. "The King's 24 Violins" is mentioned in line 15 to illustrate
(A) how the violin became a renowned instrument
(B) the competition in the 1600's between French and Italian orchestras
(C) the superiority of French violins
(D) why the violin was considered the only instrument suitable to be played by royalty

3. What is the main idea presented in paragraph 3?
(A) The violin has been modified to fit its evolving musical functions.
(B) The violin is probably the best known and most widely distributed musical instrument in the world.
(C) The violin had reached the height of its popularity by the middle of the eighteenth century.
(D) The technique of playing the violin has remained essentially the same since the 1600's.

4. The author mentions Vivaldi and Tartini in line 19 as examples of composers whose music
(A) inspired more people to play the violin
(B) had to be adapted to the violin
(C) demanded more sophisticated violins
(D) could be played only by their students

5. The word "they" in line 22 refers to

(A) Civaldi and Tartini
(B) thinner strings and a higher string tension
(C) small changes
(D) internal structure and fingerboard

6. The word "strain" in line 22 is closest in meaning to
(A) struggle
(B) strength
(C) strategy
(D) stress

7. The word "Accordingly" in line 23 is closest in meaning to
(A) However
(B) Consequently
(C) Nevertheless
(D) Ultimately

8. According to the passage , early violins were different from modern violins in that early violins
(A) were heavier
(B) broke down more easily
(C) produced softer tones
(D) were easier to play

9. According to the passage , which of the following contributes to a dull sound being produced by a violin?
(A) A long fingerboard
(B) A small body
(C) High string tension
(D) Thick strings

10. Which of the following terms is defined in the passage ?
(A) resonator (line 2)
(B) solo (line 7)
(C) left-hand technique (line 25)
(D) fingering patterns (lines 24-25)

11. All of the following are mentioned in the passage as contributing to the ability to play modern violin music EXCEPT
(A) more complicated techniques for the left hand
(B) different ways to use the fingers to play very high notes
(C) use of rare wood for the fingerboard and neck
(D) minor alterations to the structure of the instrumentANSWER KEYS

PASSAGE 1 BBACC DBCDA B

PASSAGE 2 AACCD CABD

PASSAGE 3 BDCBB CBDAD CA

PASSAGE 4 BBDBD CACA

PASSAGE 5 DACCB DBBAD

PASSAGE 6 DBDBC ACABD

PASSAGE 7 BCDCD CBABB

PASSAGE 8 DDCCB CADA

PASSAGE 9 CBDBD BBA

PASSAGE 10 ACDCA BCDBA

PASSAGE 11 CAABD CADD

PASSAGE 12 CDACB AACCB

PASSAGE 13 AACAC CAD

PASSAGE 14 DCABC DABAC DBA

PASSAGE 15 DABDC CDCBD AB

PASSAGE 16 DBBCA DCDCDA

PASSAGE 17 DAACA DCBCD CA

PASSAGE 18 BBBDB CCCDA

PASSAGE 19 BBDDC DCBCA C

PASSAGE 20 BCACD DCBAA

PASSAGE 21 BDCAA BABD

PASSAGE 22 CDBBD ABDDA

PASSAGE 23 BBDBA ACADC DAC

PASSAGE 24 BCBBC ADABA A

PASSAGE 25 CABBB DDABC A

PASSAGE 26 ADDBC DACBA

PASSAGE 27 DADBC BBDBA D

PASSAGE 28 ACBBA ABCBA

PASSAGE 29 ACBDC ABDB

PASSAGE 30 DABCC CBCB

PASSAGE 31 BDCDD ACBBB C

PASSAGE 32 CBDBA DACBD

PASSAGE 33 ADADC ABDBB C

PASSAGE 34 DCADB CDBBA B

PASSAGE 35 CABCA BCDBA

PASSAGE 36 BADCC BACBD C

PASSAGE 37 BBADA BBCCD

PASSAGE 38 BDBDB DAACD B

PASSAGE 39 CDAAC BCABB D

PASSAGE 40 BDDCC ABADCB

PASSAGE 41 CBBCD CDAD

PASSAGE 42 CBDDA BCCAC D

PASSAGE 43 BBCAA D

PASSAGE 44 CBBCA D

PASSAGE 45 BCADA DD

PASSAGE 46 ACBDB ABC

PASSAGE 47 DCBAD AC

PASSAGE 48 DCBAD CCADD

PASSAGE 49 BCCBA DBCBD B

PASSAGE 50 DCCAC BBCAD

PASSAGE 51 BCADB DADD

PASSAGE 52 AABDA ADDBD

PASSAGE 53 ACBDA ADBD

PASSAGE 54 ACCBB DACD

PASSAGE 55 ABCCB CABD

PASSAGE 56 BDBCC ACAA

PASSAGE 57 ABCCC DDAA

PASSAGE 58 BABDB CDADC

PASSAGE 59 ACBBA ACDB

PASSAGE 60 DACDB BACCA

PASSAGE 61 BCADD DCA

PASSAGE 62 CABDC ABCBD

PASSAGE 63 CBDCB ABDCB

PASSAGE 64 DCABC AACAD

PASSAGE 65 BBADB DACCB

PASSAGE 66 CABCD AAABD B

PASSAGE 67 BDACB DADCD

PASSAGE 68 BAADC CDADB C

PASSAGE 69 BABCD ADDBB

PASSAGE 70 BCDCB ADAD
PASSAGE 71 DBCAD CDCDA B

PASSAGE 72 BCCAD DCACA

PASSAGE 73 CABCB CBDA

PASSAGE 74 CBDAB AADBD

PASSAGE 75 ADABC CCDCC

PASSAGE 76 BACCD BBBC

PASSAGE 77 BCDCD AADAB C

PASSAGE 78 BDAAD DCCBD

PASSAGE 79 BDBDC AACDB C

PASSAGE 80 BCADB ADABA A
PASSAGE 81 DABDD ACBDD AB

PASSAGE 82 CBADD CCABD

PASSAGE 83 CAADC BCBDD C

PASSAGE 84 CCAAA BDDDB

PASSAGE 85 CBADC CDCCB

PASSAGE 86 BBDCC CADBD A

PASSAGE 87 ABBDB DCABD

PASSAGE 88 ADBCA BBCD

PASSAGE 89 CADAD ACBD

PASSAGE 90 CCADB CACC
PASSAGE 91 CBBAA DCACC

PASSAGE 92 ABDAC DCCCC

PASSAGE 93 CAACB DCBCA D

PASSAGE 94 DBCAB CBBCA D

PASSAGE 95 ABCCB ADBAAD

PASSAGE 96 CBCDA ABACC

PASSAGE 97 BCDAD CACDC

PASSAGE 98 DCCBD DBBAC

PASSAGE 99 CDCBC BCBAC D

PASSAGE 100 BAACD DBCAA C