

新托福突破口（1-24）阅读全集



A horizontal row of fifteen empty square boxes, each outlined in red, intended for children to draw or color in.

新托福突破口（1-24）阅读全集.....	1
TPO 01	5
GROUNDWATER.....	5
THE ORIGINS OF THEATER.....	8
TIMBERLINE VEGETATION ON MOUNTAINS	13
TPO 02	17
THE ORIGINS OF CETACEANS	17
DESERT FORMATION.....	20
EARLY CINEM.....	24
TPO 03	27
ARCHITECTURE	27
Depletion of the Ogallala Aquifer.....	31
The Long-Term Stability of Ecosystems	36
TPO 04	39
Deer Populations of the Puget Sound.....	39
Cave Art in Europe.....	44
Petroleum Resources.....	48
TPO 05	52
MINERALS AND PLANTS.....	52
THE ORIGIN OF THE PACIFIC ISLAND PEOPLE.....	56
THE CAMBRIAN EXPLOSION	61
TPO 06	65
Powering the Industrial Revolution.....	65
William Smith	69
Infantile Amnesia	73
TPO 07	77
The Geologic History of the Mediterranean	77
Ancient Rome and Greece.....	81
Agriculture, Iron, and the Bantu Peoples	85
TPO 08	89
THE RISE OF TEOTIHUACAN.....	89
EXTINCTION OF THE DINOSAURS	93
RUNNING WATER ON MARS	97
TPO 09	101
Colonizing the Americas via the Northwest Coast	101
REFLECTION IN TEACHING.....	105
THE ARRIVAL OF PLANT LIFE IN HAWAII.....	109
TPO 10	113
Chinese Pottery	113
Variations in the Climate.....	117
Seventeenth-Century European Economic Growth	121
TPO 11	125

Ancient Egyptian Sculpture	125
Orientation and Navigation	129
Begging by Nestlings	133
TPO 12	137
Which Hand Did They Use?	137
Transition to Sound in Film	141
Water in the Desert	145
TPO 13	149
Types of Social Groups	149
Biological Clocks	152
Methods of Studying Infant Perception	156
TPO 14	160
Children and Advertising	160
Maya Water Problems	165
Pastoralism in Ancient Inner Eurasia	169
TPO 15	173
A Warm-Blooded Turtle	173
Mass Extinctions	177
Glacier Formation	182
TPO 16	186
Trade and the Ancient Middle East	186
Development of the Periodic Table	191
Planets in Our Solar System	196
TPO 17	199
Europe's Early Sea Trade with Asia	199
Animal Signals in the Rain Forest	203
Symbiotic Relationships	206
TPO 18	210
Industrialization in the Netherlands and Scandinavia	210
The mystery of yawning	214
Lightning	218
TPO 19	222
THE ROMAN ARMY'S IMPACT ON BRITAIN	222
SUCCESSION, CLIMAX, AND ECOSYSTEMS	226
Discovering the Ice Ages	230
TPO 20	234
Westward migration	234
Early settlements in southwest Asia	237
Fossil preservation	241
TPO 21	244
Geothermal Energy	244
The Origins of Agriculture	249
Autobiographical memory	253
TPO22	257

Spartina.....	257
The Birth of Photography.....	261
The Allende Meteorite	265
TPO 23	269
Urban Climates.....	269
Seventeenth-Century Dutch Agriculture.....	272
Rock Art of the Australia Aborigines	276
TPO 24	280
Lake Water	280
Breathing During Sleep.....	284
Moving into Pueblos	287

TPO 01

Paragraph 1:

1. Which of the following can be inferred from paragraph 1 about the ground that we walk on?
 - It cannot hold rainwater for long periods of time.
 - It prevents most groundwater from circulating.
 - It has the capacity to store large amounts of water.
 - It absorbs most of the water it contains from rivers.
2. The word “incredible” in the passage is closest in meaning to
 - Confusing
 - Comforting
 - Unbelievable
 - Interesting

Paragraph 2:

3. The word “out of sight” in the passage is closest in meaning to
 - Far away
 - Hidden
 - Partly visible
 - Discovered
4. According to paragraph 2, where is groundwater usually found?
 - Inside pieces of sand and gravel
 - On top of beds of rock
 - In fast rivers that are flowing beneath the soil
 - In spaces between pieces of sediment
5. The phrase “glacial outwash” in the passage refers to
 - Fast rivers
 - Glaciers
 - The huge volumes of water created by glacial melting

GROUNDWATER

Groundwater is the word used to describe water that saturates the ground, filling all the available spaces. By far the most abundant type of groundwater is meteoric water; this is the groundwater that circulates as part of the water cycle. Ordinary meteoric water is water that has soaked into the ground from the surface, from precipitation (rain and snow) and from lakes and streams. There it remains, sometimes for long periods, before emerging at the surface again. At first thought it seems incredible that there can be enough space in the “solid” ground underfoot to hold all this water.

The necessary space is there, however, in many forms. The commonest spaces are those among the particles—sand grains and tiny pebbles—of loose, unconsolidated sand and gravel. Beds of this material, out of sight beneath the soil, are common. They are found wherever fast rivers carrying loads of coarse sediment once flowed. For example, as the great ice sheets that covered North America during the last ice age steadily melted away, huge volumes of water flowed from them. The water was always laden with pebbles, gravel, and sand, known as glacial outwash, that was deposited as the flow slowed down.

The same thing happens to this day, though on a smaller scale, wherever a sediment-laden river or stream emerges from a mountain valley onto relatively flat land, dropping its load as the current slows: the water usually spreads out fanwise,

- The particles carried in water from melting glaciers.

Paragraph 3:

6. All of the following are mentioned in paragraph 3 as places that sediment-laden rivers can deposit their sediments EXCEPT

- A mountain valley
- Flat land
- A lake floor
- The seafloor

depositing the sediment in the form of a smooth, fan-shaped slope. Sediments are also dropped where a river slows on entering a lake or the sea, the deposited sediments are on a lake floor or the seafloor at first, but will be located inland at some future date, when the sea level falls or the land rises; such beds are sometimes thousands of meters thick.

Paragraph 4:

7. The word “overlie” in the passage is closest in meaning to

- Cover
- Change
- Separate
- Surround

In lowland country almost any spot on the ground may overlie what was once the bed of a river that has since become buried by soil; if they are now below the water's upper surface (the water table), the gravels and sands of the former riverbed, and its sandbars, will be saturated with groundwater.

Paragraph 5:

8. The phrase “so much for” in the passage is closest in meaning to

- That is enough about
- Now let us turn to
- Of greater concern are
- This is related to

So much for unconsolidated sediments. Consolidated (or cemented) sediments, too, contain millions of minute water-holding pores. This is because the gaps among the original grains are often not totally plugged with cementing chemicals; also, parts of the original grains may become dissolved by percolating groundwater, either while consolidation is taking place or at any time afterwards. The result is that sandstone, for example, can be as porous as the loose sand from which it was formed.

9. The word “plugged” in the passage is closest in meaning to

- Washed
- Dragged
- Filled up
- Soaked through

Thus a proportion of the total volume of any sediment, loose or cemented, consists of empty space. Most crystalline rocks are much more solid; a common exception is basalt, a form of solidified volcanic lava, which is sometimes full of tiny bubbles that make it very porous.

10. According to paragraphs 6 and 7, why is basalt unlike most crystalline forms of rock?

- It is unusually solid
- It often has high porosity.

The proportion of empty space in a rock is known as its porosity. But note that porosity is not the same as permeability, which measures the ease with which water

- It has a low proportion of empty space.
- It is highly permeable.

11. What is the main purpose of paragraph 7?

- To explain why water can flow through rock
- To emphasize the large amount of empty space in all rock
- To point out that a rock cannot be both porous and permeable
- To distinguish between two related properties of rock

can flow through a material; this depends on the sizes of the individual cavities and the crevices linking them.

Much of the water in a sample of water-saturated sediment or rock will drain from it if the sample is put in a suitable dry place.■ But some will remain, clinging to all solid surfaces.■ It is held there by the force of surface tension without which water would drain instantly from any wet surface, leaving it totally dry.■ The total volume of water in the saturated sample must therefore be thought of as consisting of water that can, and water that cannot, drain away.■

The relative amount of these two kinds of water varies greatly from one kind of rock or sediment to another, even though their porosities may be the same. What happens depends on pore size. If the pores are large, the water in them will exist as drops too heavy for surface tension to hold, and it will drain away; but if the pores are small enough, the water in them will exist as thin films, too light to overcome the force of surface tension holding them in place; then the water will be firmly held.

Paragraph 9:

12. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○ Surface tension is not strong enough to retain drops of water in rocks with large pores but it strong enough to hold on to thin films of water in rocks with small pores.

○ Water in rocks is held in place by large pores and drains away from small size pores through surface tension.

○ Small pores and large pores both interact with surface tension to determine whether a rock will hold water as heavy drops or as a thin film.

○ If the force of surface tension is too weak to hold water in place as heavy drops, the water will continue to be held firmly in place as a thin film when large pores exist.

Much of the water in a sample of water-saturated sediment or rock will drain from it if the sample is put in a suitable dry place.■ But some will remain, clinging to all solid surfaces.■ It is held there by the force of surface tension without which water would drain instantly from any wet surface, leaving it totally dry.■ The total volume of water in the saturated sample must therefore

Paragraph 8:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

What, then, determines what proportion of the water stays and what proportion drains away?

Where would the sentence best fit? Click on a square to add the sentence to the passage.

一想到新托福，就想到咱老无。

14. Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. *This question is worth 2 points.*

Much of the ground is actually saturated with water.

-
-
-

Answer choices

- Sediments that hold water were spread by glaciers and are still spread by rivers and streams.
- Water is stored underground in beds of loose sand and gravel or in cemented sediment.
- The size of a saturated rock's pores determines how much water it will retain when the rock is put in a dry place.
- Groundwater often remains underground for a long time before it emerges again.
- Like sandstone, basalt is a crystalline rock that is very porous.
- Beds of unconsolidated sediments are typically located at inland sites that were once underwater.

be thought of as consisting of water that can, and water that cannot, drain away. [■]

Paragraph 1:

1. The word “championed” in the passage

THE ORIGINS OF THEATER

In seeking to describe the origins of theater, one must rely primarily on

is closest in meaning to

- Changed
- Debated
- Created
- Supported

2. The word “attributes” in the passage is closest in meaning to

- Ascribes
- Leaves
- Limits
- Contrasts

3. According to paragraph 1, theories of the origins of theater

- Are mainly hypothetical
- Are well supported by factual evidence
- Have rarely been agreed upon by anthropologists
- Were expressed in the early stages of theater's development

4. According to paragraph 1, why did some societies develop and repeat ceremonial actions?

- To establish a positive connection between the members of the society
- To help society members better understand the forces controlling their food supply
- To distinguish their beliefs from those of other societies
- To increase the society's prosperity

Paragraph 2:

5. The word “this” in the passage refers to

- The acting out of rites
- The divorce of ritual performers from the rest of society
- The separation of myths from rites
- The celebration of supernatural forces

6. The word “autonomous” in the passage is closest in meaning to

- Artistic

speculation, since there is little concrete evidence on which to draw. The most widely accepted theory, championed by anthropologists in the late nineteenth and early twentieth centuries, envisions theater as emerging out of myth and ritual. The process perceived by these anthropologists may be summarized briefly. During the early stages of its development, a society becomes aware of forces that appear to influence or control its food supply and well-being. Having little understanding of natural causes, it attributes both desirable and undesirable occurrences to supernatural or magical forces, and it searches for means to win the favor of these forces. Perceiving an apparent connection between certain actions performed by the group and the result it desires, the group repeats, refines and formalizes those actions into fixed ceremonies, or rituals.

Stories (myths) may then grow up around a ritual. Frequently the myths include representatives of those supernatural forces that the rites celebrate or hope to influence. Performers may wear costumes and masks to represent the mythical characters or supernatural forces in the rituals or in accompanying celebrations. As a people becomes more sophisticated, its conceptions of supernatural forces and causal relationships may change. As a result, it may abandon or modify some rites. But the myths that have grown up around the rites may continue as part of the group's oral tradition and may even come to be acted out under conditions divorced from these rites. When this occurs, the first step has been taken toward theater as an autonomous activity, and thereafter entertainment and

- Important
- Independent
- Established

7. According to paragraph 2, what may cause societies to abandon certain rites?

- Emphasizing theater as entertainment
- Developing a new understanding of why events occur.
- Finding a more sophisticated way of representing mythical characters
- Moving from a primarily oral tradition to a more written tradition

aesthetic values may gradually replace the former mystical and socially efficacious concerns.

■ Although origin in ritual has long been the most popular, it is by no means the only theory about how the theater came into being. ■ Storytelling has been proposed as one alternative. ■ Under this theory, relating and listening to stories are seen as fundamental human pleasures. ■ Thus, the recalling of an event (a hunt, battle, or other feat) is elaborated through the narrator's pantomime and impersonation and eventually through each role being assumed by a different person.

A closely related theory sees theater as evolving out of dances that are primarily pantomimic, rhythmical or gymnastic, or from imitations of animal noises and sounds. Admiration for the performer's skill, virtuosity, and grace are seen as motivation for elaborating the activities into fully realized theatrical performances.

In addition to exploring the possible antecedents of theater, scholars have also theorized about the motives that led people to develop theater. Why did theater develop, and why was it valued after it ceased to fulfill the function of ritual? Most answers fall back on the theories about the human mind and basic human needs. One, set forth by Aristotle in the fourth century B.C., sees humans as naturally imitative—as taking pleasure in imitating persons, things, and actions and in seeing such imitations. Another, advanced in the twentieth century, suggests that humans have a gift for fantasy, through which they seek to

Paragraph 5:

8. All of following are mentioned in paragraph 5 as possible reasons that led societies to develop theater EXCEPT:

- Theater allows people to face that they are afraid of.
- Theater gives an opportunity to imagine a better reality.
- Theater is a way to enjoy imitating other people.

- Theater provides people the opportunity to better understand the human mind.

9. Which of the following best describes the organization of paragraph 5?

- The author presents two theories for a historical phenomenon.
- The author argues against theories expressed earlier in the passage.
- The author argues for replacing older theories with a new one.
- The author points out problems with two popular theories.

Paragraph 6:

10. The word “penchant” in the passage is closest in meaning to

- Compromise
- Inclination
- Tradition
- Respect

11. Why does the author mention “comedy”?

- To give an example of early types of theater
- To explain how theater helps a society respond to threats to its welfare
- To help explain why detachment is needed for the development of theater
- To show how theatrical performers become detached from other members of society.

12. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

reshape reality into more satisfying forms than those encountered in daily life. Thus, fantasy or fiction (of which drama is one form) permits people to objectify their anxieties and fears, confront them, and fulfill their hopes in fiction if not fact. The theater, then, is one tool whereby people define and understand their world or escape from unpleasant realities.

But neither the human imitative instinct nor a penchant for fantasy by itself leads to an autonomous theater. Therefore, additional explanations are needed. One necessary condition seems to be a somewhat detached view of human problems. For example, one sign of this condition is the appearance of the comic vision, since comedy requires sufficient detachment to view some deviations from social norms as ridiculous rather than as serious threats to the welfare of the entire group. Another condition that contributes to the development of autonomous theater is the emergence of the aesthetic sense. For example, some early societies ceased to consider certain rites essential to their well-being and abandoned them, nevertheless, they retained as parts of their oral tradition the myths that had grown up around the rites and admired them for their artistic qualities rather than for their religious usefulness.

○A society's rites were more likely to be retained in the oral tradition if its myths were admired for artistic qualities.

○The artistic quality of a myth was sometimes an essential reason for a society to abandon it from the oral tradition.

○Some early societies stopped using myths in their religious practices when rites ceased to be seen as useful for social well-being.

○Myths sometimes survived in a society's tradition because of their artistic qualities even after they were no longer deemed religiously beneficial.

Paragraph 3:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

To enhance their listener's enjoyment, storytellers continually make their stores more engaging and memorable.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

14.

Anthropologists have developed many theories to help understand why and how theater originated.

-
-
-

Answer choices

○The presence of theater in almost all societies is thought to have occurred because early story tellers traveled to different groups to tell their stores.

○Many theorists believe that theater arises when societies act out myths to preserve social well-being.

○The more sophisticated societies became, the better they could influence desirable occurrences through ritualized theater.

○Some theories of theater development focus on how theater was used by group leaders

■ Although origin in ritual has long been the most popular, it is by no means the only theory about how the theater came into being. ■ Storytelling has been proposed as one alternative. ■ Under this theory, relating and listening to stories are seen as fundamental human pleasures. ■ Thus, the recalling of an event (a hunt, battle, or other feat) is elaborated through the narrator's pantomime and impersonation and eventually through each role being assumed by a different person.

to group leaders govern other members of society.

○Theater may have come from pleasure humans receive from storytelling and moving rhythmically.

○The human capacities for imitation and fantasy are considered possible reasons why societies develop theater.

=====

=====

Paragraph 1:

1. The word “dramatic” in the passage is closest in meaning to

- Gradual
- Complex
- Visible
- Striking

2. Where is the lower timberline mentioned in paragraph 1 likely to be found?

- In an area that has little water
- In an area that has little sunlight
- Above a transition area
- On a mountain that has an upper timberline.

3. Which of the following can be inferred from paragraph 1 about both the upper and lower timberlines?

- Both are treeless zones
- Both mark forest boundaries.
- Both are surrounded by desert areas.
- Both suffer from a lack of moisture.

Paragraph 2:

4. Paragraph 2 supports which of the following statements about deciduous trees?

- They cannot grow in cold climates.
- They do not exist at the upper timberline.
- They are less likely than evergreens to survive at the upper timberline.
- They do not require as much moisture as

TIMBERLINE VEGETATION ON MOUNTAINS

The transition from forest to treeless tundra on a mountain slope is often a dramatic one. Within a vertical distance of just a few tens of meters, trees disappear as a life-form and are replaced by low shrubs, herbs, and grasses. This rapid zone of transition is called the upper timberline or tree line. In many semiarid areas there is also a lower timberline where the forest passes into steppe or desert at its lower edge, usually because of a lack of moisture.

The upper timberline, like the snow line, is highest in the tropics and lowest in the Polar Regions. It ranges from sea level in the Polar Regions to 4,500 meters in the dry subtropics and 3,500-4,500 meters in the moist tropics. Timberline trees are normally evergreens, suggesting that these have some advantage over deciduous trees (those that lose their leaves) in the extreme environments of the upper timberline. There are some areas, however, where broadleaf deciduous trees form the timberline. Species of birch, for example, may occur at the timberline in parts of the Himalayas.

evergreens do.

一想到新托福，就想到咱老无。

Paragraph 3:

5. The word attain in the passage is closest in meaning to

- require
- resist
- achieve
- endure

6. The word they in the passage refers to

- valleys
- trees
- heights
- ridges

7. The word prone in the passage is closest in meaning to

- adapted
- likely
- difficult
- resistant

8. According to paragraph 3, which of the following is true of trees in the middle and upper latitudes?

- Tree growth is negatively affected by the snow cover in valleys.
- Tree growth is greater in valleys than on ridges.
- Tree growth on ridges is not affected by high-velocity winds.
- Tree growth lasts longer in those latitudes than it does in the tropics.

Paragraph 4:

9. Which of the sentences below best express the essential information in the highlighted sentence in the passage? In correct choices change the meaning in important ways or leave out essential information.

Because of their deformed shapes at high altitudes, trees are not likely to be seriously harmed by the strong winds typical of those

At the upper timberline the trees begin to become twisted and deformed. This is particularly true for trees in the middle and upper latitudes, which tend to attain greater heights on ridges, whereas in the tropics the trees reach their greater heights in the valleys. This is because middle- and upper- latitude timberlines are strongly influenced by the duration and depth of the snow cover. As the snow is deeper and lasts longer in the valleys, trees tend to attain greater heights on the ridges, even though they are more exposed to high-velocity winds and poor, thin soils there. In the tropics, the valleys appear to be more favorable because they are less prone to dry out, they have less frost, and they have deeper soils.

There is still no universally agreed-on explanation for why there should be such a dramatic cessation of tree growth at the upper timberline. Various environmental factors may play a role. Too much snow, for example, can smother trees, and avalanches and snow creep can damage or destroy them. Late-lying snow reduces the effective growing season to the point where seedlings cannot establish themselves. Wind velocity also increases with altitude and may cause serious stress for trees, as is made evident by the deformed shapes at high altitudes. Some scientists have proposed that the presence of increasing levels of ultraviolet light with elevation may play a role, while browsing and grazing animals like the ibex may be another contributing factor. Probably the most important environmental factor is temperature, for if the growing season is too short and temperatures are too low, tree shoots and

altitudes.

○As altitude increases, the velocity of winds increase, leading to a serious decrease in the number of trees found at high altitudes.

○The deformed shapes of trees at high altitudes show that wind velocity, which increase with altitude, can cause serious hardship for trees.

○Increased wind velocity at high altitudes deforms the shapes of trees, and this may cause serious stress for trees.

10. In paragraph 4, what is the author's main purpose in the discussion of the dramatic cessation of tree growth at the upper timberline?

○To argue that none of several environment factors that are believed to contribute to that phenomenon do in fact play a role in causing it.

○To argue in support of one particular explanation of that phenomenon against several competing explanations.

○To explain why the primary environmental factor responsible for that phenomenon has not yet been identified.

○To present several environmental factors that may contribute to a satisfactory explanation of that phenomenon.

Paragraph 6:

11. According to paragraph 6, all of the following statements are true of plants in the alpine zone EXCEPT:

○Because they are low, they are less exposed to strong winds.

○Because they are low, the winter snow cover gives them more protection from the extreme cold.

○In the equatorial mountains, they tend to be lower than in mountains elsewhere.

○Their low growth form keeps them closer to the ground, where there is more heat than further up.

Paragraph 5:

12. Look at the four squares [■] that

buds cannot mature sufficiently to survive the winter months.

Above the tree line there is a zone that is generally called alpine tundra.

■ Immediately adjacent to the timberline, the tundra consists of a fairly complete cover of low-lying shrubs, herbs, and grasses, while higher up the number and diversity of species decrease until there is much bare ground with occasional mosses and lichens and some prostrate cushion plants. ■ Some plants can even survive in favorable microhabitats above the snow line. The highest plants in the world occur at around 6,100 meters on Makalu in the Himalayas. ■ At this great height, rocks, warmed by the sun, melt small snowdrifts. ■

The most striking characteristic of the plants of the alpine zone is their low growth form. This enables them to avoid the worst rigors of high winds and permits them to make use of the higher temperatures immediately adjacent to the ground surface. In an area where low temperatures are limiting to life, the importance of the additional heat near the surface is crucial. The low growth form can also permit the plants to take advantage of the insulation provided by a winter snow cover. In the equatorial mountains the low growth form is less prevalent.

Above the tree line there is a zone that is generally called alpine tundra.

■ Immediately adjacent to the timberline, the tundra consists of a fairly complete cover of low-lying shrubs, herbs, and grasses, while higher up the number and diversity of species decrease until there is

indicate where the following sentence could be added to the passage.

This explains how, for example, alpine cushion plants have been found growing at an altitude of 6,180 meters.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

13.

At the timberline, whether upper or lower, there is a profound change in the growth of trees and other plants.

-
-
-

Answer choices

○ Birch is one of the few species of tree that can survive in the extreme environments of the upper timberline.

○ There is no agreement among scientists as to exactly why plant growth is sharply different above and below the upper timberline.

○ The temperature at the upper timberline is probably more important in preventing tree growth than factors such as the amount of snowfall or the force of winds.

○ The geographical location of an upper timberline has an impact on both the types of trees found there and their physical characteristics.

○ High levels of ultraviolet light most likely play a greater role in determining tree growth at the upper timberline than do grazing animals such as the ibex.

○ Despite being adjacent to the timberline, the alpine tundra is an area where certain kinds of low trees can endure high winds and very low temperatures.

much bare ground with occasional mosses and lichens and some prostrate cushion plants. ■ Some plants can even survive in favorable microhabitats above the snow line. The highest plants in the world occur at around 6,100 meters on Makalu in the Himalayas. ■ At this great height, rocks, warmed by the sun, melt small snowdrifts. ■

TPO 02

Paragraph 1:

Directions: Mark your answer by filling in the oval next to your choice.

1. In paragraph 1, what does the author say about the presence of a blowhole in cetaceans?

○ It clearly indicates that cetaceans are mammals.

○ It cannot conceal the fact that cetaceans are mammals.

○ It is the main difference between cetaceans and land-dwelling mammals.

○ It cannot yield clues about the origins of cetaceans.

2. Which of the following can be inferred from paragraph 1 about early sea otters?

○ It is not difficult to imagine what they looked like

○ There were great numbers of them.

○ They lived in the sea only.

○ They did not leave many fossil remains.

THE ORIGINS OF CETACEANS

It should be obvious that cetaceans-whales, porpoises, and dolphins-are mammals. They breathe through lungs, not through gills, and give birth to live young. Their streamlined bodies, the absence of hind legs, and the presence of a fluke¹ and blowhole² cannot disguise their affinities with land dwelling mammals. However, unlike the cases of sea otters and pinnipeds (seals, sea lions, and walruses, whose limbs are functional both on land and at sea), it is not easy to envision what the first whales looked like. Extinct but already fully marine cetaceans are known from the fossil record. How was the gap between a walking mammal and a swimming whale bridged? Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans.

Very exciting discoveries have finally allowed scientists to reconstruct the most likely origins of cetaceans. In 1979, a team looking for fossils in northern Pakistan found what proved to be the oldest fossil whale. The fossil was officially named *Pakicetus* in honor of the country where the discovery was made. *Pakicetus* was found embedded in rocks formed from river deposits that were 52 million years old. The river that formed these deposits was actually not far from an ancient ocean known as the Tethys Sea.

Paragraph 3:

3. The word precious in the passage is closest in meaning to

○ Exact

The fossil consists of a complete skull of an archaeocete, an extinct group of ancestors of modern cetaceans.

- Scarce
- Valuable
- Initial

4. *Pakicetus* and modern cetaceans have similar

- Hearing structures
- Adaptations for diving
- Skull shapes
- Breeding locations

一想到新托福，就想到咱老无。

<http://www.ibtsat.com>

5. The word it in the passage refers to

- Pakicetus*
- Fish
- Life
- ocean

Although limited to a skull, the *Pakicetus* fossil provides precious details on the origins of cetaceans. The skull is cetacean-like but its jawbones lack the enlarged space that is filled with fat or oil and used for receiving underwater sound in modern whales. *Pakicetus* probably detected sound through the ear opening as in land mammals. The skull also lacks a blowhole, another cetacean adaptation for diving. Other features, however, show experts that *Pakicetus* is a transitional form between a group of extinct flesh-eating mammals, the mesonychids, and cetaceans. It has been suggested that *Pakicetus* fed on fish in shallow water and was not yet adapted for life in the open ocean. It probably bred and gave birth on land.

Paragraph 4:

6. The word exposed in the passage is closest in meaning to

- Explained
- Visible
- Identified
- Located

7. The hind leg of *Basilosaurus* was a significant find because it showed that *Basilosaurus*

- Lived later than *Ambulocetus natans*
- Lived at the same time as *Pakicetus*
- Was able to swim well
- Could not have walked on land

8. It can be inferred that *Basilosaurus* bred and gave birth in which of the following locations

- On land
- Both on land and at sea

Another major discovery was made in Egypt in 1989. Several skeletons of another early whale, *Basilosaurus*, were found in sediments left by the Tethys Sea and now exposed in the Sahara desert. This whale lived around 40 million years ago, 12 million years after *Pakicetus*. Many incomplete skeletons were found but they included, for the first time in an archaeocyte, a complete hind leg that features a foot with three tiny toes. Such legs would have been far too small to have supported the 50-foot-long *Basilosaurus* on land. *Basilosaurus* was undoubtedly a fully marine whale with possibly nonfunctional, or vestigial, hind legs.

An even more exciting find was reported in 1994, also from Pakistan. The now extinct whale *Ambulocetus natans* ("the walking whale that swam") lived in the Tethys Sea 49 million years ago. It lived around 3 million years after

- In shallow water
- In a marine environment

Paragraph 5:

9. Why does the author use the word luckily in mentioning that the *Ambulocetus natans* fossil included hind legs?

- Fossil legs of early whales are a rare find.
- The legs provided important information about the evolution of cetaceans.
- The discovery allowed scientists to reconstruct a complete skeleton of the whale.
- Until that time, only the front legs of early whales had been discovered.

10. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage?

Incorrect choices change the meaning in important ways or leave out essential information.

- Even though *Ambulocetus* swam by moving its body up and down, it did not have a backbone.
- The backbone of *Ambulocetus*, which allowed it to swim, provides evidence of its missing fluke.
- Although *Ambulocetus* had no fluke, its backbone structure shows that it swam like modern whales.
- By moving the rear parts of their bodies up and down, modern whales swim in a different way from the way *Ambulocetus* swam.

11. The word propulsion in the passage is closest in meaning to

- Staying afloat
- Changing direction
- Decreasing weight
- Moving forward

12. Look at the four squares [■] that indicate where the following sentence can be added to the passage.

Pakicetus but 9 million before *Basilosaurus*. The fossil luckily includes a good portion of the hind legs. The legs were strong and ended in long feet very much like those of a modern pinniped. The legs were certainly functional both on land and at sea. The whale retained a tail and lacked a fluke, the major means of locomotion in modern cetaceans. The structure of the backbone shows, however, that *Ambulocetus* swam like modern whales by moving the rear portion of its body up and down, even though a fluke was missing. The large hind legs were used for propulsion in water. On land, where it probably bred and gave birth, *Ambulocetus* may have moved around very much like a modern sea lion. It was undoubtedly a whale that linked life on land with life at sea

Fluke: the two parts that constitute the large triangular tail of a whale

1. "Blowhole: a hole in the top of the head used for breathing
-
-

Paragraph 1: Extinct but already fully marine cetaceans are known from the fossil record. ■How was the gap between a walking mammal and a

This is a question that has puzzled scientists for ages.

Where would the sentence best fit?

13-14.

This passage discusses fossils that help to explain the likely origins of cetaceans-whales, porpoises, and dolphins.

-
-
-

Answer Choices

1. Recent discoveries of fossils have helped to show the link between land mammals and cetaceans.

2. The discovery of Ambulocetus natans provided evidence for a whale that lived both on land and at sea.

3. The skeleton of Basilosaurus was found in what had been the Tethys Sea, an area rich in fossil evidence.

4. Pakicetus is the oldest fossil whale yet to be found.

5. Fossils thought to be transitional forms between walking mammals and swimming whales were found.

6. Ambulocetus' hind legs were used for propulsion in the water.

一想到新托福，就想到咱老无。

swimming whale bridged? ■Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans. ■Very exciting discoveries have finally allowed scientists to reconstruct the most likely origins of cetaceans. ■In 1979, a team looking for fossils in northern Pakistan found what proved to be the oldest fossil whale.

Paragraph 1:

1. The word threatened in the passage is closest in meaning to

- Restricted
- Endangered
- Prevented
- Rejected

Paragraph 3:

2. According to paragraph 3, the loss of

DESERT FORMATION

The deserts, which already occupy approximately a fourth of the Earth's land surface, have in recent decades been increasing at an alarming pace. The expansion of desertlike conditions into areas where they did not previously exist is called desertification. It has been estimated that an additional one-fourth of the Earth's land surface is threatened by this process.

natural vegetation has which of the following consequences for soil?

- Increased stony content
- Reduced water absorption
- Increased numbers of spaces in the soil
- Reduced water runoff

Paragraph 5:

3. The word delicate in the passage is closest in meaning to

- Fragile
- Predictable
- Complex
- Valuable

4. According to paragraph 5, in dry periods, border areas have difficulty

- Adjusting to stresses created by settlement
- Retaining their fertility after desertification
- Providing water for irrigating crops
- Attracting populations in search of food and fuel

Paragraph 6:

5. The word progressively in the passage is closest in meaning to

- Openly
- Impressively
- Objectively
- Increasingly

6. According to paragraph 6, which of the following is often associated with raising crops?

- Lack of proper irrigation techniques
- Failure to plant crops suited to the particular area
- Removal of the original vegetation
- Excessive use of dried animal waste

7. The phrase devoid of in the passage is closest in meaning to

- Consisting of
- Hidden by

Desertification is accomplished primarily through the loss of stabilizing natural vegetation and the subsequent accelerated erosion of the soil by wind and water. In some cases the loose soil is blown completely away, leaving a stony surface. In other cases, the finer particles may be removed, while the sand-sized particles are accumulated to form mobile hills or ridges of sand.

Even in the areas that retain a soil cover, the reduction of vegetation typically results in the loss of the soil's ability to absorb substantial quantities of water. The impact of raindrops on the loose soil tends to transfer fine clay particles into the tiniest soil spaces, sealing them and producing a surface that allows very little water penetration. Water absorption is greatly reduced; consequently runoff is increased, resulting in accelerated erosion rates. The gradual drying of the soil caused by its diminished ability to absorb water results in the further loss of vegetation, so that a cycle of progressive surface deterioration is established.

In some regions, the increase in desert areas is occurring largely as the result of a trend toward drier climatic conditions. Continued gradual global warming has produced an increase in aridity for some areas over the past few thousand years. The process may be accelerated in subsequent decades if global warming resulting from air pollution seriously increases.

There is little doubt, however, that desertification in most areas results primarily from human activities rather

- Except for
- Lacking in

Paragraph 9:

8. According to paragraph 9, the ground's absorption of excess water is a factor in desertification because it can

- Interfere with the irrigation of land
- Limit the evaporation of water
- Require more absorption of air by the soil
- Bring salts to the surface

9. All of the following are mentioned in the passage as contributing to desertification EXCEPT

- Soil erosion
- Global warming
- Insufficient irrigation
- The raising of livestock

Paragraph 10:

10. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage?

Incorrect choices change the meaning in important ways or leave out essential information.

○ Desertification is a significant problem because it is so hard to reverse and affects large areas of land and great numbers of people.

○ Slowing down the process of desertification is difficult because of population growth that has spread over large areas of land.

○ The spread of deserts is considered a very serious problem that can be solved only if large numbers of people in various countries are involved in the effort.

○ Desertification is extremely hard to reverse unless the population is reduced in the vast areas affected.

11. It can be inferred from the passage that the author most likely believes which of the following about the future of desertification?

than natural processes. The semiarid lands bordering the deserts exist in a delicate ecological balance and are limited in their potential to adjust to increased environmental pressures. Expanding populations are subjecting the land to increasing pressures to provide them with food and fuel. In wet periods, the land may be able to respond to these stresses. During the dry periods that are common phenomena along the desert margins, though, the pressure on the land is often far in excess of its diminished capacity, and desertification results.

Four specific activities have been identified as major contributors to the desertification processes: overcultivation, overgrazing, firewood gathering, and overirrigation. The cultivation of crops has expanded into progressively drier regions as population densities have grown. These regions are especially likely to have periods of severe dryness, so that crop failures are common. Since the raising of most crops necessitates the prior removal of the natural vegetation, crop failures leave extensive tracts of land devoid of a plant cover and susceptible to wind and water erosion.

■ The raising of livestock is a major economic activity in semiarid lands, where grasses are generally the dominant type of natural vegetation. ■ The consequences of an excessive number of livestock grazing in an area are the reduction of the vegetation cover and the trampling and pulverization of the soil. ■ This is usually followed by the drying of the soil and accelerated erosion. ■

Firewood is the chief fuel used for cooking and heating in many countries.

- Governments will act quickly to control further desertification.
- The factors influencing desertification occur in cycles and will change in the future.
- Desertification will continue to increase.
- Desertification will soon occur in all areas of the world.

Paragraph 7:

12. Look at the four squares [■] that indicate where the following sentence can be added to the passage.

This economic reliance on livestock in certain regions makes large tracts of land susceptible to overgrazing.

Where would the sentence best fit?

13-14. Many factors have contributed to the great increase in desertification in recent decades.

-
-
-

Answer Choices

1. Growing human populations and the agricultural demands that come with such growth have upset the ecological balance in some areas and led to the spread of deserts.

2. As periods of severe dryness have become more common, failures of a number of different crops have increased.

3. Excessive numbers of cattle and the need for firewood for fuel have reduced grasses and trees, leaving the land unprotected and vulnerable.

4. Extensive irrigation with poor drainage brings salt to the surface of the soil, a process that reduces water and air absorption.

5. Animal dung enriches the soil by providing nutrients for plant growth.

6. Grasses are generally the dominant type of natural vegetation in semiarid lands.

The increased pressures of expanding populations have led to the removal of woody plants so that many cities and towns are surrounded by large areas completely lacking in trees and shrubs. The increasing use of dried animal waste as a substitute fuel has also hurt the soil because this valuable soil conditioner and source of plant nutrients is no longer being returned to the land.

The final major human cause of desertification is soil salinization resulting from overirrigation. Excess water from irrigation sinks down into the water table. If no drainage system exists, the water table rises, bringing dissolved salts to the surface. The water evaporates and the salts are left behind, creating a white crustal layer that prevents air and water from reaching the underlying soil.

The extreme seriousness of desertification results from the vast areas of land and the tremendous numbers of people affected, as well as from the great difficulty of reversing or even slowing the process. Once the soil has been removed by erosion, only the passage of centuries or millennia will enable new soil to form. In areas where considerable soil still remains, though, a rigorously enforced program of land protection and cover-crop planting may make it possible to reverse the present deterioration of the surface.

Paragraph 1:

1. According to paragraph 1, all of the following were true of viewing films in Kinetoscope parlors EXCEPT:

- One individual at a time viewed a film.
- Customers could view one film after another.
- Prizefights were the most popular subjects for films.
- Each film was short.

Paragraph 2:

2. The author discusses phonograph parlors in paragraph 2 in order to

- Explain Edison's financial success
- Describe the model used to design Kinetoscope parlors
- Contrast their popularity to that of Kinetoscope parlors
- Illustrate how much more technologically advanced Kinetoscope parlors were

3. Which of the sentences below best expresses the essential information in the highlighted sentence from the passage?

Incorrect answer choices change the meaning in important ways or leave out essential information.

- Edison was more interested in developing a variety of machines than in developing a technology based on only one.
- Edison refused to work on projection technology because he did not think exhibitors would replace their projectors with newer machines.
- Edison did not want to develop projection technology because it limited the number of machines he could sell.
- Edison would not develop projection technology unless exhibitors agreed to purchase more than one projector from him.

EARLY CINEM

The cinema did not emerge as a form of mass consumption until its technology evolved from the initial "peepshow" format to the point where images were projected on a screen in a darkened theater. In the peepshow format, a film was viewed through a small opening in a machine that was created for that purpose. Thomas Edison's peepshow device, the Kinetoscope, was introduced to the public in 1894. It was designed for use in Kinetoscope parlors, or arcades, which contained only a few individual machines and permitted only one customer to view a short, 50-foot film at any one time. The first Kinetoscope parlors contained five machines. For the price of 25 cents (or 5 cents per machine), customers moved from machine to machine to watch five different films (or, in the case of famous prizefights, successive rounds of a single fight).

一想到新托福，就想到咱老无。

These Kinetoscope arcades were modeled on phonograph parlors, which had proven successful for Edison several years earlier. In the phonograph parlors, customers listened to recordings through individual ear tubes, moving from one machine to the next to hear different recorded speeches or pieces of music. The Kinetoscope parlors functioned in a similar way. Edison was more interested in the sale of Kinetoscopes (for roughly \$1,000 apiece) to these parlors than in the films that would be run in them (which cost approximately \$10 to \$15 each). He refused to develop projection technology, reasoning that if he made and sold projectors, then exhibitors would purchase only one machine-a

一想到新托福，就想到咱老无。

Paragraph 3:

4. The word readily in the passage is closest in meaning to

- Frequently
- Easily
- Intelligently
- Obviously

5. The word assistance in the passage is closest in meaning to

- Criticism
- Leadership
- Help
- Approval

projector-from him instead of several.

Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a time) and by charging 25 to 50 cents admission. About a year after the opening of the first Kinetoscope parlor in 1894, showmen such as Louis and Auguste Lumiere, Thomas Armat and Charles Francis Jenkins, and Orville and Woodville Latham (with the assistance of Edison's former assistant, William Dickson) perfected projection devices. These early projection devices were used in vaudeville theaters, legitimate theaters, local town halls, makeshift storefront theaters, fairgrounds, and amusement parks to show films to a mass audience.

无老师网站 <http://www.ibtsat.com>

Paragraph 4:

6. According to paragraph 4, how did the early movies differ from previous spectacles that were presented to large audiences?

- They were a more expensive form of entertainment.
- They were viewed by larger audiences.
- They were more educational.
- They did not require live entertainers.

With the advent of projection in 1895-1896, motion pictures became the ultimate form of mass consumption. Previously, large audiences had viewed spectacles at the theater, where vaudeville, popular dramas, musical and minstrel shows, classical plays, lectures, and slide-and-lantern shows had been presented to several hundred spectators at a time. But the movies differed significantly from these other forms of entertainment, which depended on either live performance or (in the case of the slide-and-lantern shows) the active involvement of a master of ceremonies who assembled the final program.

Although early exhibitors regularly accompanied movies with live acts, the substance of the movies themselves is mass-produced, prerecorded material that

Paragraph 5:

7. According to paragraph 5, what role did

early exhibitors play in the presentation of movies in theaters?

○They decided how to combine various components of the film program.

○They advised film-makers on appropriate movie content.

○They often took part in the live-action performances.

○They produced and prerecorded the material that was shown in the theaters.

Paragraph 6:

8. Which of the following is mentioned in paragraph 6 as one of the ways the Mutoscope differed from the Kinetoscope?

○Sound and motion were simultaneously produced in the Mutoscope.

○More than one person could view the images at the same time with the Mutoscope.

○The Mutoscope was a less sophisticated earlier prototype of the Kinetoscope.

○A different type of material was used to produce the images used in the Mutoscope.

9. The word **it** in the passage refers to

- The advent of projection
- The viewer's relationship with the image
- A similar machine
- Celluloid

10. According to paragraph 6, the images seen by viewers in the earlier peepshows, compared to the images projected on the screen, were relatively

- Small in size
- Inexpensive to create
- Unfocused
- Limited in subject matter

11. The word **expanded** in the passage is closest in meaning to

- Was enlarged
- Was improved
- Was varied
- Was rejected

can easily be reproduced by theaters with little or no active participation by the exhibitor. Even though early exhibitors shaped their film programs by mixing films and other entertainments together in whichever way they thought would be most attractive to audiences or by accompanying them with lectures, their creative control remained limited. What audiences came to see was the technological marvel of the movies; the lifelike reproduction of the commonplace motion of trains, of waves striking the shore, and of people walking in the street; and the magic made possible by trick photography and the manipulation of the camera.

With the advent of projection, the viewer's relationship with the image was no longer private, as it had been with earlier peepshow devices such as the Kinetoscope and the Mutoscope, which was a similar machine that reproduced motion by means of successive images on individual photographic cards instead of on strips of celluloid. It suddenly became public—an experience that the viewer shared with dozens, scores, and even hundreds of others. At the same time, the image that the spectator looked at expanded from the minuscule peepshow dimensions of 1 or 2 inches (in height) to the life-size proportions of 6 or 9 feet.

Paragraph 3: ■Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a

12. Look at the four squares [■] that indicate where the following sentence can be added to the passage.

When this widespread use of projection technology began to hurt his Kinetoscope business, Edison acquired a projector developed by Armat and introduced it as "Edison's latest marvel, the Vitascope."

Where would the sentence best fit?

13.

The technology for modern cinema evolved at the end of the nineteenth century.

-
-
-

Answer Choices

1. Kinetoscope parlors for viewing films were modeled on phonograph parlors.
2. Thomas Edison's design of the Kinetoscope inspired the development of large screen projection.
3. Early cinema allowed individuals to use special machines to view films privately.
4. Slide-and-lantern shows had been presented to audiences of hundreds of spectators.
5. The development of projection technology made it possible to project images on a large screen.
6. Once film images could be projected, the cinema became form of mass consumption.

time) and by charging 25 to 50 cents admission. ■About a year after the opening of the first Kinetoscope parlor in 1894, showmen such as Louis and Auguste Lumiere, Thomas Armat and Charles Francis Jenkins, and Orville and Woodville Latham (with the assistance of Edison's former assistant, William Dickson) perfected projection devices.

■These early projection devices were used in vaudeville theaters, legitimate theaters, local town halls, makeshift storefront theaters, fairgrounds, and amusement parks to show films to a mass audience.■

TPO 03

ARCHITECTURE

Architecture is the art and science of designing structures that organize and enclose space for practical and symbolic purposes. Because architecture grows out of human needs and aspirations, it clearly communicates cultural values. Of all the visual arts, architecture affects our lives

Paragraph 1:

1. According to paragraph 1, all of the following statements about architecture are true EXCEPT:

- Architecture is visual art.
- Architecture reflects the cultural values of its creators.

- Architecture has both artistic and scientific dimensions.
- Architecture has an indirect effect on life.

most directly for it determines the character of the human environment in major ways.

Paragraph 2:

2. The word “feasible” in the passage is closest in meaning to

- In existence
- Without question
- Achievable
- Most likely

Paragraph 3:

3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○ Unchanging physical laws have limited the size and strength of buildings that can be made with materials discovered long ago.

○ Building materials have changed in order to increase architectural size and strength, but physical laws of structure have not changed.

○ When people first started to build, the structural methods used to provide strength and size were inadequate because they were not based on physical laws.

○ Unlike building materials, the methods of support used in architecture have not changed over time because they are based on physical laws.

4. The word “devised” in the passage is closest in meaning to

- Combined
- Created
- Introduced
- Suggested

Architecture is a three-dimensional form. It utilizes space, mass, texture, line, light, and color. To be architecture, a building must achieve a working harmony with a variety of elements. Humans instinctively seek structures that will shelter and enhance their way of life. It is the work of architects to create buildings that are not simply constructions but also offer inspiration and delight. Buildings contribute to human life when they provide shelter, enrich space, complement their site, suit the climate, and are economically feasible. The client who pays for the building and defines its function is an important member of the architectural team. The mediocre design of many contemporary buildings can be traced to both clients and architects.

In order for the structure to achieve the size and strength necessary to meet its purpose, architecture employs methods of support that, because they are based on physical laws, have changed little since people first discovered them—even while building materials have changed dramatically. The world’s architectural structures have also been devised in relation to the objective limitations of materials. Structures can be analyzed in terms of how they deal with downward forces created by gravity. They are designed to withstand the forces of compression (pushing together), tension (pulling apart), bending, or a combination of these in different parts of the structure.

Paragraph 4:

5. The word “integral” is closest in meaning

to

- Essential
- Variable
- Practical
- Independent

6. According to paragraph 4, which of the following is true about materials used in the construction of buildings?

- Because new building materials are hard to find, construction techniques have changed very little from past generations.
- The availability of suitable building materials no longer limits the types of structures that may be built.
- The primary building materials that are available today are wood, stone, and brick.
- Architects in earlier times did not have enough building materials to enclose large spaces.

7. In paragraph 4, what does the author imply about modern buildings?

- They occupy much less space than buildings constructed one hundred years ago.
- They are not very different from the building of a few generations ago.
- They weigh less in relation to their size than buildings constructed one hundred years ago.
- They take a long time to build as a result of their complex construction methods.

Paragraph 5:

8. Which of the following correctly characterizes the relationship between the human body and architecture that is described in paragraph 5?

- Complex equipment inside buildings is the one element in modern architecture that resembles a component of the human body.
- The components in early buildings were similar to three particular elements of the human body.

Even development in architecture has been the result of major technological changes. Materials and methods of construction are **integral** parts of the design of architecture structures. In earlier times it was necessary to design structural systems suitable for the materials that were available, such as wood, stone, brick. Today technology has progressed to the point where it is possible to invent new building materials to suit the type of structure desired. Enormous changes in materials and techniques of construction within the last few generations have made it possible to enclose space with much greater ease and speed and with a minimum of material. Progress in this area can be measured by the difference in weight between buildings built now and those of comparable size built one hundred ago.

■ Modern architectural forms generally have three separate components comparable to elements of the human body; a supporting skeleton or frame, an outer skin enclosing the interior spaces, equipment, similar to the body's vital organs and systems. ■ The equipment includes plumbing, electrical wiring, hot water, and air-conditioning. ■ Of course in early architecture—such as igloos and adobe structures—there was no such equipment, and the skeleton and skin were often one. ■

Much of the world's great architecture has been constructed of stone because of its beauty, permanence, and availability. In the past, whole cities grew from the **arduous** task of cutting and piling stone upon. Some of the world's finest stone architecture can be seen in the ruins of the ancient Inca city

○Modern buildings have components that are as likely to change as the human body is.

○In general, modern buildings more closely resemble the human body than earlier buildings do.

Paragraph 6:

9. The word “arduous” in the passage is closest in meaning to

- Difficult
- Necessary
- Skilled
- Shared

10. Why does the author include a description of how the “doorways and windows” of Machu Picchu were constructed?

○To indicate that the combined skeletons and skins of the stone buildings of Machu Picchu were similar to igloos and adobe structures

○To indicate the different kinds of stones that had to be cut to build Machu Picchu

○To provide an illustration of the kind of construction that was required before arches were invented

○To explain how ancient builders reduced the amount of time necessary to construct buildings from stone.

11. According to paragraph6, which of the following statements is true of the arch?

○The Romans were the first people to use the stone arch.

○The invention of the arch allowed new architectural forms to be developed.

○The arch worked by distributing the structural of a building toward the center of the arch.

○The Romans followed earlier practices in their use of arches.

Paragraph 5:

12. Look at the four squares [■] that

of Machu Picchu high in the eastern Andes Mountains of Peru. The doorways and windows are made possible by placing over the open spaces thick stone beams that support the weight from above. A structural invention had to be made before the physical limitations of stone could be overcome and new architectural forms could be created. That invention was the arch, a curved structure originally made of separate stone or brick segments. The arch was used by the early cultures of the Mediterranean area chiefly for underground drains, but it was the Romans who first developed and used the arch extensively in aboveground structures. Roman builders perfected the semicircular arch made of separate blocks of stone. As a method of spanning space, the arch can support greater weight than a horizontal beam. It works in compression to divert the weight above it out to the sides, where the weight is borne by the vertical elements on either side of the arch. The arch is among the many important structural breakthroughs that have characterized architecture throughout the centuries.

■ Modern architectural forms generally have three separate components comparable to elements of the human body; a supporting skeleton or frame, an outer skin enclosing the interior spaces, equipment, similar to the body's vital organs and systems. ■ The

indicate where the following sentence could be added to the passage.

However, some modern architectural designs, such as those using folded plates of concrete or air-inflated structures, are again unifying skeleton and skin.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

13.

Architecture uses forms and space to express cultural values.

-
-
-

Answer choices

○ Architects seek to create buildings that are both visually appealing and well suited for human use.

○ Over the course of the history of building, innovations in material and methods of construction have given architects ever greater freedom to express themselves.

○ Throughout history buildings have been constructed like human bodies, needing distinct “organ” systems in order to function.

○ Both clients and architects are responsible for the mediocre designs of some modern buildings.

○ Modern buildings tend to lack the beauty of ancient stone buildings such as those of Machu Picchu.

○ The discovery and use of the arch typifies the way in which architecture advances by developing more efficient types of structures.

equipment includes plumbing, electrical wiring, hot water, and air-conditioning.

■ Of course in early architecture—such as igloos and adobe structures—there was no such equipment, and the skeleton and skin were often one. ■

Paragraph 1:

1. According to paragraph 1, which of the following statements about the High Plains is true?

○ Until farmers and ranchers settled there in the 1880's, the High Plains had never been

Depletion of the Ogallala Aquifer

The vast grasslands of the High Plains in the central United States were settled by farmers and ranchers in the 1880's. This region has a semiarid climate, and for 50 years after its settlement, it supported a low-intensity

inhabited.

○The climate of the High Plains is characterized by higher-than-average temperatures.

○The large aquifer that lies underneath the High Plains was discovered by the Ogallala Sioux Indians.

○Before the early 1900's there was only a small amount of farming and ranching in the High Plains.

Paragraph 2:

2. According to paragraph 2, all of the following statements about the Ogallala aquifer are true EXCEPT:

○The aquifer stretches from South Dakota to Texas.

○The aquifer's water comes from underground springs.

○Water has been gathering in the aquifer for 30,000 years.

○The aquifer's water is stored in a layer of sandstone.

3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○Despite the current impressive size of the Ogallala aquifer, the region's climate keeps the rates of water addition very small.

○Although the aquifer has been adding water at the rate of only half a centimeter a year, it will eventually accumulate enough water to fill Lake Huron.

○Because of the region's present climatic conditions, water is being added each year to the aquifer.

○Even when the region experiences unfortunate climatic conditions, the rates of addition of water continue to increase.

agricultural economy of cattle ranching and wheat farming. In the early twentieth century, however, it was discovered that much of the High Plains was underlain by a huge aquifer (a rock layer containing large quantities of groundwater). This aquifer was named the Ogallala aquifer after the Ogallala Sioux Indians, who once inhabited the region.

The Ogallala aquifer is a sandstone formation that underlies some 583,000 square kilometers of land extending from northwestern Texas to southern South Dakota. Water from rains and melting snows has been accumulating in the Ogallala for the past 30,000 years. Estimates indicate that the aquifer contains enough water to fill Lake Huron, but unfortunately, under the semiarid climatic conditions that presently exist in the region, rates of addition to the aquifer are minimal, amounting to about half a centimeter a year.

The first wells were drilled into the Ogallala during the drought years of the early 1930's. The ensuing rapid expansion of irrigation agriculture, especially from the 1950's onward, transformed the economy of the region. More than 100,000 wells now tap the Ogallala. Modern irrigation devices, each capable of spraying 4.5 million liters of water a day, have produced a landscape dominated by geometric patterns of circular green islands of crops. Ogallala water has enabled the High Plains region to supply significant amounts of the cotton, sorghum, wheat, and corn grown in the United States. In addition, 40 percent of American grain-fed beef cattle

Paragraph 3:

4. The word “ensuing” in the passage is closest in meaning to

- Continuing
- Surprising
- Initial
- Subsequent

5. In paragraph 3, why does the author provide the information that 40 percent of American cattle are fattened in the High Plains?

○ To suggest that crop cultivation is not the most important part of the economy of the High Plains

○ To indicate that not all economic activity in the High Plains is dependent on irrigation

○ To provide another example of how water from the Ogallala has transformed the economy of the High Plains

○ To contrast cattle-fattening practices in the High Plains with those used in other region of the United States

Paragraph 4:

6. The word “unprecedented” in the passage is closest in meaning to

- Difficult to control
- Without any restriction
- Unlike anything in the past
- Rapidly expanding

7. The word “virtually” in the passage is closest in meaning to

- Clearly
- Perhaps
- Frequently
- Almost

无老师博客 www.ibtsat.com

8. According to paragraph 4, all of following are consequences of the heavy use of the Ogallala aquifer for irrigation EXCEPT:

○ The recharge rate of the aquifer is decreasing.

○ Water tables in the region are becoming increasingly lower.

are fattened here.

This unprecedented development of a finite groundwater resource with an almost negligible natural recharge rate—that is, virtually no natural water source to replenish the water supply—has caused water tables in the region to fall drastically. In the 1930's, wells encountered plentiful water at a depth of about 15 meters; currently, they must be dug to depths of 45 to 60 meters or more. In places, the water table is declining at a rate of a meter a year, necessitating the periodic deepening of wells and the use of ever-more-powerful pumps. It is estimated that at current withdrawal rates, much of the aquifer will run dry within 40 years. The situation is most critical in Texas, where the climate is driest, the greatest amount of water is being pumped, and the aquifer contains the least water. It is projected that the remaining Ogallala water will, by the year 2030, support only 35 to 40 percent of the irrigated acreage in Texas that is supported in 1980.

The reaction of farmers to the inevitable depletion of the Ogallala varies. Many have been attempting to conserve water by irrigating less frequently or by switching to crops that require less water. Other, however, have adopted the philosophy that it is best to use the water while it is still economically profitable to do so and to concentrate on high-value crops such as cotton. The incentive of the farmers who wish to conserve water is reduced by their knowledge that many of their neighbors are profiting by using great amounts of water, and in the process are drawing down the entire region's water

- Wells now have to be dug to much greater depths than before.
- Increasingly powerful pumps are needed to draw water from the aquifer.

9. According to paragraph 4, compared with all other states that use Ogallala water for irrigation, Texas

- Has the greatest amount of farmland being irrigated with Ogallala water
- Contains the largest amount of Ogallala water underneath the soil
- Is expected to face the worst water supply crisis as the Ogallala runs dry
- Uses the least amount of Ogallala water for its irrigation needs

Paragraph 5:

10. The word “inevitable” in the passage is closest in meaning to

- Unfortunate
- Predictable
- Unavoidable
- Final

11. Paragraph 5 mentions which of the following as a source of difficulty for some farmers who try to conserve water?

- Crops that do not need much water are difficult to grow in the High Plains.
- Farmers who grow crops that need a lot of water make higher profits.
- Irrigating less frequently often leads to crop failure.
- Few farmers are convinced that the aquifer will eventually run dry.

Paragraph 6:

12. According to paragraph 6, what is the main disadvantage of the proposed plans to transport river water to the High Plains?

- The rivers cannot supply sufficient water for the farmer’s needs.
- Increased irrigation costs would make the products too expensive.

supplies. ■

In the face of the upcoming water supply crisis, a number of grandiose schemes have been developed to transport vast quantities of water by canal or pipeline from the Mississippi, the Missouri, or the Arkansas rivers. ■ Unfortunately, the cost of water obtained through any of these schemes would increase pumping costs at least tenfold, making the cost of irrigated agricultural products from the region uncompetitive on the national and international markets. Somewhat more promising have been recent experiments for releasing capillary water (water in the soil) above the water table by injecting compressed air into the ground. Even if this process proves successful, however, it would almost triple water costs. Genetic engineering also may provide a partial solution, as new strains of drought-resistant crops continue to be developed. Whatever the final answer to the water crisis may be, it is evident that within the High Plains, irrigation water will never again be the abundant, inexpensive resource it was during the agricultural boom years of the mid-twentieth century.

The reaction of farmers to the inevitable depletion of the Ogallala

- The costs of using capillary water for irrigation will increase.
- Farmers will be forced to switch to genetically engineered crops.

Paragraph 5—6:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

But even if uncooperative farmers were to join in the conservation efforts, this would only delay the depletion of the aquifer.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

14. The Ogallala is a large underground source of water in the High Plains region of the United States.

-
-
-

Answer choices

○The use of the Ogallala for irrigation has allowed the High Plains to become one of the most productive agricultural regions in the United States.

○Given the aquifer's low recharge rate, its use for irrigation is causing water tables to drop and will eventually lead to its depletion.

○Releasing capillary water and introducing drought-resistant crops are less-promising solutions to the water supply crisis than bringing in river water

○The periodic deepening of wells and the use of more-powerful pumps would help increase the natural recharge rate of the Ogallala.

○In Texas, a great deal of attention is being paid to genetic engineering because it is there that the most critical situation exists.

○Several solutions to the upcoming water supply crisis have been proposed, but none of them promises to keep the costs of irrigation low.

varies. Many have been attempting to conserve water by irrigating less frequently or by switching to crops that require less water. Other, however, have adopted the philosophy that it is best to use the water while it is still economically profitable to do so and to concentrate on high-value crops such as cotton. The incentive of the farmers who wish to conserve water is reduced by their knowledge that many of their neighbors are profiting by using great amounts of water, and in the process are drawing down the entire region's water supplies. ■

In the face of the upcoming water supply crisis, a number of grandiose schemes have been developed to transport vast quantities of water by canal or pipeline from the Mississippi, the Missouri, or the Arkansas rivers. ■ Unfortunately, the cost of water obtained through any of these schemes would increase pumping costs at least tenfold, making the cost of irrigated agricultural products from the region uncompetitive on the national and international markets. Somewhat more promising have been recent experiments for releasing capillary water (water in the soil) above the water table by injecting compressed air into the ground.

Paragraph 1:

1. The word “**particular**” in the passage is closest in meaning to

- Natural
- Final
- Specific
- Complex

2. According to paragraph 1, which of the following is NOT true of climax communities?

- They occur at the end of a succession.
- They last longer than any other type of community.
- The numbers of plants in them and the mix of species do not change.
- They remain stable for at least 500 years at a time.

Paragraph 2:

3. According to paragraph 2, which of the following principles of ecosystems can be learned by studying a pond?

- Ecosystem properties change more slowly than individuals in the system.
- The stability of an ecosystem tends to change as individuals are replaced.
- Individual organisms are stable from one year to the next.
- A change in the members of an organism does not affect an ecosystem's properties

Paragraph 3:

4. According to paragraph 3, ecologists once believed that which of the following illustrated the most stable ecosystems?

- Pioneer communities
- Climax communities
- Single-crop farmlands
- Successional plant communities

The Long-Term Stability of Ecosystems

Plant communities assemble themselves flexibly, and their **particular** structure depends on the specific history of the area. Ecologists use the term “succession” to refer to the changes that happen in plant communities and ecosystems over time. The first community in a succession is called a pioneer community, while the long-lived community at the end of succession is called a climax community. Pioneer and successional plant communities are said to change over periods from 1 to 500 years. These changes—in plant numbers and the mix of species—are cumulative. Climax communities themselves change but over periods of time greater than about 500 years.

An ecologist who studies a pond today may well find it relatively unchanged in a year's time. Individual fish may be replaced, but the number of fish will tend to be the same from one year to the next. We can say that the properties of an ecosystem are more stable than the individual organisms that compose the ecosystem.

At one time, ecologists believed that species diversity made ecosystems stable. They believed that the greater the diversity the more stable the ecosystem. Support for this idea came from the observation that long-lasting climax communities usually have more complex food webs and more species diversity than pioneer communities. Ecologists

Paragraph 4:

5. According to paragraph 4, why is the question of ecosystem stability complicated?

○The reasons for ecosystem change are not always clear.

○Ecologists often confuse the word “stability” with the word “resilience.”

○The exact meaning of the word “stability” is debated by ecologists.

○There are many different answers to ecological questions.

6. According to paragraph 4, which of the following is true of climax communities?

○They are more resilient than pioneer communities.

○They can be considered both the most and the least stable communities.

○They are stable because they recover quickly after major disturbances.

○They are the most resilient communities because they change the least over time.

Paragraph 5:

7. Which of the following can be inferred from paragraph 5 about redwood forests?

○They become less stable as they mature.

○They support many species when they reach climax.

○They are found in temperate zones.

○They have reduced diversity during mid-successional stages.

8. The word “guarantee” in the passage is closest in meaning to

○Increase

○Ensure

○Favor

○Complicate

9. In paragraph 5, why does the author provide the information that “(A fifteen-speed racing bicycle is more likely to break down than a child’s tricycle)”?

concluded that the apparent stability of climax ecosystems depended on their complexity. To take an extreme example, farmlands dominated by a single crop are so unstable that one year of bad weather or the invasion of a single pest can destroy the entire crop. In contrast, a complex climax community, such as a temperate forest, will tolerate considerable damage from weather to pests.

The question of ecosystem stability is complicated, however. The first problem is that ecologists do not all agree what “stability” means. Stability can be defined as simply lack of change. In that case, the climax community would be considered the most stable, since, by definition, it changes the least over time. Alternatively, stability can be defined as the speed with which an ecosystem returns to a particular form following a major disturbance, such as a fire. This kind of stability is also called resilience. In that case, climax communities would be the most fragile and the least stable, since they can require hundreds of years to return to the climax state.

Even the kind of stability defined as simple lack of change is not always associated with maximum diversity. At least in temperate zones, maximum diversity is often found in mid-successional stages, not in the climax community. Once a redwood forest matures, for example, the kinds of species and the number of individuals growing on the forest floor are reduced. In general, diversity, by itself, does not ensure stability. Mathematical models of ecosystems likewise suggest that

○To illustrate a general principle about the stability of systems by using an everyday example

○To demonstrate that an understanding of stability in ecosystems can be applied to help understand stability in other situations

○To make a comparison that supports the claim that, in general, stability increases with diversity

○To provide an example that contradicts mathematical models of ecosystems

Paragraph 6:

10. The word “pales” in the passage is closest in meaning to

- Increases proportionally
- Differs
- Loses significance
- Is common

Paragraph 7:

11. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incurred choices change the meaning in important ways or leave out essential information.

○Ecologists now think that the stability of an environment is a result of diversity rather than patchiness.

○Patchy environments that vary from place to place do not often have high species diversity.

○Uniform environments cannot be climax communities because they do not support as many types of organisms as patchy environments.

○A patchy environment is thought to increase stability because it is able to support a wide variety of organisms.

12. The word “adjacent” in the passage is closest in meaning to

- Foreign
- Stable
- Fluid
- Neighboring

diversity does not guarantee ecosystem stability—just the opposite, in fact. A more complicated system is, in general, more likely than a simple system to break down. (A fifteen-speed racing bicycle is more likely to break down than a child’s tricycle.)

■ Ecologists are especially interested to know what factors contribute to the resilience of communities because climax communities all over the world are being severely damaged or destroyed by human activities. ■ The destruction caused by the volcanic explosion of Mount St. Helens, in the northwestern United States, for example, pales in comparison to the destruction caused by humans. ■ We need to know what aspects of a community are most important to the community’s resistance to destruction, as well as its recovery. ■

Many ecologists now think that the relative long-term stability of climax communities comes not from diversity but from the “patchiness” of the environment, an environment that varies from place to place supports more kinds of organisms than an environment that is uniform. A local population that goes extinct is quickly replaced by immigrants from an adjacent community. Even if the new population is of a different species, it can approximately fill the niche vacated by the extinct population and keep the food web intact.

Paragraph 6:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

In fact, damage to the environment by humans is often much more severe than damage by natural events and processes.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

14.

The process of succession and the stability of a climax community can change over time.

-
-
-

Answer choices

- The changes that occur in an ecosystem from the pioneer to the climax community can be seen in one human generation.
- A high degree of species diversity does not always result in a stable ecosystem.
- The level of resilience in a plant community contributes to its long-term stability.
- Ecologists agree that climax communities are the most stable types of ecosystems.
- Disagreements over the meaning of the term “stability” make it difficult to identify the most stable ecosystems.
- The resilience of climax communities makes them resistant to destruction caused by humans.

Ecologists are especially interested to know what factors contribute to the resilience of communities because climax communities all over the world are being severely damaged or destroyed by human activities. ■ The destruction caused by the volcanic explosion of Mount St. Helens, in the northwestern United States, for example, **pales** in comparison to the destruction caused by humans. ■ We need to know what aspects of a community are most important to the community’s resistance to destruction, as well as its recovery. ■



TPO 04

Paragraph 1:

1. According to paragraph 1, which of the following is true of the white-tailed deer

Deer Populations of the Puget Sound

Two species of deer have been

of Puget Sound?

- It is native to lowlands and marshes.
- It is more closely related to the mule deer of eastern Washington than to other types of deer.
- It has replaced the black-tailed deer in the open prairie.
- It no longer lives in a particular type of habitat that it once occupied.

Paragraph 2:

2. It can be inferred from the discussion in paragraph 2 that winter conditions

- Cause some deer to hibernate
- Make food unavailable in the highlands for deer
 - Make it easier for deer to locate understory plants
- Prevent deer from migrating during the winter

3. The word "inhibits" in the passage is closest in meaning to

- Consists of
- Combines
- Restricts
- Establishes

Paragraph 3:

4. The phrase "in the same breath" in the passage is closest in meaning to

- Impatiently
- Humorously
- Continuously
- Immediately

5. The author tells the story of the explorers Lewis and Clark in paragraph 3 in order to illustrate which of the following points?

- The number of deer within the Puget sound region has varied over time.
 - Most of the explorers who came to the Puget sound area were primarily

prevalent in the Puget Sound area of Washington State in the Pacific Northwest of the United States. The black-tailed deer, lowland, west-side cousin of the mule deer of eastern Washington, is now the most common. The other species, the Columbian white-tailed deer, in earlier times was common in the open prairie country, it is now restricted to the low, marshy islands and flood plains along the lower Columbia River.

Nearly any kind of plant of the forest understory can be part of a deer's diet. Where the forest inhibits the growth of grass and other meadow plants, the black-tailed deer browses on huckleberry, salad, dogwood, and almost any other shrub or herb. But this is fair-weather feeding. What keeps the black-tailed deer a lived in the harsher seasons of plant decay and dormancy? One compensation for not hibernating is the built- in urge to migrate. ■ Deer may move from high-elevation browse areas in summer down to the lowland areas in late fall. ■ Even with snow on the ground, the high bushy understory is exposed; also snow and wind bring down leafy branches of cedar, hemlock, red alder, and other arboreal fodder.

■ The numbers of deer have fluctuated markedly since the entry of Europeans into Puget Sound country. ■ The early explorers and settlers told of abundant deer in the early 1800s and yet almost in the same breath bemoaned the lack of this succulent game animal. Famous explorers of the north American frontier, Lewis and had experienced great difficulty finding game west of the Rockies and not until the second of

interested than in the West.

○There was more game for hunting in the East of the United States than in the West.

○Individual explorers were not as successful at locating games as were the trading companies.

一想到新托福，就想到咱老无

6. According to paragraph 3, how had Fort Vancouver changed by the time David Douglas returned in 1832?

○The fort had become the headquarters for the Hudson's Bay Company.

○Deer had begun populating the meadows around the fort.

○Deer populations near the fort had been destroyed.

○Crop yields in the area around the fort had decreased.

Paragraph 4:

7. Why does the author ask readers to recall “the fate of the Columbian white-tailed deer” in the discussion of changes in the wilderness landscape?

○To provide support for the idea that habitat destruction would lead to population decline

○To compare how two species of deer caused biotic changes in the wilderness environment

○To provide an example of a species of deer that has successfully adapted to human settlement

○To argue that some deer species must be given a protected status

8. The phrase “indefinite period” in the passage is closest in meaning to period

- Whose end has not been determined
- That does not begin when expected
- That lasts only briefly
- Whose importance remains unknown

9. Which of the following statements about

December did they kill their first elk. To keep 40 people alive that winter, they consumed approximately 150 elk and 20 deer. And when game moved out of the lowlands in early spring, the expedition decided to return east rather than face possible starvation. Later on in the early years of the nineteenth century, when Fort Vancouver became the headquarters of the Hudson's Bay Company, deer populations continued to fluctuate. David Douglas, Scottish botanical explorer of the 1830s. Found a disturbing change in the animal life around the fort during the period between his first visit in 1825 and his final contact with the fort in 1832. A recent Douglas biographer states: "The deer which once picturesquely dotted the meadows around the fort were gone [in 1832], hunted to extermination in order to protect the crops."

Reduction in numbers of game should have boded ill for their survival in later times. A worsening of the plight of deer was to be expected as settlers encroached on the land, logging, burning, and clearing, eventually replacing a wilderness landscape with roads, cities, towns, and factories. No doubt the numbers of deer declined still further. Recall the fate of the Columbian white-tailed deer, now in a protected status. But for the black-tailed deer, human pressure has had just the opposite effect. Wild life zoologist Hulmut Buechner(1953), in reviewing the nature of biotic changes in Washington through recorded time, Says that "since the early 1940s, the state has had more deer than at any other time in its history, the winter population fluctuating around approximately 320,000 deer (mule and black-tailed deer), which will yield about

deer populations is supported by the information in paragraph 4?

○Deer populations reached their highest point during the 1940s and then began to decline.

○The activities of settlers contributed in unexpected ways to the growth of some deer populations in later times.

○The clearing of wilderness land for construction caused biotic changes from which the black-tailed deer population has never recovered.

○Since the 1940s the winter populations of deer have fluctuated more than the summer populations have.

<http://www.ibtsat.com>

Paragraph 5 □

10. The word “rebound” in the passage is closest in meaning to

- Decline
- Recovery
- Exchange
- Movement

11. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○Arthur Einarsen’s longtime family with the Pacific Northwest helped him discover areas where deer had an increase in suitable browse.

○Arthur Einarsen found that deforested feeding grounds provided deer with more and better food.

○Biologist like Einarsen believe it is important to find additional open areas with suitable browse for deer to inhabit.

○According to Einarsen, huckleberry and vine maple are examples of vegetation that may someday improve the nutrition of deer in the open areas of the Pacific Northwest.

65,000 of either sex and any age annually for an indefinite period.”

The causes of this population rebound are consequences of other human actions. First, the major predators of deer---wolves, cougar, and lynx--have been greatly reduced in numbers. Second, conservation has been insured by limiting times for and types of hunting. But the most profound reason for the restoration of high population numbers has been the gate of the forests. Great tracts of lowland country deforested by logging, fire, or both have become ideal feeding grounds of deer. In addition to finding an increase of suitable browse, like huckleberry and vine maple, Arthur Einarsen, longtime game biologist in the Pacific Northwest, found quality of browse in the open areas to be substantially more nutritive. The protein content of shade-grown vegetation, for example, was much lower than that for plants grown in clearings.

12. Which of the following is NOT mentioned in paragraph 5 as a factor that has increased deer populations?

- A reduction in the number of predators
- Restrictions on hunting
- The effects of logging and fire
- Laws that protected feeding grounds of deer

Paragraph 2—3:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

There food is available and accessible throughout the winter.

Where would the sentence best fit?

14. Deer in the Puget Sound area eat a wide variety of foods and migrate seasonally food

-
-
-

Answer Choices

- The balance of deer species in the Puget Sound region has changed over time, with the Columbian white-tailed deer now outnumbering other types of deer.
- Deer populations naturally fluctuate, but early settlers in the Puget Sound environment caused an overall decline in the deer populations of the areas at that time.
- In the long term, black-tailed deer in the Puget Sound area have benefitted from human activities through the elimination of their natural predators, and more and better food in deforested areas.
- Because Puget Sound deer migrate, it was and still remains difficult to determine accurately how many deers are living at any one time the western United States.
- Although it was believed that human settlement of American West would cause the total number of deer to decrease permanently,

the opposite has occurred for certain types of deer.

- Wildlife biologists have long been concerned that the loss of forests may create nutritional deficiencies for deer.
-

Paragraph 1:

1. The word “marked” in the passage is closest in meaning to

- Considerable
- Surprising
- Limited
- Adequate

2. Paragraph 1 supports which of the following statements about painting in Europe?

- It is much older than painting in Australia.
- It is as much as 28,000 years old.
- It is not as old as painting in southern Africa.
- It is much more than 30,000 years old.

Paragraph 2:

3. The word “principal” in the passage is closest in meaning to

- Major
- Likely
- Well protected
- Distinct

4. According to paragraph 2, what makes some researchers think that certain cave paintings were connected with magical-religious activities?

- The paintings were located where many people could easily see them, allowing groups of people to participate in the magical-religious activities.

○ Upper Paleolithic people shared similar beliefs with contemporary peoples who use paintings of animals in their magical-religious rituals.

Cave Art in Europe

The earliest discovered traces of art are beads and carvings, and then paintings, from sites dating back to the Upper Paleolithic period. We might expect that early artistic efforts would be crude, but the cave paintings of Spain and southern France show a marked degree of skill. So do the naturalistic paintings on slabs of stone excavated in southern Africa. Some of those slabs appear to have been painted as much as 28,000 years ago, which suggests that painting in Africa is as old as painting in Europe. But painting may be even older than that. The early Australians may have painted on the walls of rock shelters and cliff faces at least 30,000 years ago, and maybe as much as 60,000 years ago.

The researchers Peter Ucko and Andree Rosenfeld identified three principal locations of paintings in the caves of western Europe: (1) in obviously inhabited rock shelters and cave entrances; (2) in galleries immediately off the inhabited areas of caves; and (3) in the inner reaches of caves, whose difficulty of access has been interpreted by some as a sign that magical-religious activities were performed there.

The subjects of the paintings are mostly animals. The paintings rest on bare walls, with no backdrops or environmental trappings. Perhaps, like

○Evidence of magical-religious activities has been found in galleries immediately off the inhabited areas of caves.

○The paintings were found in hard-to-reach places away from the inhabited parts of the cave.

Paragraph 3:

5. The word “trappings” in the passage is closest in meaning to

- Conditions
- Problems
- Influences
- Decorations

6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○Upper Paleolithic people, like many contemporary peoples, believed that if they drew a human image in their cave art, it would cause death or injury.

○Many contemporary people believe that the drawing of a human image can cause death or injury, so they, like Upper Paleolithic people, rarely depicted human figures in their cave art.

○If Upper Paleolithic people, like many contemporary peoples, believed that the drawing of a human image could cause death or injury, this belief might explain why human figures are rarely depicted in cave art.

○Although many contemporary peoples believe that the drawing of a human image can cause death or injury, researchers cannot explain why Upper Paleolithic people rarely depicted human figures in their cave art.

7. According to paragraph 3, scholars explained chips in the painted figures of animals by proposing that

○Upper Paleolithic artists used marks to record the animals they had seen

- the paintings were inspired by the need to

many contemporary peoples, Upper Paleolithic men and women believed that the drawing of a human image could cause death or injury, and if that were indeed their belief, it might explain why human figures are rarely depicted in cave art. Another explanation for the focus on animals might be that these people sought to improve their luck at hunting. ■ This theory is suggested by evidence of chips in the painted figures, perhaps made by spears thrown at the drawings. ■ But if improving their hunting luck was the chief motivation for the paintings, it is difficult to explain why only a few show signs of having been speared. ■ Perhaps the paintings were inspired by the need to increase the supply of animals. Cave art seems to have reached a peak toward the end of the Upper Paleolithic period, when the herds of game were decreasing. ■

The particular symbolic significance of the cave paintings in southwestern France is more explicitly revealed, perhaps, by the results of a study conducted by researchers Patricia Rice and Ann Paterson. The data they present suggest that the animals portrayed in the cave paintings were mostly the ones that the painters preferred for meat and for materials such as hides. For example, wild cattle (bovines) and horses are portrayed more often than we would expect by chance, probably because they were larger and heavier (meatier) than other animals in the environment. In addition, the paintings mostly portray animals that the painters may have feared the most because of their size, speed, natural weapons such as tusks and horns, and the unpredictability of their behavior. That is, mammoths, bovines, and horses

increase the supply of animals for hunting

○the artists had removed rough spots on the cave walls

○Upper Paleolithic people used the paintings to increase their luck at hunting

8. Why does the author mention that Upper Paleolithic cave art seemed to have “reached a peak toward the end of the Upper Paleolithic period, when the herds of game were decreasing”?

○To argue that Upper Paleolithic art ceased to include animals when herds of game became scarce

○To provide support for the idea that the aim of the paintings was to increase the supply of animals for hunting

○To emphasize the continued improvement in the quality of cave art throughout the Upper Paleolithic period

○To show the direct connection between the decrease in herds of game and the end of the Upper Paleolithic period

Paragraph 4:

9. According to paragraph 4, scholars believe that wild cattle, horses, and mammoths are the animals most frequently portrayed in cave paintings for all of the following reasons EXCEPT:

○These animals were difficult to hunt because their unpredictable behavior.

○People preferred these animals for their meat and for their skins.

○The painters admired the beauty of these large animals.

○People feared these animals because of their size and speed.

10. According to paragraph 4, which of the following may best represent the attitude of hunters toward deer and reindeer in the Upper Paleolithic period?

○Hunters did not fear deer and reindeers as much as they did large game animals such as

are portrayed more often than deer and reindeer. Thus, the paintings are consistent with the idea that the art is related to the importance of hunting in the economy of Upper Paleolithic people. Consistent with this idea, according to the investigators, is the fact that the art of the cultural period that followed the Upper Paleolithic also seems to reflect how people got their food. But in that period, when getting food no longer depended on hunting large game animals (because they were becoming extinct), the art ceased to focus on portrayals of animals.

Upper Paleolithic art was not confined to cave paintings. Many shafts of spears and similar objects were decorated with figures of animals. The anthropologist Alexander Marshack has an interesting interpretation of some of the engravings made during the Upper Paleolithic. He believes that as far back as 30.000 B.C., hunters may have used a system of notation, engraved on bone and stone, to mark phases of the Moon. If this is true, it would mean that Upper Paleolithic people were capable of complex thought and were consciously aware of their environment. In addition to other artworks, figurines representing the human female in exaggerated form have also been found at Upper Paleolithic sites. It has been suggested that these figurines were an ideal type or an expression of a desire for fertility.

horses and mammoths.

○ Hunters were not interested in hunting deer and reindeer because of their size and speed.

○ Hunters preferred the meat and hides of deer and reindeer to those of other animals.

○ Hunters avoided deer and reindeer because of their natural weapons, such as horns.

11. According to paragraph 4, what change is evident in the art of the period following the Upper Paleolithic?

○ This new art starts to depict small animals rather than large ones.

○ This new art ceases to reflect the ways in which people obtained their food.

○ This new art no longer consists mostly of representations of animals.

○ This new art begins to show the importance of hunting to the economy.

Paragraph 5:

12. According to paragraph 5, which of the following has been used as evidence to suggest that Upper Paleolithic people were capable of complex thought and conscious awareness of their environment?

○ They engraved animal figures on the shafts of spears and other objects.

○ They may have used engraved signs to record the phases of the Moon.

○ Their figurines represented the human female in exaggerated form.

○ They may have used figurines to portray an ideal type or to express a desire for fertility.

Paragraph 3:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Therefore, if the paintings were connected with hunting, some other explanation is needed.

Where would the sentence best fit?

■ This theory is suggested by evidence of chips in the painted figures, perhaps made by spears thrown at the drawings. ■ But if improving their hunting luck was the chief motivation for the paintings, it is difficult to explain why only a few show signs of having been speared. ■ Perhaps the paintings

14.

Upper Paleolithic cave paintings in Western Europe are among humanity's earliest artistic efforts.

-
-
-

Answer choices

○ Researchers have proposed several different explanations for the fact that animals were the most common subjects in the cave paintings.

○ The art of the cultural period that followed the Upper Paleolithic ceased to portray large game animals and focused instead on the kinds of animals that people of that period preferred to hunt.

○ Some researchers believe that the paintings found in France provide more explicit evidence of their symbolic significance than those found in Spain, southern Africa, and Australia.

○ The cave paintings focus on portraying animals without also depicting the natural environments in which these animals are typically found.

○ Some researchers have argued that the cave paintings mostly portrayed large animals that provided Upper Paleolithic people with meat and materials.

○ Besides cave paintings, Upper Paleolithic people produced several other kinds of artwork, one of which has been thought to provide evidence of complex thought.

were inspired by the need to increase the supply of animals. Cave art seems to have reached a peak toward the end of the Upper Paleolithic period, when the herds of game were decreasing. ■

Paragraph 1:

1. The word “accumulate” in the passage is closest in meaning to

- Grow up

Petroleum Resources

Petroleum, consisting of crude oil and natural gas, seems to originate from organic matter in marine sediment. Microscopic organisms settle to the

- Build up
- Spread out
- Break apart

2. According to paragraph 1, which of the following is true about petroleum formation?

○Microscopic organisms that live in mud produce crude oil and natural gas.

○Large amounts of oxygen are needed for petroleum formation to begin.

○Petroleum is produced when organic material in sediments combines with decaying marine organisms.

○Petroleum formation appears to begin in marine sediments where organic matter is present.

Paragraph 1—2:

3. In paragraphs 1 and 2, the author's primary purpose is to

○Describe how petroleum is formed

○Explain why petroleum formation is a slow process

○Provide evidence that a marine environment is necessary for petroleum formation

○Show that oil commonly occurs in association with gas

4. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○Higher temperatures and pressures promote sedimentation, which is responsible for petroleum formation.

○Deposits of sediments on top of organic matter increase the temperature of and pressure on the matter.

○Increase pressure and heat from the weight of the sediment turn the organic remains into petroleum.

○The remains of microscopic organisms

seafloor and accumulate in marine mud. The organic matter may partially decompose, using up the dissolved oxygen in the sediment. As soon as the oxygen is gone, decay stops and the remaining organic matter is preserved.

Continued sedimentation—the process of deposits' settling on the sea bottom—buries the organic matter and subjects it to higher temperatures and pressures, which convert the organic matter to oil and gas. ■ As muddy sediments are pressed together, the gas and small droplets of oil may be squeezed out of the mud and may move into sandy layers nearby. ■ Over long periods of time (millions of years), accumulations of gas and oil can collect in the sandy layers. ■ Both oil and gas are less dense than water, so they generally tend to rise upward through water-saturated rock and sediment. ■

Oil pools are valuable underground accumulations of oil, and oil fields are regions underlain by one or more oil pools. When an oil pool or field has been discovered, wells are drilled into the ground. Permanent towers, called derricks, used to be built to handle the long sections of drilling pipe. Now portable drilling machines are set up and are then dismantled and removed. When the well reaches a pool, oil usually rises up the well because of its density difference with water beneath it or because of the pressure of expanding gas trapped above it. Although this rise of oil is almost always carefully controlled today, spouts of oil, or gushers, were common in the past. Gas pressure gradually dies out, and oil is pumped from the well. Water or steam may be

transform into petroleum once they are buried under mud.

Paragraph 3:

5. The word “adjacent” in the passage is closest in meaning to

- Nearby
- Existing
- Special
- Deep

6. Which of the following can be inferred from paragraph 3 about gushers?

- They make bringing the oil to the surface easier.
- They signal the presence of huge oil reserves.
- They waste more oil than they collect.
- They are unlikely to occur nowadays.

Paragraph 4:

Paragraph 5:

7. Which of the following strategies for oil exploration is described in paragraph 4 and paragraph 5?

- Drilling under the ocean’s surface
- Limiting drilling to accessible locations
- Using highly sophisticated drilling equipment
- Constructing technologically advanced drilling platforms

8. What does the development of the Alaskan oil field mentioned in paragraph 4 demonstrate?

- More oil is extracted from the sea than from land.
- Drilling for oil requires major financial investments.
- The global demand for oil has increased over the years.
- The North Slope of Alaska has substantial amounts of oil.

pumped down adjacent wells to help push the oil out. At a refinery, the crude oil from underground is separated into natural gas, gasoline, kerosene, and various oils. Petrochemicals such as dyes, fertilizer, and plastic are also manufactured from the petroleum.

As oil becomes increasingly difficult to find, the search for it is extended into more-hostile environments. The development of the oil field on the North Slope of Alaska and the construction of the Alaska pipeline are examples of the great expense and difficulty involved in new oil discoveries. Offshore drilling platforms extend the search for oil to the ocean's continental shelves—those gently sloping submarine regions at the edges of the continents. More than one-quarter of the world's oil and almost one-fifth of the world's natural gas come from offshore, even though offshore drilling is six to seven times more expensive than drilling on land. A significant part of this oil and gas comes from under the North Sea between Great Britain and Norway.

Of course, there is far more oil underground than can be recovered. It may be in a pool too small or too far from a potential market to justify the expense of drilling. Some oil lies under regions where drilling is forbidden, such as national parks or other public lands. Even given the best extraction techniques, only about 30 to 40 percent of the oil in a given pool can be brought to the surface. The rest is far too difficult to extract and has to remain underground.

Moreover, getting petroleum out of the

9. The word “sloping” in the passage is closest in meaning to

- Shifting
- Inclining
- Forming
- Rolling

Paragraph 5:

10. According to paragraph 5, the decision to drill for oil depends on all of the following factors EXCEPT

- permission to access the area where oil has been found
- the availability of sufficient quantities of oil in a pool
- the location of the market in relation to the drilling site
- the political situation in the region where drilling would occur

Paragraph 6:

11. The word “foul” in the passage is closest in meaning to

- Reach
- Flood
- Pollute
- Alter

12. In paragraph 6, the author’s primary purpose is to

- Provide examples of how oil exploration can endanger the environment
- Describe accidents that have occurred when oil activities were in progress
- Give an analysis of the effects of oil spills on the environment
- Explain how technology and legislation help reduce oil spills

Paragraph 2:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Unless something acts to halt this

ground and from under the sea and to the consumer can create environmental problems anywhere along the line. Pipelines carrying oil can be broken by faults or landslides, causing serious oil spills. Spillage from huge oil-carrying cargo ships, called tankers, involved in collisions or accidental groundings (such as the one off Alaska in 1989) can create oil slicks at sea. Offshore platforms may also lose oil, creating oil slicks that drift ashore and foul the beaches, harming the environment. Sometimes, the ground at an oil field may subside as oil is removed. The Wilmington field near Long Beach, California, has subsided nine meters in 50 years; protective barriers have had to be built to prevent seawater from flooding the area. Finally, the refining and burning of petroleum and its products can cause air pollution. Advancing technology and strict laws, however, are helping control some of these adverse environmental effects.

■ As muddy sediments are pressed together, the gas and small droplets of oil may be squeezed out of the mud and may move into sandy layers nearby. ■ Over long periods of time (millions of years), accumulations of gas and oil can collect in the sandy layers. ■ Both oil and gas are less dense than water, so they generally tend to rise upward through water-saturated rock and sediment. ■

migration, these natural resources will eventually reach the surface.

Where would the sentence best fit?

14.

“Petroleum” is a broad term that includes both crude oil and natural gas.

-
-
-

Answer choices

- Petroleum formation is the result of biological as well as chemical activity.
- The difficulty of finding adequate sources of oil on land has resulted in a greater number of offshore drilling sites.
- Petroleum extraction can have a negative impact on the environment.
- Petroleum tends to rise to the surface, since it is lower in density than water.
- Current methods of petroleum extraction enable oil producers to recover about half of the world's petroleum reserves.
- Accidents involving oil tankers occur when tankers run into shore reefs or collide with other vessels.



TPO 05

Paragraph1:

1. According to Paragraph1, what is true of plants that can grow in serpentine soil?

- They absorb micronutrients unusually well.
- They require far less calcium than most plants do.
- They are able to absorb nitrogen in its elemental state.
- They are typically crops raised for food.

MINERALS AND PLANTS

Research has shown that certain minerals are required by plants for normal growth and development. The soil is the source of these minerals, which are absorbed by the plant with the water from the soil. Even nitrogen, which is a gas in its elemental state, is normally absorbed from the soil as nitrate ions. Some soils are notoriously deficient in micro nutrients and are therefore unable to support most plant life. So-called

Paragraph2:

2. The word exhibit in the passage is closest in meaning to

- fight off
- show
- cause
- spread

3. According to Paragraph2, which of the following symptoms occurs in phosphorus-deficient plants but not in plants deficient in nitrogen or iron?

- Chlorosis on leaves
- Change in leaf pigmentation to a dark shade of green
- Short, stunted appearance of stems
- Reddish pigmentation on the leaves or stem

4. According to Paragraph2, a symptom of iron deficiency is the presence in young leaves of

- Deep red discoloration between the veins.
- White or yellow tissue between the veins.
- Dead spots between the veins.
- Characteristic dark green veins.

Paragraph3:

5. The word facilitates in the passage is closest in meaning to

- slows down
- affects
- makes easier
- focuses on

6. According to Paragraph3, what is the advantage of hydroponics for research on nutrient deficiencies in plants?

- It allows researchers to control what nutrients a plant receives.
- It allows researchers to observe

serpentine soils, for example, are deficient in calcium, and only plants able to tolerate low levels of this mineral can survive. In modern agriculture, mineral depletion of soils is a major concern, since harvesting crops interrupts the recycling of nutrients back to the soil.

Mineral deficiencies can often be detected by specific symptoms such as chlorosis (loss of chlorophyll resulting in yellow or white leaf tissue), necrosis (isolated dead patches), anthocyanin formation (development of deep red pigmentation of leaves or stem), stunted growth, and development of woody tissue in an herbaceous plant. Soils are most commonly deficient in nitrogen and phosphorus. Nitrogen-deficient plants exhibit many of the symptoms just described. Leaves develop chlorosis; stems are short and slender, and anthocyanin discoloration occurs on stems, petioles, and lower leaf surfaces. Phosphorus-deficient plants are often stunted, with leaves turning a characteristic dark green, often with the accumulation of anthocyanin. Typically, older leaves are affected first as the phosphorus is mobilized to young growing tissue. Iron deficiency is characterized by chlorosis between veins in young leaves.

Much of the research on nutrient deficiencies is based on growing plants hydroponically, that is, in soilless liquid nutrient solutions. This technique allows researchers to create solutions that selectively omit certain nutrients and then observe the resulting effects on the plants. Hydroponics has applications beyond basic research, since it facilitates the growing of greenhouse vegetables

the growth of a large number of plants simultaneously.

○It is possible to directly observe the roots of plants.

○It is unnecessary to keep misting plants with nutrient solutions.

7. The word suspended in the passage is closest in meaning to

- grown
- protected
- spread out
- hung

一想到新托福，就想到咱老无。

Paragraph5:

8. Why does the author mention herbs, shrubs, and trees?

○To provide examples of plant types that cannot tolerate high levels of harmful minerals.

○To show why so many plants are hyper accumulators.

○To help explain why hyper accumulators can be found in so many different places.

○To emphasize that hyper accumulators occur in a wide range of plant types.

9. The word afford in the passage is closest in meaning to

- offer
- prevent
- increase
- remove

Paragraph 6:

10. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Before considering

during winter. Acropionics, a technique in which plants are suspended and the roots misted with a nutrient solution, is another method for growing plants without soil.

While mineral deficiencies can limit the growth of plants, an overabundance of certain minerals can be toxic and can also limit growth. Saline soils, which have high concentrations of sodium chloride and other salts, limit plant growth, and research continues to focus on developing salt-tolerant varieties of agricultural crops. Research has focused on the toxic effects of heavy metals such as lead, cadmium, mercury, and aluminum; however, even copper and zinc, which are essential elements, can become toxic in high concentrations. Although most plants cannot survive in these soils, certain plants have the ability to tolerate high levels of these minerals.

Scientists have known for some time that certain plants, called hyper accumulators, can concentrate minerals at levels a hundredfold or greater than normal. ■ A survey of known hyper accumulators identified that 75 percent of them amassed nickel, cobalt, copper, zinc, manganese, lead, and cadmium are other minerals of choice. ■ Hyper accumulators run the entire range of the plant world. ■ They may be herbs, shrubs, or trees. ■ Many members of the mustard family, spurge family, legume family, and grass family are top hyper accumulators. Many are found in tropical and subtropical areas of the world, where accumulation of high concentrations of metals may afford some protection against plant-eating insects and microbial pathogens.

phytoremediation, hyper accumulating species of plants local to the target area must be identified.

○The investigation begins with an evaluation of toxic sites in the target area to determine the extent of contamination.

○The first step in phytoremediation is the planting of hyper accumulating plants in the area to be cleaned up.

○Mines and irrigation ponds can be kept from becoming contaminated by planting hyper accumulating species in targeted areas.

11. It can be inferred from Paragraph 6 that compared with standard practices for remediation of contaminated soils, phytoremediation

○does not allow for the use of the removed minerals for industrial purposes.

○can be faster to implement

○is equally friendly to the environment

○is less suitable for soils that need to be used within a short period of time.

12. Why does the author mention Indian mustard?

○To warn about possible risks involved in phytoremediation

○To help illustrate the potential of phytoremediation

○To show that hyper accumulating plants grow in many regions of the world

○To explain how zinc contamination can be reduced.

Only recently have investigators considered using these plants to clean up soil and waste sites that have been contaminated by toxic levels of heavy metals – an environmentally friendly approach known as phytoremediation. This scenario begins with the planting of hyper accumulating species in the target area, such as an abandoned mine or an irrigation pond contaminated by runoff. Toxic minerals would first be absorbed by roots but later relocated to the stem and leaves. A harvest of the shoots would remove the toxic compounds off site to be burned or composted to recover the metal for industrial uses. After several years of cultivation and harvest, the site would be restored at a cost much lower than the price of excavation and reburial, the standard practice for remediation of contaminated soils. For examples, in field trials, the plant alpine pennycress removed zinc and cadmium from soils near a zinc smelter, and Indian mustard, native to Pakistan and India, has been effective in reducing levels of selenium salts by 50 percent in contaminated soils.

Paragraph 5:

13. Look at the four squares [■] that

indicate where the following sentence could be added to the passage.

Certain minerals are more likely to be accumulated in large quantities than others.

Where could the sentence best fit?

14.

Plants need to absorb certain minerals from the soil in adequate quantities for normal growth and development.

-
-
-

Answer Choices

1. Some plants are able to accumulate extremely high levels of certain minerals and thus can be used to clean up soils contaminated with toxic levels of these minerals.

2. Though beneficial in lower levels, high levels of salts, other minerals, and heavy metals can be harmful to plants.

3. When plants do not absorb sufficient amounts of essential minerals, characteristic abnormalities result.

4. Because high concentrations of sodium chloride and other salts limit growth in most plants, much research has been done in an effort to develop salt-tolerant agricultural crops.

5. Some plants can tolerate comparatively low levels of certain minerals, but such plants are of little use for recycling nutrients back into depleted soils.

6. Mineral deficiencies in many plants can be cured by misting their roots with a nutrient solution or by transferring the plants to a soilless nutrient solution.

Paragraph1:

1. According to Paragraph1, all of the following are true statements about Melanesia, Micronesia, and Polynesia EXCEPT

○Collectively, these regions are traditionally known as Oceania.

THE ORIGIN OF THE PACIFIC ISLAND PEOPLE

The greater Pacific region, traditionally called Oceania, consists of three cultural areas: Melanesia,

○These islands of Micronesia are small and spread out

○Hawaii, Easter Island, and New Zealand mark the boundaries of Polynesia.

○Melanesia is situated to the north of Micronesia.

Paragraph2:

2. By stating that the theories are mutually exclusive the author means that

○if one of the theories is true, then all the others must be false

○the differences between the theories are unimportant

○taken together, the theories cover all possibilities

○the theories support each other

3. The word overwhelming in the passage is closest in meaning to

○powerful

○favorable

○current

○reasonable

4. According to Paragraph2, which of the following led some early researchers to believe that the Pacific islanders originally came from Egypt?

○Egyptians were known to have founded other great civilizations.

○Sailors from other parts of the world were believed to lack the skills needed to travel across the ocean.

○Linguistic, archaeological, and biological data connected the islands to Egypt.

○Egyptian accounts claimed responsibility for colonizing the Pacific as well as the Americas.

5. Which of the following can be inferred from Paragraph2 about early theories of where the first inhabitants of the Pacific islands came from?

Micronesia, and Polynesia. Melanesia, in the southwest Pacific, contains the large islands of New Guinea, the Solomons, Vanuatu, and New Caledonia. Micronesia, the area north of Melanesia, consists primarily of small scattered islands. Polynesia is the central Pacific area in the great triangle defined by Hawaii, Easter Island, and New Zealand. Before the arrival of Europeans, the islands in the two largest cultural areas, Polynesia and Micronesia, together contained a population estimated at 700,000.

Speculation on the origin of these Pacific islanders began as soon as outsiders encountered them, in the absence of solid linguistic, archaeological, and biological data, many fanciful and mutually exclusive theories were devised. Pacific islanders were variously thought to have come from North America, South America, Egypt, Israel, and India, as well as Southeast Asia. ■ Many older theories implicitly deprecated the navigational abilities and overall cultural creativity of the Pacific islanders. ■ For example, British anthropologists G. Elliot Smith and W. J. Perry assumed that only Egyptians would have been skilled enough to navigate and colonize the Pacific. ■ They inferred that the Egyptians even crossed the Pacific to found the great civilizations of the New World (North and South America). ■ In 1947 Norwegian adventurer Thor Heyerdahl drifted on a balsa-log raft westward with the winds and currents across the Pacific from South America to prove his theory that Pacific islanders were Native Americans (also called American Indians). Later Heyerdahl suggested that the Pacific was peopled by

○They were generally based on solid evidence.

○They tried to account for the origin of the characteristic features of the languages spoken by Pacific islanders.

○They assumed that the peoples living in Southeast Asia did not have the skills needed to sail to the Pacific islands.

○They questioned the ideas of G. Elliot Smith and W. J. Perry.

Paragraph3:

6. The word implements in the passage is closest in meaning to

- skills
- tools
- opportunities
- practices

7. All of the following are mentioned in Paragraph3 as required for successful colonization of the Pacific islands EXCEPT

○knowledge of various Austronesian languages

- a variety of fishing techniques
- navigational skills
- knowledge of plant cultivation

8. In Paragraph3, why does the author provide information about the types of crops grown and boats used in Southeast Asia during the period around 5000 B. C. E.?

○To evaluate the relative importance of agriculture and fishing to early Austronesian peoples.

○To illustrate the effectiveness of archaeological and linguistic methods in discovering details about life in ancient times.

○To contrast living conditions on the continent of Asia with living conditions on the Pacific islands.

○To demonstrate that people from this region had the skills and resources necessary to travel to and survive on the Pacific islands.

three migrations: by Native Americans from the Pacific Northwest of North America drifting to Hawaii, by Peruvians drifting to Easter Island, and by Melanesians. In 1969 he crossed the Atlantic in an Egyptian style reed boat to prove Egyptian influences in the Americas. Contrary to these theorists, the overwhelming evidence of physical anthropology, linguistics, and archaeology shows that the Pacific islanders came from Southeast Asia and were skilled enough as navigators to sail against the prevailing winds and currents.

The basic cultural requirements for the successful colonization of the Pacific islands include the appropriate boat-building, sailing, and navigation skills to get to the islands in the first place, domesticated plants and gardening skills suited to often marginal conditions, and a varied inventory of fishing implements and techniques. It is now generally believed that these prerequisites originated with peoples speaking Austronesian languages (a group of several hundred related languages) and began to emerge in Southeast Asia by about 5000 B. C.E. The culture of that time, based on archaeology and linguistic reconstruction, is assumed to have had a broad inventory of cultivated plants including taro, yams, banana, sugarcane, breadfruit, coconut, sago, and rice. Just as important, the culture also possessed the basic foundation for an effective maritime adaptation, including outrigger canoes and a variety of fishing techniques that could be effective for overseas voyaging.

Contrary to the arguments of some

Paragraph4:

9. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage?

Incorrect choices change the meaning in important ways or leave out essential information.

○Some people have argued that the Pacific was settled by traders who became lost while transporting domesticated plants and animals.

○The original Polynesian settlers were probably marooned on the islands, but they may have been joined later by carefully prepared colonization expeditions.

○Although it seems reasonable to believe that colonization expeditions would set out fully stocked, this is contradicted by much of the evidence.

○The settlement of the Pacific islands was probably intentional and well planned rather than accidental as some people have proposed.

10. The word undisputed in the passage is closest in meaning to

- mysterious
- unexpected
- acknowledged
- significant

11. According to Paragraph4, which of the following is NOT an explanation for why a group of people might have wanted to colonize the Pacific islands?

○As their numbers increased, they needed additional territory.

○The winds and currents made the islands easy to reach.

○The political situation at home made emigration desirable,

○They found exploration challenging and exciting.

12. Why does the author mention the views

that much of the pacific was settled by Polynesians accidentally marooned after being lost and adrift, it seems reasonable that this feat was accomplished by deliberate colonization expeditions that set out fully stocked with food and domesticated plants and animals. Detailed studies of the winds and currents using computer simulations suggest that drifting canoes would have been a most unlikely means of colonizing the Pacific. These expeditions were likely driven by population growth and political dynamics on the home islands, as well as the challenge and excitement of exploring unknown waters. Because all Polynesians, Micronesians, and many Melanesians speak Austronesian languages and grow crops derived from Southeast Asia, all these peoples most certainly derived from that region and not the New World or elsewhere. The undisputed pre-Columbian presence in Oceania of the sweet potato, which is a New World domesticate, has sometimes been used to support Heyerdahl's "American Indians in the Pacific" theories. However, this is one plant out of a long list of Southeast Asian domesticates. As Patrick Kirch, an American anthropologist, points out, rather than being brought by rafting South Americans, sweet potatoes might just have easily been brought back by returning Polynesian navigators who could have reached the west coast of South America.

of “Patrick Kirch”?

○To present evidence in favor of Heyerdahl’s idea about American Indians reaching Oceania

○To emphasize the familiarity of Pacific islanders with crops from many different regions of the world

○To indicate that supposed proof for Heyerdahl’s theory has an alternative explanation.

○To demonstrate that some of the same crops were cultivated in both South America and Oceania.

Paragraph2:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Later theories concentrate on journeys in the other direction.

Where could the sentence best fit?

14.

Together, Melanesia, Micronesia, and Polynesia make up the region described as the Pacific islands, or Oceania.

-
-
-

Answer Choices

1. The first Europeans to reach the area assumed that the islands’ original inhabitants must have drifted to Oceania, perhaps from Egypt or the Americas.

2. It is now believed that the process of colonization required a great deal of skill, determination, and planning and could not have happened by chance.

3. Using linguistic and archaeological evidence, anthropologists have determined that the first Pacific islanders were Austronesian people from Southeast Asia.

4. New evidence suggests that, rather than being isolated, Pacific islanders engaged in trade

and social interaction with peoples living in Southeast Asia.

5. Although early colonizers of the islands probably came from agriculture-based societies, they were obliged to adopt an economy based on fishing

6. Computer simulations of the winds and currents in the Pacific have shown that reaching the Pacific islands was probably much easier than previously thought.

Paragraph1:

1. The word significant in the passage is closest in meaning to

- numerous
- important
- unexplained
- sudden

2. The word relatively in the passage is closest in meaning to

- surprisingly
- collectively
- comparatively
- characteristically

3. The word diversification in the passage is closest in meaning to

- emergence of many varieties
- steady decline in number
- gradual increase in body size
- sudden disappearance

Paragraph2:

4. The period discussed in the passage is referred to as an explosion because it

○occurred 0.6 billion years ago, late in Earth's history

○was characterized by the unusually fast evolution of many new life-forms.

○Was characterized by widespread animal extinction

○Was characterized by violent volcanic

THE CAMBRIAN EXPLOSION

The geologic timescale is marked by significant geologic and biological events, including the origin of Earth about 4.6 billion years ago, the origin of life about 3.5 billion years ago, the origin of eukaryotic life-forms (living things that have cells with true nuclei) about 1.5 billion years ago, and the origin of animals about 0.6 billion years ago. The last event marks the beginning of the Cambrian period. Animals originated relatively late in the history of Earth – in only the last 10 percent of Earth's history. During a geologically brief 100-million-year period, all modern animal groups (along with other animals that are now extinct) evolved. This rapid origin and diversification of animals is often referred to as “the Cambrian explosion.”

One interpretation regarding the absence of fossils during this important 100-million-year period is that early animals were soft bodied and simply did not fossilize. ■ Fossilization of soft-bodied animals is less likely than fossilization of hard-bodied animals, but it does occur. ■ Conditions that promote fossilization of soft-bodied animals include very rapid covering by sediments

eruptions

5. According to Paragraph2, which of the following is NOT a question that paleontologists asked about the Cambrian explosion?

- Why was the origin of life a simple step in Earth's history?
- Why did it take so long for multicellular organisms to develop?
- Why did animal life evolve so rapidly?
- Why does the fossil record lack evidence of animal evolution during that time?

6. Which of the following best describes the relationship between Paragraph2 and Paragraph3?

- Paragraph2 puts forward several scientific claims, one of which is rejected in Paragraph3
- Paragraph2 poses several questions, and Paragraph3 offers a possible answer to one of them
- Paragraph2 presents outdated traditional views, while Paragraph3 presents the current scientific conclusions.
- Paragraph2 introduces a generalization that is illustrated by specific examples in Paragraph3

Paragraph3:

7. The word promote in the passage is closest in meaning to

- complicate
- prevent
- encourage
- affect

Paragraph4:

8. Which of the following is NOT mentioned in Paragraph4 as being true of the Ediacara formation?

- It contains fossils that date back to the Precambrian period.
- It contains only soft-bodied animal fossils.
- It is located on a single site in Australia.

that create an environment that discourages decomposition. ■ In fact, fossil beds containing soft-bodied animals have been known for many years. ■

One interpretation regarding the absence of fossils during this important 100-million-year period is that early animals were soft bodied and simply did not fossilize. Fossilization of soft-bodied animals is less likely than fossilization of hard-bodied animals, but it does occur. Conditions that promote fossilization of soft-bodied animals include very rapid covering by sediments that create an environment that discourages decomposition. In fact, fossil beds containing soft-bodied animals have been known for many years.

The Ediacara fossil formation, which contains the oldest known animal fossils, consists exclusively of soft-bodied forms. Although named after a site in Australia, the Ediacara formation is worldwide in distribution and dates to Precambrian times. This 700-million-year-old formation gives few clues to the origins of modern animals, however, because paleontologists believe it represents an evolutionary experiment that failed. It contains no ancestors of modern animal groups.

A slightly younger fossil formation containing animal remains is the Tommotian formation, named after a locale in Russia. It dates to the very early Cambrian period, and it also contains only soft-bodied forms. At one time, the animals present in these fossil beds were assigned to various modern animal

- It does not contain any fossils of the ancestors of modern animals.

Paragraph5:

9. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○The animals found in the Tommotian fossil bed were once thought to belong to a variety of modern animal groups, but now they are thought to have descended from a single group.

○Animals in the Tommotian fossil beds were initially assigned to modern animal groups but are now thought to belong to groups that emerged and died out during the Cambrian period.

○Though at first they thought otherwise, paleontologists now agree that the animals in the Tommotian have body forms from which modern animals have descended.

○It is unclear whether the Tommotian fossils from the early Cambrian period represent unique body forms or whether they should be assigned to various modern animal groups.

Paragraph6:

10. Why does the author mention Anomalocans and Wiwaxia?

○To contrast predators with animals that eat plants such as algae

○To question the effects of rapid mud slides on fossilization

○To suggest that much is still unknown about animals found in the Burgess Shale

○To provide examples of fossils that cannot be assigned to a modern animal group

11. Sidneyia is an example of

- a relative of Anomalocaris and Wiwaxia
- a previously unknown Burgess Shale animal

groups, but most paleontologists now agree that all Tommotian fossils represent unique body forms that arose in the early Cambrian period and disappeared before the end of the period, leaving no descendants in modern animal groups.

A third fossil formation containing both soft-bodied and hard-bodied animals provides evidence of the result of the Cambrian explosion. This fossil formation, called the Burgess Shale, is in Yoho National Park in the Canadian Rocky Mountains of British Columbia. Shortly after the Cambrian explosion, mud slides rapidly buried thousands of marine animals under conditions that favored fossilization. These fossil beds provide evidence of about 32 modern animal groups, plus about 20 other animal body forms that are so different from any modern animals that they cannot be assigned to any one of the modern groups. These unassignable animals include a large swimming predator called Anomalocaris and a soft-bodied animal called Wiwaxia, which ate detritus or algae. The Burgess Shale formation also has fossils of many extinct representatives of modern animal groups. For example, a well-known Burgess Shale animal called Sidneyia is a representative of a previously unknown group of arthropods (a category of animals that includes insects, spiders, mites, and crabs).

Fossil formations like the Burgess Shale show that evolution cannot always be thought of as a slow progression. The Cambrian explosion involved rapid evolutionary diversification, followed by the extinction of many unique animals.

○an extinct member of a currently existing category of animals

○an animal that cannot be assigned to any modern animal group

Paragraph7:

12. What can be inferred from Paragraph7 about why the Cambrian explosion is so unusual?

○It generated new ecological niches through the extinction of many unique animals.

○It was a period of rapid evolution, and evolution is often thought of as a slow process.

○It is a period whose evolutionary sequences are clearly marked.

○It generated a very large number of ancient fossil beds containing soft-bodied animals.

Why was this evolution so rapid? No one really knows. Many zoologists believe that it was because so many ecological niches were available with virtually no competition from existing species. Will zoologists ever know the evolutionary sequences in the Cambrian explosion? Perhaps another ancient fossil bed of soft-bodied animals from 600-million-year-old seas is awaiting discovery.

Paragraph3:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

It is relatively rare because the fossilization of soft-bodied animals requires a special environment.

Where could the sentence best fit?

14.

The term “Cambrian explosion” refers to the geologically brief period during which all modern animal groups evolved.

-
-
-

Answer Choices

1. Little is known about the stages of evolution during the Cambrian period, in part because early animals were soft bodied and could fossilize only under particular conditions.

2. While animal fossils from before the Cambrian explosion have no modern descendants, many animals that evolved during the Cambrian explosion can be assigned to

One interpretation regarding the absence of fossils during this important 100-million-year period is that early animals were soft bodied and simply did not fossilize. ■ Fossilization of soft-bodied animals is less likely than fossilization of hard-bodied animals, but it does occur. ■ Conditions that promote fossilization of soft-bodied animals include very rapid covering by sediments that create an environment that discourages decomposition. ■ In fact, fossil beds containing soft-bodied animals have been known for many years. ■

modern groups.

3. The Cambrian period is significant because it marks the emergence of eukaryotic life-forms – organisms that have cells with true nuclei

4. The Ediacara fossil formation provides the most information about the Cambrian explosion, while the earlier, Tommotian and Burgess Shale formations give clues about Precambrian evolution.

5. Zoologists are awaiting the discovery of a 600-million-year-old fossil formation in order to be able to form a theory of how animal evolution progressed.

6. Although the reasons for the rapid evolution of animals during the Cambrian period are not known, one proposed explanation is an abundance of niches with a lack of competitors.

TPO 06

Paragraph 1□

Paragraph 2:

1. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information□

○ Running water was the best power source for factories since it could keep machines operating continuously but since it was abundant only in Lancashire and Scotland, most mills and factories that were located elsewhere could not be water driven□

○ The disadvantage of using waterpower is that streams do not necessarily flow in places that are the most suitable for factories which explains why so many water-powered grain and textile mills were located in undesirable places

○ Since machines could be operated

Powering the Industrial Revolution

In Britain one of the most dramatic changes of the Industrial Revolution was the harnessing of power□Until the reign of George III (1760-1820)□available sources of power for work and travel had not increased since the Middle Ages. There were three sources of power□animal or human muscles□the wind, operating on sail or windmill; and running water. Only the last of these was suited at all to the continuous operating of machines, and although waterpower abounded in Lancashire and Scotland and ran grain mills as well as textile mills, it had one great disadvantage: streams flowed where nature intended them to and water-driven factories had to

continuously only where running water was abundant, grain and textile mills as well as other factories tended to be located only in Lancashire and Scotland□

○ Running water was the only source of power that was suitable for the continuous operation of machines, but to make use of it factories had to be located where the water was, regardless of whether such locations made sense otherwise.

2. Which of the following best describes the relation of paragraph 2 to paragraph 1?

○ Paragraph 2 shows how the problem discussed in paragraph 1 arose.

○ Paragraph 2 explains how the problem presented in paragraph 1 came to be solved□

○ Paragraph 2 provides a more technical discussion of the problem introduced in paragraph 1.

○ Paragraph 2 shows why the problem discussed in paragraph 1 was especially important to solve.

3. The word exploited in the passage is closest in meaning to

- utilized
- recognized
- examined
- fully understood

4. The word vastly in the passage is closest in meaning to

- quickly
- ultimately
- greatly
- initially

5. According to paragraph 2□the atmospheric engine was slow because

○ it had been designed to be used in coal mines

○ the cylinder had to cool between each stroke

be located on their banks whether or not the location was desirable for other reasons. Furthermore, even the most reliable waterpower varied with the seasons and disappeared in a drought, the new age of machinery, in short, could not have been born without a new source of both movable and constant power.

The source had long been known but not exploited. Early in the century, a pump had come into use in which expanding steam raised a piston in a cylinder, and atmospheric pressure brought it down again when the steam condensed inside the cylinder to form a vacuum□This “atmospheric engine,” invented by Thomas Savery and vastly improved by his partner□Thomas Newcomen, embodied revolutionary principles, but it was so slow and wasteful of fuel that it could not be employed outside the coal mines for which it had been designed. In the 1760s, James Watt perfected a separate condenser for the steam, so that the cylinder did not have to be cooled at every stroke; then he devised a way to make the piston turn a wheel and thus convert reciprocating (back and forth) motion into rotary motion. He thereby transformed an inefficient pump of limited use into a steam engine of a thousand uses. The final step came when steam was introduced into the cylinder to drive the piston backward as well as forward thereby increasing the speed of the engine and cutting its fuel consumption.

Watt's steam engine soon showed what it could do. It liberated industry from dependence on running water□The engine eliminated water in the mines by

○ it made use of expanding steam to raise the piston in its cylinder

○ it could be operated only when a large supply of fuel was available

Paragraph 2:

6. According to paragraph 2, Watt's steam engine differed from earlier steam engines, in each of the following ways, except:

- It used steam to move a piston in a cylinder.
- It worked with greater speed.
- It was more efficient in its use of fuel.
- It could be used in many different ways.

Paragraph 3:

7. In paragraph 3 the author mentions William Murdoch's invention of a new form of nighttime illumination in order to

- indicate one of the important developments made possible by the introduction of Watt's steam engine
- make the point that Watt's steam engine was not the only invention of importance to the Industrial Revolution
- illustrate how important coal was as a raw material for the Industrial Revolution
- provide an example of another eighteenth-century invention that used steam as a power source

8. The phrase grew accustomed to in the passage is closest in meaning to

- began to prefer
- wanted to have
- became used to
- insisted on

Paragraph 4:

9. The word retained in the passage is closest in meaning to

- gained
- established
- profited from

driving efficient pumps, which made possible deeper and deeper mining. The ready availability of coal inspired William Murdoch during the 1790s to develop the first new form of nighttime illumination to be discovered in a millennium and a half. Coal gas rivaled smoky oil lamps and flickering candles, and early in the new century, well-to-do Londoners grew accustomed to gaslit houses and even streets. Iron manufacturers which had starved for fuel while depending on charcoal also benefited from ever-increasing supplies of coal; blast furnaces with steam-powered bellows turned out more iron and steel for the new machinery. Steam became the motive force of the Industrial Revolution as coal and iron ore were the raw materials□

By 1800 more than a thousand steam engines were in use in the British Isles, and Britain retained a virtual monopoly on steam engine production until the 1830s. Steam power did not merely spin cotton and roll iron; early in the new century it also multiplied ten times over the amount of paper that a single worker could produce in a day. At the same time, operators of the first printing presses run by steam rather than by hand found it possible to produce a thousand pages in an hour rather than thirty. Steam also promised to eliminate a transportation problem not fully solved by either canal boats or turnpikes□Boats could carry heavy weights, but canals could not cross hilly terrain; turnpikes could cross the hills, but the roadbeds could not stand up under great weights. These problems needed still another solution, and the ingredients for it lay close at hand. In some industrial regions,

- maintained

10. According to paragraph 4, which of the following statements about steam engines is true?

- They were used for the production of paper but not for printing
- By 1800, significant numbers of them were produced outside of Britain
- They were used in factories before they were used to power trains
- They were used in the construction of canals and turnpikes

11. According to paragraph 4, providing a machine to take the place of the horse involved combining which two previously separate ingredients?

- Turnpikes and canals
- Stationary steam engines and wagons with flanged wheels
- Metal rails in roadbeds and wagons capable of carrying heavy loads
- Canal boats and heavily laden wagons

12. Look at the four squares [] that indicate where the following sentence could be added to the passage □

The factories did not have to go to the streams when power could come to the factories □

Where would the sentence best fit?

13. The Industrial Revolution would not have been possible without a new source of power that was efficient, movable □ and continuously available □

-
-
-

Answer Choices

1. In the early eighteenth century, Savery and Newcomen discovered that expanding steam could be used to raise a

heavily laden wagons, with flanged wheels, were being hauled by horses along metal rails; and the stationary steam engine was puffing in the factory and mine □ Another generation passed; before Inventors succeeded in combining these ingredients by putting the engine on wheels and the wheels on the rails, so as to provide a machine to take the place of the horse. Thus the railroad age sprang from what had already happened in the eighteenth century.

Paragraph 3: Watt's steam engine soon showed what it could do. It liberated industry from dependence on running water □ The engine eliminated water in the mines by driving efficient pumps, which made possible deeper and deeper mining. The ready availability of coal inspired William Murdoch during the 1790s to develop the first new form of nighttime illumination to be discovered in a millennium and a half.

piston in a cylinder.

2. Watt's steam engine played a leading role in greatly increasing industrial production of all kinds.
3. Until the 1830s Britain was the world's major producer of steam engines.
4. In the mid-1700s James Watt transformed an inefficient steam pump into a fast□flexible□fuel-efficient engine.
5. In the 1790s William Murdoch developed a new way of lighting houses and streets using coal gas.
6. The availability of steam engines was a major factor in the development of railroads□which solved a major transportation problem .

Paragraph 1:

1. The word rudimentary in the passage is closest in meaning to
 - thorough
 - strict
 - basic
 - occasional
2. According to paragraph 1 which of the following statements about William Smith is NOT true?
 - Smith learned surveying by reading and by apprenticing for a local surveyor
 - Smith's family lived in a small English town and possessed little wealth□
 - Smith learned about fossils from books he borrowed from his uncle□
 - Smith eventually left his village to work on the excavation of an English canal.

Paragraph 2:

3. Which of the following can be inferred from paragraph 2 about canal building?
 - Canals were built primarily in the south of England rather than in other regions□

William Smith

In 1769 in a little town in Oxfordshire, England, a child with the very ordinary name of William Smith was born into the poor family of a village blacksmith. He received rudimentary village schooling but mostly he roamed his uncle's farm collecting the fossils that were so abundant in the rocks of the Cotswold hills□When he grew older William Smith taught himself surveying from books he bought with his small savings and at the age of eighteen he was apprenticed to a surveyor of the local parish. He then proceeded to teach himself geology and when he was twenty-four, he went to work for the company that was excavating the Somerset Coal Canal in the south of England□

This was before the steam locomotive, and canal building was at its height. The companies building the canals to transport coal needed surveyors

- Canal building decreased after the steam locomotive was invented□
- Canal building made it difficult to study rock strata which often became damaged in the process□
- Canal builders hired surveyors like Smith to examine exposed rock strata□

4. According to paragraph 2, which of the following is true of the map published by William Smith?

- It indicates the locations of England's major canals
- It became most valuable when the steam locomotive made rail travel possible
- The data for the map were collected during Smith's work on canals
- It is no longer regarded as a geological masterpiece

5. The word meticulously in the passage is closest in meaning to

- carefully
- quickly
- frequently
- obviously

一想到新托福，就想到咱老无。

Paragraph 3:

6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information□

○ The discovery of regional differences in the sequences of rocks led geologists to believe that rock types could someday become reliable time markers□

○ Careful analysis of strata revealed that rocks cannot establish geological time because the pattern of rock layers varies from place to place□

○ Smith's catalogs of rock strata indicated that the sequences of rocks are different from place to place and from region to region□

to help them find the coal deposits worth mining as well as to determine the best courses for the canals. This job gave Smith an opportunity to study the fresh rock outcrops created by the newly dug canal. He later worked on similar jobs across the length and breadth of England all the while studying the newly revealed strata and collecting all the fossils he could find□Smith used mail coaches to travel as much as 10000 miles per year□In 1815 he published the first modern geological map “A Map of the Strata of England and Wales with a Part of Scotland”, map so meticulously researched that it can still be used today□

In 1831 when Smith was finally recognized by the Geological Society of London as the “father of English geology”, was not only for his maps but also for something even more important□Ever since people had begun to catalog the strata in particular outcrops, there had been the hope that these could somehow be used to calculate geological time□But as more and more accumulations of strata were cataloged in more and more places, it became clear that the sequences of rocks sometimes differed from region to region and that no rock type was ever going to become a reliable time marker throughout the world□Even without the problem of regional differences, rocks present a difficulty as unique time markers Quartz is quartz—a silicon ion surrounded by four oxygen ions—there's no difference at all between two-million-year-old Pleistocene quartz and Cambrian quartz created over 500 million years ago□

○Because people did not catalog regional differences in sequences of rocks. It was believed that rocks could never be reliable time markers

7. Why does the author use the phrase "Quartz is quartz"?

○To describe how the differences between Pleistocene and Cambrian quartz reveal information about dating rocks

○To point out that the chemical composition of quartz makes it more difficult to date than other rocks

○To provide an example of how regional differences in rock sequences can make a particular rock difficult to date

○To explain that rocks are difficult to use for dating because their chemical compositions always remain the same over time

As he collected fossils from strata throughout England, Smith began to see that the fossils told a different story from the rocks. Particularly in the younger strata the rocks were often so similar that he had trouble distinguishing the strata, but he never had trouble telling the fossils apart. While rock between two consistent strata might in one place be shale and in another sandstone, the fossils in that shale or sandstone were always the same. Some fossils endured through so many millions of years that they appear in many strata, but others occur only in a few strata, and a few species had their births and extinctions within one particular stratum. Fossils are thus identifying markers for particular periods in Earth's history.

Paragraph 4:

8. According to paragraph 4, it was difficult for Smith to distinguish rock strata because

○the rocks from different strata closely resembled each other

○he was often unable to find fossils in the younger rock strata

○their similarity to each other made it difficult for him to distinguish one rock type from another

○the type of rock between two consistent strata was always the same

9. The word endured in the passage is closest in meaning to

○vanished

○developed

○varied

○survived

Paragraph 5:

10. The word "virtually" in the passage is closest in meaning to

○possibly

Not only could Smith identify rock strata by the fossils they contained, he could also see a pattern emerging. Certain fossils always appear in more ancient sediments, while others begin to be seen as the strata become more recent. ■ By following the fossils, Smith was able to put all the strata of England's earth into relative temporal sequence. ■ About the same time, Georges Cuvier made the same discovery while studying the rocks around Paris. ■ Soon it was realized that this principle of faunal(animal)succession was valid not only in England or France but virtually everywhere. ■ It was actually a principle of floral succession as well, because plants showed the same transformation through time as did fauna. Limestone may be found in the Cambrian or 300 million years later—in the Jurassic strata but a trilobite—the ubiquitous marine arthropod that had its birth in the

- absolutely
- surprisingly
- nearly

Cambrian—will never be found in Jurassic strata, nor a dinosaur in the Cambrian.

11. Select the TWO answer choices that are true statements based upon the discussion of the principle of faunal succession in paragraph 5. To receive credit, you must select TWO answers.

- It was a principle that applied to fauna but not to flora
- It was discovered independently by two different geologists
- It describes how fossils are distributed in rock strata
- It explains why plants and animals undergo transformations through time

12. In mentioning "trilobite", the author is making which of the following points?

- Fossils cannot be found in more than one rock stratum
- Faunal succession can help put rock layers in relative temporal sequence
- Faunal succession cannot be applied to different strata composed of the same kind of rock
- The presence of trilobite fossils makes it difficult to date a rock

Paragraph 5:

13. Look at the four squares [] that indicate where the following sentence could be added to the passage

The findings of these geologists inspired others to examine the rock and fossil records in different parts of the world

Where would the sentence best fit?

14. William Smith's contributions to geology have increased our knowledge of the Earth's history

•

•

● Answer Choices

1. Smith found success easily in his profession because he came from a family of geologists and surveyors.
2. Smith's work on canals allowed him to collect fossils and study rock layers all over England.
3. Smith found that fossils are much more reliable indicators of geological time than rock strata are.
4. Smith was named "the father of English geology" for his maps rather than for his other contributions to the field.
5. Smith and Cuvier discovered that fossil patterns are easier to observe in ancient rock strata than in younger rock strata.
6. The discovery of the principle of faunal succession allowed geologists to establish the relative age of Earth's rock layers.

Paragraph 2:

1. What purpose does paragraph 2 serve in the larger discussion of children's inability to recall early experiences?

○ To argue that the ones that are not substantiated by evidence should generally be considered unreliable

○ To argue that the hypotheses mentioned in paragraph 2 have been more thoroughly researched than have the theories mentioned later in the passage

○ To explain why some theories about infantile amnesia are wrong before presenting ones more likely to be true

○ To explain why infantile amnesia is of great interest to researchers

2. The word plausible in the passage is closest in meaning to

- flexible
- believable
- debatable

Infantile Amnesia

What do you remember about your life before you were three? Few people can remember anything that happened to them in their early years. Adults' memories of the next few years also tend to be scanty. Most people remember only a few events--usually ones that were meaningful and distinctive such as being hospitalized or a sibling's birth.

How might this inability to recall early experiences be explained? The sheer passage of time does not account for it; adults have excellent recognition of pictures of people who attended high school with them 35 years earlier.

Another seemingly plausible explanation--that infants do not form enduring memories at this point in development--also is incorrect. Children two and a half to three years old remember experiences that occurred in their first year, and eleven month olds

○predictable

3. The word phenomenon in the passage is closest in meaning to

- exception
- repetition
- occurrence
- idea

4. All of the following theories about the inability to recall early experiences are rejected in paragraph 2 EXCEPT□

- The ability to recall an event decreases as the time after the event increases□
- Young children are not capable of forming memories that last for more than a short time□
- People may hold back sexually meaningful memories□
- Most events in childhood are too ordinary to be worth remembering□

Paragraph 3:

5. What does paragraph 3 suggest about long-term memory in children?

- Maturation of the frontal lobes of the brain is important for the long-term memory of motor activities but not verbal descriptions□
- Young children may form long-term memories of actions they see earlier than of things they hear or are told□
- Young children have better long-term recall of short verbal exchanges than of long ones□
- Children's long-term recall of motor activities increases when such activities are accompanied by explicit verbal descriptions

Paragraph 4:

6. According to paragraph 4□what role may storytelling play in forming childhood memories?

- It may encourage the physiological maturing of the brain

remember some events a year later. Nor does the hypothesis that infantile amnesia reflects repression---or holding back---of sexually charged episodes explain the phenomenon□While such repression may occur□people cannot remember ordinary events from the infant and toddler periods either□

Three other explanations seem more promising. One involves physiological changes relevant to memory. Maturation of the frontal lobes of the brain continues throughout early childhood, and this part of the brain may be critical for remembering particular episodes in ways that can be retrieved later. Demonstrations of infants' and toddlers' long-term memory have involved their repeating motor activities that they had seen or done earlier□such as reaching in the dark for objects, putting a bottle in a doll's mouth, or pulling apart two pieces of a toy. The brain's level of physiological maturation may support these types of memories□but not ones requiring explicit verbal descriptions.

A second explanation involves the influence of the social world on children's language use□Hearing and telling stories about events may help children store information in ways that will endure into later childhood and adulthood□Through hearing stories with a clear beginning□middle, and ending children may learn to extract the gist of events in ways that they will be able to describe many years later. Consistent with this view parents and children increasingly engage in discussions of past events when children are about three years old. However, hearing such stories is not sufficient for younger children to form enduring memories. Telling such stories to two year olds does not seem to

○It may help preschool children tell the difference between ordinary and unusual memories□

○It may help preschool children retrieve memories quickly□

○It may provide an ordered structure that facilitates memory retrieval

Paragraph 5:

7. The word critically in the passage is closest in meaning to

- fundamentally
- partially
- consistently
- subsequently

8. The word “perspective” in the passage is closest in meaning to

- system
- theory
- source
- viewpoint

Paragraph 6:

9. The phrase “This view” in the passage refers to the belief that

○the ability to retrieve a memory partly depends on the similarity between the encoding and retrieving process

○the process of encoding information is less complex for adults than it is for young adults and infants

○infants and older children are equally dependent on discussion of past events for the retrieval of information

○infants encode information in the same way older children and adults do

10. According to paragraphs 5 and 6□one disadvantage very young children face in processing information is that they cannot

- process a lot of information at one time
- organize experiences according to type
- block out interruptions

produce long-lasting verbalizable memories.

A third likely explanation for infantile amnesia involves incompatibilities between the ways in which infants encode information and the ways in which older children and adults retrieve it. Whether people can remember an event depends critically on the fit between the way in which they earlier encoded the information and the way in which they later attempt to retrieve it. The better able the person is to reconstruct the perspective from which the material was encoded, the more likely that recall will be successful.

This view is supported by a variety of factors that can create mismatches between very young children's encoding and older children's and adults' retrieval efforts. The world looks very different to a person whose head is only two or three feet above the ground than to one whose head is five or six feet above it. Older children and adults often try to retrieve the names of things they saw, but infants would not have encoded the information verbally□General knowledge of categories of events such as a birthday party or a visit to the doctor's office helps older individuals encode their experiences, but again, infants and toddlers are unlikely to encode many experiences within such knowledge structures□

These three explanations of infantile amnesia are not mutually exclusive□indeed, they support each other. Physiological immaturity may be part of why infants and toddlers do not form extremely enduring memories, even when they hear stories that promote such remembering in preschoolers. Hearing the stories may lead preschoolers to

- interpret the tone of adult language

Paragraph 7:

11. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information□

○Incomplete physiological development may partly explain why hearing stories does not improve long-term memory in infants and toddlers

○One reason why preschoolers fail to comprehend the stories they hear is that they are physiologically immature

○Given the chance to hear stories□infants and toddlers may form enduring memories despite physiological immaturity□

○Physiologically mature children seem to have no difficulty remembering stories they heard as preschoolers□

12. How does paragraph 7 relate to the earlier discussion of infantile amnesia?

○It introduces a new theory about the causes of infantile amnesia.

○It argues that particular theories discussed earlier in the passage require further research.

○It explains how particular theories discussed earlier in the passage may work in combination.

○It evaluates which of the theories discussed earlier is most likely to be true.

encode aspects of events that allow them to form memories they can access as adults□Conversely□improved encoding of what they hear may help them better understand and remember stories and thus make the stories more useful for remembering future events. Thus, all three explanations-- physiological maturation hearing and producing stories about past events□and improved encoding of key aspects of events--seem likely to be involved in overcoming infantile amnesia□

Paragraph 1:

13. Look at the four squares[■]that indicate where the following sentence could be added to the passage

Other important occasions are school graduations and weddings.

Where would the sentence best fit?

14. There are several possible explanations why people cannot easily remember their early

What do you remember about your life before you were three? ■ Few people can remember anything that happened to them in their early years□ ■ Adults' memories of the next few years also tend to be scanty□ ■ Most people remember only a few events--usually ones that were meaningful and distinctive□ such as being hospitalized or a sibling's birth. ■

childhoods□

-
-
-

Answer Choices

1.Preschoolers typically do not recall events from their first year.

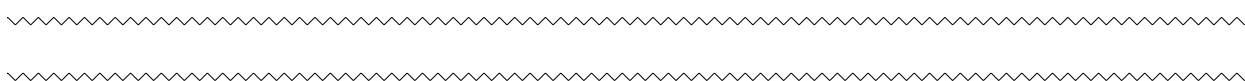
2.Frontal lobe function of the brain may need to develop before memory retrieval can occur.

3.Children recall physical activities more easily if they are verbalized□

4. The opportunity to hear chronologically narrated stories may help three-year-old children produce long-lasting memories□

5.The content of a memory determines the way in which it is encoded

6.The contrasting ways in which young children and adults process information may determine their relative success in remembering□



TPO 07

Paragraph 1

1□The word “objective” in the passage is closest in meaning to

- achievement
- requirement
- purpose
- feature

2□Which of the following is NOT mentioned in paragraph 1 as a change that occurred in the fauna of the Mediterranean?

- Most invertebrate species disappeared during a wave of extinctions.
- A few hardy species wiped out many of the Mediterranean’s invertebrates.
- Some invertebrates migrated to

The Geologic History of the Mediterranean

In 1970 geologists Kenneth J. Hsu and William B.F. Ryan were collecting research data while aboard the oceanographic research vessel Glomar Challenger. An objective of this particular cruise was to investigate the floor of the Mediterranean and to resolve questions about its geologic history. One question was related to evidence that the invertebrate fauna (animals without spines) of the Mediterranean had changed abruptly about 6 million years ago. Most of the older organisms were nearly wiped out, although a few hardy

Atlantic Ocean.

○New species of fauna populated the Mediterranean when the old migrants returned.

Paragraph 3

3 □ What does the author imply by saying “Not a single pebble was found that might have indicated that the pebbles came from the nearby continent”?

○The most obvious explanation for the origin of the pebbles was not supported by the evidence.

○The geologists did not find as many pebbles as they expected.

○The geologists were looking for a particular kind of pebble.

○The different pebbles could not have come from only one source.

4 □ Which of the following can be inferred from paragraph 3 about the solid gypsum layer?

○It did not contain any marine fossil.

○It had formed in open-ocean conditions.

○It had once been soft, deep-sea mud.

○It contained sediment from nearby deserts.

5. Select the TWO answer choice from paragraph 3 that identify materials discovered in the deepest part of the Mediterranean basin. To receive credit you must select TWO answers.

○Volcanic rock fragments.

○This silt layers

○Soft, deep-sea mud

○Crystalline salt

6. What is the main purpose of paragraph 3?

○To describe the physical evidence collected by Hsu and Ryan.

○To explain why some of the questions posed earlier in the passage could not be

species survived. A few managed to migrate into the Atlantic. Somewhat later, the migrants returned, bringing new species with them. Why did the near extinction and migrations occur?

■Another task for the Glomar Challenger's scientists was to try to determine the origin of the domelike masses buried deep beneath the Mediterranean seafloor. ■These structures had been detected years earlier by echo-sounding instruments, but they had never been penetrated in the course of drilling. ■Were they salt domes such as are common along the United States Gulf Coast, and if so, why should there have been so much solid crystalline salt beneath the floor of the Mediterranean?

■

With question such as these clearly before them, the scientists aboard the Glomar Challenger processed to the Mediterranean to search for the answers. On August 23, 1970, they recovered a sample. The sample consisted of pebbles of gypsum and fragments of volcanic rock. Not a single pebble was found that might have indicated that the pebbles came from the nearby continent. In the days following, samples of solid gypsum were repeatedly brought on deck as drilling operations penetrated the seafloor. Furthermore, the gypsum was found to possess peculiarities of composition and structure that suggested it had formed on desert flats. Sediment above and below the gypsum layer contained tiny marine fossils, indicating open-ocean conditions. As they drilled into the central and deepest part of the Mediterranean basin, the scientists took solid, shiny, crystalline salt from the core

answered by the findings of the Glomar Challenger.

○To evaluate techniques used by Hsu and Ryan to explore the sea floor.

○To describe the most difficult problems faced by the Glomar Challenger expedition.

Paragraph 4

7. According to paragraph 4, which of the following was responsible for the evaporation of the Mediterranean's waters?

- The movements of Earth's crust
- The accumulation of sediment layers
- Changes in the water level of the Atlantic Ocean
- Changes in Earth's temperature

8. The word "scores" in the passage is closest in meaning to

- members
- large numbers
- populations
- different types

9. According to paragraph 4, what caused most invertebrate species in the Mediterranean to become extinct?

- The evaporation of chemicals necessary for their survival
- Crustal movements that connected the Mediterranean to the saltier Atlantic
- The migration of new species through the narrow straits
- Their inability to tolerate the increasing salt content of the Mediterranean

10. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- The strait of Gibraltar reopened when the Mediterranean and the Atlantic became

barrel. Interbedded with the salt were thin layers of what appeared to be windblown silt.

The time had come to formulate a hypothesis. The investigators theorized that about 20 million years ago, the Mediterranean was a broad seaway linked to the Atlantic by two narrow straits. Crustal movements closed the straits, and the landlocked Mediterranean began to evaporate. Increasing salinity caused by the evaporation resulted in the extermination of scores of invertebrate species. Only a few organisms especially tolerant of very salty conditions remained. As evaporation continued, the remaining brine (salt water) became so dense that the calcium sulfate of the hard layer was precipitated. In the central deeper part of the basin, the last of the brine evaporated to precipitate more soluble sodium chloride (salt). Later, under the weight of overlying sediments, this salt flowed plastically upward to form salt domes. Before this happened, however, the Mediterranean was a vast desert 3,000 meters deep. Then, about 5.5 million years ago came the deluge. As a result of crustal adjustments and faulting, the Strait of Gibraltar, where the Mediterranean now connects to the Atlantic, opened, and water cascaded spectacularly back into the Mediterranean. Turbulent waters tore into the hardened salt flats, broke them up, and ground them into the pebbles observed in the first sample taken by the Challenger. As the basin was refilled, normal marine organisms returned. Soon layer of oceanic ooze began to accumulate above the old hard layer.

The salt and gypsum, the faunal

connected and the cascades of water from one sea to the other caused crustal adjustments and faulting.

○The Mediterranean was dramatically refilled by water from the Atlantic when crustal adjustments and faulting opened the Strait of Gibraltar, the place where the two seas are joined.

○The cascades of water from the Atlantic to the Mediterranean were not as spectacular as the crustal adjustments and faulting that occurred when the Strait of Gibraltar was connected to those seas.

○As a result of crustal adjustments and faulting and the creation of the Strait of Gibraltar, the Atlantic and Mediterranean were connected and became a single sea with spectacular cascades of water between them.

11. The word “Turbulent” in the passage is closest in meaning to

- fresh
- deep
- violent
- temperate

Paragraph 2

12. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

Thus, scientists had information about the shape of the domes but not about their chemical composition and origin.

Where would the sentence best fit?

13 □ **An expedition to the Mediterranean answered some long-standing questions about the ocean's history.**

-
-
-

Answer choices

1. The Glomar Challenger expedition investigated changes in invertebrate fauna and

changes, and the unusual gravel provided abundant evidence that the Mediterranean was once a desert.

gypsum: a mineral made of calcium sulfate and water

■Another task for the Glomar Challenger's scientists was to try to determine the origin of the domelike masses buried deep beneath the Mediterranean seafloor. ■These structures had been detected years earlier by echo-sounding instruments, but they had never been penetrated in the course of drilling. ■Were they salt domes such as are common along the United States Gulf Coast, and if so, why should there have been so much solid crystalline salt beneath the floor of the Mediterranean?

■

some unusual geologic features.

2. Researchers collected fossils to determine which new species migrated from the Atlantic with older species.

3. Scientists aboard the Glomar Challenger were the first to discover the existence of domelike masses underneath the seafloor.

4. Samples recovered from the expedition revealed important differences in chemical composition and fossil distribution among the sediment layers.

5. Evidence collected by the Glomar Challenger supports geologists' beliefs that the Mediterranean had evaporated and become a desert, before it refilled with water.

6. Mediterranean salt domes formed after crustal movements opened the straits between the Mediterranean and the Atlantic, and the Mediterranean refilled with water.

Paragraph 1

1. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○The regularity and power of stone walls inspired Romans attempting to unify the parts of their realm.

○Although the Romans used different types of designs when building their walls, they used regular controls to maintain their realm.

○Several types of control united the Roman realm, just as design and cement held Roman walls together.

○Romans built walls to unite the various parts of their realm into a single entity, which was controlled by powerful laws.

2. According to paragraph 1, all of the following are controls that held together the

Ancient Rome and Greece

There is a quality of cohesiveness about the Roman world that applied neither to Greece nor perhaps to any other civilization, ancient or modern. Like the stone of Roman wall, which were held together both by the regularity of the design and by that peculiarly powerful Roman cement, so the various parts of the Roman realm were bonded into a massive, monolithic entity by physical, organizational, and psychological controls. The physical bonds included the network of military garrisons, which were stationed in every province, and the network of stone-built roads that linked the provinces with Rome. The organizational bonds were based on the common principles of law and administration and on the universal army of officials who enforced common standards of conduct. The psychological controls were built on fear and

roman world EXCEPT

- administrative and legal systems
- the presence of the military
- a common language
- transportation networks

Paragraph 2

3. The phrase “**obsession with**” in the passage is closest in meaning to

- thinking about
- fixation on
- interest in
- attitude toward

4. According to paragraph 2, which of the following was NOT characteristic of Rome’s early development?

- Expansion by sea invasion
- Territorial expansion
- Expansion from one original settlement
- Expansion through invading armies

5. Why does the author mention “**Alexander the Great**” in the passage?

- To acknowledge that Greek civilization also expanded by land conquest
- To compare Greek leaders to Roman leaders
- To give an example of Greek leader whom Romans studied
- To indicate the superior organization of the Greek military

Paragraph 3

6. The word “**fostered**” in the passage is closest in meaning to

- accepted
- combined
- introduced
- encouraged

7. Paragraph 3 suggests which of the following about the people of Latium?

- Their economy was based on trade

punishment—on the absolute certainty that anyone or anything that threatened the authority of Rome would be utterly destroyed.

The source of Roman obsession with unity and cohesion may well have lain in the pattern of Rome’s early development. Whereas Greece had grown from scores of scattered cities, Rome grew from one single organism. While the Greek world had expanded along the Mediterranean seas lanes, the Roman world was assembled by territorial conquest. Of course, the contrast is not quite so stark: in Alexander the Great the Greeks had found the greatest territorial conqueror of all time; and the Romans, once they moved outside Italy, did not fail to learn the lessons of sea power. Yet the essential difference is undeniable. The Key to the Greek world lay in its high-powered ships; the key to Roman power lay in its marching legions. The Greeks were wedded to the sea; the Romans, to the land. The Greek was a sailor at heart; the Roman, a landsman.

Certainly, in trying to explain the Roman phenomenon, one would have to place great emphasis on this almost instinct for the territorial imperative. Roman priorities lay in the organization, exploitation, and defense of their territory. In all probability it was the fertile plain of Latium, where the Latins who founded Rome originated, that created the habits and skills of landed settlement, landed property, landed economy, landed administration, and a land-based society. From this arose the Roman genius for military organization and orderly government. In turn, a deep

relations with other settlements.

○They held different values than the people of Rome.

○Agriculture played a significant role in the society.

○They possessed unusual knowledge of animal instincts

Paragraph 4

8. Paragraph 4 indicates that some historians admire Roman civilization because of

- the diversity of cultures within Roman society
- its strength
- its innovative nature
- the large body of literature that it developed

9. In paragraph 4, the author develops a description of Roman civilization by

- comparing the opinions of Roman intellectuals to Greek intellectuals
- identifying which characteristics of roman civilization were copied from Greece
- explaining how the differences between Roman and Greece developed as time passed
- contrasting characteristics of Roman civilization with characteristics of Greek civilization

10. According to paragraph 4, intellectual Romans such as Horace held which of the following opinions about their civilization?

- Ancient works of Greece held little value in the Roman world.
- The Greek civilization had been surpassed by the Romans.
- Roman civilization produced little that was original or memorable.
- Romans valued certain types of

attachment to the land, and to the stability which rural life engenders, fostered the Roman virtues: gravitas, a sense of responsibility, peitas, a sense of devotion to family and country, and iustitia, a sense of the natural order.

Modern attitudes to Roman civilization range from the infinitely impressed to the thorough disgusted. ■As always, there are the power worshippers, especially among historians, who are predisposed to admire whatever is strong, who feel more attracted to the might of Rome than to the subtlety of Greece. ■At the same time, there is a solid body of opinion that dislikes Rome. ■For many, Rome is at best the imitator and the continuator of Greece on a larger scale. ■Greek civilization had quality; Rome, mere quantity. Greece was the inventor; Rome, the research and development division. Such indeed was the opinion of some of the more intellectual Romans.” had the Greeks held novelty in such disdain as we,” asked Horace in his Epistle, “what work of ancient date would now exist?”

Rome’s debt to Greece was enormous. The Romans adopted Greek religion and moral philosophy. In literature, Greek writers were consciously used as models by their Latin successors. It was absolutely accepted that an educated Roman should be fluent in Greek. In speculative philosophy and the sciences, the Romans made virtually no advance on early achievements.

Yet it would be wrong to suggest that Rome was somehow a junior partner in Greco-Roman civilization. The Roman

innovations that had been ignored by ancient Greeks.

Paragraph 5

Paragraph 6

11. The word “spheres” in the passage is closest in meaning to

- abilities
- areas
- combinations
- models

12. Which of the following statements about leading Roman soldiers and statesmen is supported by paragraphs 5 and 6?

- They could read and write the Greek language.
- They frequently wrote poetry and plays.
- They focused their writing on military matters.
- They wrote according to the philosophical laws of the Greeks.

Paragraph 4

13. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

They esteem symbols of Roman power, such as the massive Colosseum.

Where would the sentence best fit?

14. The Roman world drew its strength from several important sources

-
-
-

Answer choices

1. Numerous controls imposed by Roman rulers held its territory together.
2. The Roman military was organized differently from older military organizations.
3. Romans valued sea power as did the Latins, the original inhabitants of Rome.

genius was projected into new spheres—especially into those of law, military organization, administration, and engineering. Moreover, the tensions that arose within the Roman state produced literary and artistic sensibilities of the highest order. It was no accident that many leading Roman soldiers and statesmen were writers of high caliber.

Modern attitudes to Roman civilization range from the infinitely impressed to the thorough disgusted. ■As always, there are the power worshippers, especially among historians, who are predisposed to admire whatever is strong, who feel more attracted to the might of Rome than to the subtlety of Greece. ■At the same time, there is a solid body of opinion that dislikes Rome. ■For many, Rome is at best the imitator and the continuator of Greece on a larger scale. ■Greek civilization had quality; Rome, mere quantity. Greece was the inventor; Rome, the research and development division. Such indeed was the opinion of some of the more intellectual Romans.” had the Greeks held novelty in such disdain as we,” asked Horace in his Epistle, “what work of ancient date would now exist?”

4. Roman values were rooted in a strong attachment to the land and the stability of rural life.

5. Rome combined aspects of ancient Greek civilization with its own contributions in new areas.

6. Educated Romans modeled their own literature and philosophy on the ancient Greeks

Paragraph 1

1. The word “diffused” in the passage is closest in meaning to

- emerged
- was understood
- spread
- developed

2. According to paragraph 1, why do researchers doubt that agriculture developed independently in Africa?

○African lakes and rivers already provided enough food for people to survive without agriculture.

○The earliest examples of cultivated plants discovered in Africa are native to Asia.

○Africa's native plants are very difficult to domesticate.

○African communities were not large enough to support agriculture.

无老师网站 <http://www.ibtsat.com>

3. In paragraph 1, what does the author imply about changes in the African environment during this time period?

○The climate was becoming milder, allowing for a greater variety of crops to be grown.

○Although periods of drying forced people south, they returned once their food supply was secure.

○Population growth along rivers and lakes was dramatically decreasing the availability of fish.

○A region that had once supported

Agriculture, Iron, and the Bantu Peoples

There is evidence of agriculture in Africa prior to 3000 B.C. It may have developed independently, but many scholars believe that the spread of agriculture and iron throughout Africa linked it to the major centers of the Near East and Mediterranean world. The drying up of what is now the Sahara desert had pushed many peoples to the south into sub-Saharan Africa. These peoples settled at first in scattered hunting-and-gathering bands, although in some places near lakes and rivers, people who fished, with a more secure food supply, lived in larger population concentrations. Agriculture seems to have reached these people from the Near East, since the first domesticated crops were millets and sorghums whose origins are not African but west Asian. Once the idea of planting diffused, Africans began to develop their own crops, such as certain varieties of rice, and they demonstrated a continued receptiveness to new imports. The proposed areas of the domestication of African crops lie in a band that extends from Ethiopia across southern Sudan to West Africa. Subsequently, other crops, such as bananas, were introduced from Southeast Asia.

Livestock also came from outside Africa. Cattle were introduced from

many people was becoming a desert where few could survive

Paragraph 2

4. According to paragraph 2, camels were important because they

- were the first domesticated animal to be introduced to Africa
- allowed the people of the West African savannahs to carve out large empires
- helped African peoples defend themselves against Egyptian invaders
- made it cheaper and easier to cross the Sahara

5. According to paragraph 2, which of the following were subjects of rock paintings in the Sahara?

- Horses and chariots
- Sheep and goats
- Hyksos invaders from Egypt
- Camels and cattle

Paragraph 3

6. What function does paragraph 3 serve in the organization of the passage as a whole

○ It contrasts the development of iron technology in West Asia and West Africa.

○ It discusses a non-agricultural contribution to Africa from Asia.

○ It introduces evidence that a knowledge of copper working reached Africa and Europe at the same time.

○ It compares the rates at which iron technology developed in different parts of Africa.

Paragraph 4

7. The word “profound” in the passage is closest in meaning to

- fascinating
- far-reaching
- necessary
- temporary

Asia, as probably were domestic sheep and goats. Horses were apparently introduced by the Hyksos invaders of Egypt (1780-1560 B.C.) and then spread across the Sudan to West Africa. Rock paintings in the Sahara indicate that horses and chariots were used to traverse the desert and that by 300-200 B.C., there were trade routes across the Sahara. Horses were adopted by peoples of the West African savannah, and later their powerful cavalry forces allowed them to carve out large empires. Finally, the camel was introduced around the first century A.D. This was an important innovation, because the camel's abilities to thrive in harsh desert conditions and to carry large loads cheaply made it an effective and efficient means of transportation. The camel transformed the desert from a barrier into a still difficult, but more accessible, route of trade and communication.

Iron came from West Asia, although its routes of diffusion were somewhat different than those of agriculture. Most of Africa presents a curious case in which societies moved directly from a technology of stone to iron without passing through the intermediate stage of copper or bronze metallurgy, although some early copper-working sites have been found in West Africa. Knowledge of iron making penetrated into the forest and savannahs of West Africa at roughly the same time that iron making was reaching Europe. Evidence of iron making has been found in Nigeria, Ghana, and Mali.

This technological shift caused profound changes in the complexity of African societies. Iron represented power. In West Africa the blacksmith who made tools and functions. Iron hoes,

8. The word “ritual” in the passage is closest in meaning to

- military
- physical
- ceremonial
- permanent

9. According to paragraph 4, all of the following were social effects of the new metal technology in Africa EXCEPT:

- Access to metal tools and weapons created greater social equality.
- Metal weapons increased the power of warriors.
- Iron tools helped increase the food supply.
- Technical knowledge gave religious power to its holders.

Paragraph 5

10. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

While American iron makers developed the latest furnaces, African iron makers continued using earlier techniques.

Africans produced iron much earlier than Americans, inventing technologically sophisticated heating systems.

Iron making developed earlier in Africa than in the Americas because of the ready availability of carbon and iron ore.

Both Africa and the Americas developed the capacity for making iron early, but African metallurgy developed at a slower rate.

Paragraph 6

11. The word “fleeing” in the passage is closest in meaning to

- afraid of

which made the land more productive, and iron weapons, which made the warrior more powerful, had symbolic meaning in a number of West Africa societies. Those who knew the secrets of making iron gained ritual and sometimes political power.

Unlike in the Americas, where metallurgy was a very late and limited development, Africans had iron from a relatively early date, developing ingenious furnaces to produce the high heat needed for production and to control the amount of air that reached the carbon and iron ore necessary for making iron. Much of Africa moved right into the Iron Age, taking the basic technology and adapting it to local conditions and resources.

The diffusion of agriculture and later of iron was accompanied by a great movement of people who may have carried these innovations. These people probably originated in eastern Nigeria. ■ Their migration may have been set in motion by an increase in population caused by a movement of peoples fleeing the desiccation, or drying up, of the Sahara. ■ They spoke a language, prior-Bantu (“Bantu” means “the people”), which is the parent tongue of a language of a large number of Bantu languages still spoken throughout sub-Saharan Africa. Why and how these people spread out into central and southern Africa remains a mystery, but archaeologists believe that their iron weapons allowed them to conquer their hunting-gathering opponents, who still used stone implements. ■ Still, the process is uncertain, and peaceful migration—or simply rapid demographic growth—may have also caused the Bantu explosion. ■

- displaced by
- running away from
- responding to

12. Paragraph 6 mentions all of the following as possible causes of the “Bantu explosion” EXCEPT

- superior weapons
- better hunting skills
- peaceful migration
- increased population

Paragraph 6

13. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

These people had a significant linguistic impact on the continent as well.

Where would the sentence best fit?

14.

Agriculture and iron working probably spread to Africa from neighboring regions.

-
-
-

Answer choices

1. Once Africans developed their own crops, they no longer borrowed from other regions.
2. The harshness of the African climate meant that agriculture could not develop until after the introduction of iron tools.
3. The use of livestock improved transportation and trade and allowed for new forms of political control.
4. As the Sahara expanded, the camel gained in importance, eventually coming to have religious significance.
5. The spread of iron working had far-reaching effects on social, economic, and political organization in Africa.
6. Today's Bantu-speaking peoples are descended from a technologically advanced people who spread throughout Africa.

TPO 08

Paragraph 1

1. The word massive in the passage is closest in meaning to

- ancient
- carefully
- very large
- carefully protected

2. In paragraph 1, each of the following is mentioned as a feature of the city of Teotihuacán between A.D. 150 and 700 EXCEPT

- regularly arranged streets
- several administrative centers spread across the city
- many manufacturing workshops
- apartment complexes

Paragraph 2

3. The word pinpoint in the passage is closest in meaning to

- identify precisely
- make an argument for
- describe
- understand

4. The word ingenuity in the passage is closest in meaning to

- ambition
- sincerity
- faith
- cleverness

5. Which of the following is NOT mentioned in paragraph 2 as a main factor in the development of Teotihuacán?

- The presence of obsidian in the Teotihuacán Valley
- The potential for extensive irrigation of Teotihuacán Valley lands

THE RISE OF TEOTIHUACAN

The city of Teotihuacán, which lay about 50 kilometers northeast of modern-Day Mexico City, began its growth by 200-100 B.C. At its height, between about A.D. 150 and 700, it probably had a population of more than 125,000 people and covered at least 20 square kilometers. It had over 2,000 apartment complexes, a great market, a large number of industrial workshops, an administrative center, a number of massive religious edifices, and a regular grid pattern of streets and buildings. Clearly, much planning and central control were involved in the expansion and ordering of his great metropolis. Moreover, the city had economic and perhaps religious contacts with most parts of Mesoamerica (modern Central America and Mexico).

How did this tremendous development take place, and why did it happen in the Teotihuacán Valley? Among the main factors are Teotihuacán's geographic location on a natural trade route to the south and east of the Valley of Mexico, the obsidian resources in the Teotihuacán Valley itself, and the valley's potential for extensive irrigation. The exact role of other factors is much more difficult to pinpoint—for instance, Teotihuacán's religious significance as a shrine, the historical situation in and around the Valley of Mexico toward the end of the first millennium B.C., the ingenuity and foresightedness of Teotihuacán's elite,

- A long period of volcanic inactivity in the Teotihuacán Valley
- Teotihuacán's location on a natural trade route

Paragraph 2

Paragraph 3

6. Which of the following can be inferred from paragraphs 2 and 3 about the Volcanic eruptions of the late first millennium B.C.?

- They were more frequent than historians once thought.
- They may have done more damage to Teotihuacán than to neighboring centers.
- They may have played a major role in the rise of Teotihuacán.
- They increased the need for extensive irrigation in the Teotihuacán Valley

7. What can be inferred from paragraph 3 about Cuicuilco prior to 200 B.C.?

- It was a fairly small city until that date.
- It was located outside the Valley of Mexico.
- It emerged rapidly as an economical and political center.
- Its economy relied heavily on agriculture.

8. The word predominant in the passage is closest in meaning to

- most aggressive
- most productive
- principal
- earliest

Paragraph 4

9. Which of the following allowed Teotihuacán to have “a competitive edge over its neighbors”?

- A well-exploited and readily available commodity
- The presence of a highly stable elite class
- Knowledge derived directly from the Olmecs about the art of tool making

and, finally, the impact of natural disasters, such as the volcanic eruptions of the late first millennium B.C.

This last factor is at least circumstantially implicated in Teotihuacán's rise. Prior to 200 B.C., a number of relatively small centers coexisted in and near the Valley of Mexico. Around this time, the largest of these centers, Cuicuilco, was seriously affected by a volcanic eruption, with much of its agricultural land covered by lava. With Cuicuilco eliminated as a potential rival, any one of a number of relatively modest towns might have emerged as a leading economic and political power in Central Mexico. The archaeological evidence clearly indicates, though, that Teotihuacán was the center that did arise as the predominant force in the area by the first century A.D.

It seems likely that Teotihuacán's natural resources—along with the city elite's ability to recognize their potential—gave the city a competitive edge over its neighbors. The valley, like many other places in Mexican and Guatemalan highlands, was rich in obsidian. The hard volcanic stone was a resource that had been in great demand for many years, at least since the rise of the Olmecs (a people who flourished between 1200 and 400 B.C.), and it apparently had a secure market. Moreover, recent research on obsidian tools found at Olmecs sites has shown that some of the obsidian obtained by the Olmecs originated near Teotihuacán. Teotihuacán obsidian must have been recognized as a valuable commodity for many centuries before the great city arose.

- Scarce natural resources in nearby areas such as those located in what are now the Guatemalan and Mexican highlands

10. According to paragraph 4, what has recent research on obsidian tools found at Olmec sites shown?

- Obsidian's value was understood only when Teotihuacán became an important city.
- The residents of Teotihuacán were sophisticated toolmakers.
- The residents of Teotihuacán traded obsidian with the Olmecs as early as 400 B.C.
- Some of the obsidian used by the Olmecs came from the area around Teotihuacán.

Paragraph 5

11. Select the TWO answer choices that are mentioned in paragraph 5 as being features of Teotihuacán that may have attracted immigrants to the city. To receive credit, you must select TWO answers.

- The prosperity of the elite
- Plenty of available housing
- Opportunities for well-paid agricultural employment
- The presence of one or more religious shrines

Paragraph 6

12. In paragraph 6, the author discusses the “The thriving obsidian operation” in order to

- explain why manufacturing was the main industry of Teotihuacán
- give an example of an industry that took very little time to develop in Teotihuacán
- Illustrate how several factors influenced each other to make Teotihuacán a powerful and wealthy city
- explain how a successful industry can be a source of wealth and a source of conflict at the same time

Long-distance trade in obsidian probably gave the elite residents of Teotihuacán access to a wide variety of exotic good, as well as a relatively prosperous life. Such success may have attracted immigrants to Teotihuacán. In addition, Teotihuacán's elite may have consciously attempted to attract new inhabitants. It is also probable that as early as 200 B.C. Teotihuacán may have achieved some religious significance and its shrine (or shrines) may have served as an additional population magnet. Finally, the growing population was probably fed by increasing the number and size of irrigated fields.

The picture of Teotihuacán that emerges is a classic picture of positive feedback among obsidian mining and working, trade, population growth, irrigation, and religious tourism. The thriving obsidian operation, for example, would necessitate more miners, additional manufacturers of obsidian tools, and additional traders to carry the goods to new markets. All this led to increased wealth, which in turn would attract more immigrants to Teotihuacán. The growing power of the elite, who controlled the economy, would give them the means to physically coerce people to move to Teotihuacán and serve as additions to the labor force. More irrigation works would have to be built to feed the growing population, and this resulted in more power and wealth for the elite.

The city of Teotihuacán, which lay

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

In fact, artifacts and pottery from Teotihuacán have been discovered in sites as far away as the Mayan lowlands, the Guatemalan highlands, northern Mexico, and the Gulf Coast of Mexico.

Where would the sentence best fit?

14.

Teotihuacán was a highly developed city in Mesoamerica that reached its peak between about A.D. 150 and 700.

-
-
-

Answer choices

1. The number and sophistication of the architectural, administrative, commercial, and religious features of Teotihuacan indicate the existence of centralized planning and control.

2. Teotihuacán may have developed its own specific local religion as a result of the cultural advances made possible by the city's great prosperity.

3. As a result of its large number of religious shrines, by the first century A.D., Teotihuacan become the most influential.

4. Several factors may account for Teotihuacán's extraordinary development, including its location, rich natural resources, irrigation potential, intelligent elite, and the misfortune of rival communities.

5. In many important areas, from the obsidian industry to religious tourism, Teotihuacán's success and prosperity typified the classic positive feedback cycle.

6. Although many immigrants settled in Teotihuacán between A.D.150 and 700, the increasing threat of coerced labor discouraged further settlement and limited Teotihuacán's population growth.

about 50 kilometers northeast of modern-Day Mexico City, began its growth by 200-100 B.C. At its height, between about A.D. 150 and 700, it probably had a population of more than 125,000 people and covered at least 20 square kilometers. ■It had over 2,000 apartment complexes, a great market, a large number of industrial workshops, an administrative center, a number of massive religious edifices, and a regular grid pattern of streets and buildings. ■Clearly, much planning and central control were involved in the expansion and ordering of this great metropolis. ■Moreover, the city had economic and perhaps religious contacts with most parts of Mesoamerica (modern Central America and Mexico). ■

Paragraph 1

1. According to paragraph 1, which of the following is true of the Late Cretaceous climate?

- Summers were very warm and winters were very cold.
- Shallow seas on the continents caused frequent temperature changes.
- The climate was very similar to today's climate.
- The climate did not change dramatically from season to season.

Paragraph 2

2. Which of the following reasons is suggested in paragraph 2 for the extinction of the dinosaurs?

- Changes in the lengths of the days and nights during the late Cretaceous period
- Droughts caused by the movement of seaways back into the oceans
- The change from mild to severe climates during the Late Cretaceous period
- An extreme decrease in the average yearly temperature over 10, 000 years

Paragraph 3

3. Why does the author mention the survival of "snakes, lizards, turtles, and crocodiles" in paragraph 3?

- To argue that dinosaurs may have become extinct because they were not cold-blooded animals
- To question the adequacy of the hypothesis that climatic change related to sea levels caused the extinction of the dinosaurs
- To present examples of animals that could maintain a livable body temperature more easily than dinosaurs
- To support a hypothesis that these animals were not as sensitive to climate changes in the Cretaceous period as they are today

4. The word cope in the passage is closest in meaning to

EXTINCTION OF THE DINOSAURS

Paleontologists have argued for a long time that the demise of the dinosaurs was caused by climatic alterations associated with slow changes in the positions of continents and seas resulting from plate tectonics. Off and on throughout the Cretaceous (the last period of the Mesozoic era, during which dinosaurs flourished), large shallow seas covered extensive areas of the continents. Data from diverse sources, including geochemical evidence preserved in seafloor sediments, indicate that the Late Cretaceous climate was milder than today's. The days were not too hot, nor the nights too cold. The summers were not too warm, nor the winters too frigid. The shallow seas on the continents probably buffered the temperature of the nearby air, keeping it relatively constant.

At the end of the Cretaceous, the geological record shows that these seaways retreated from the continents back into the major ocean basins. No one knows why. Over a period of about 100,000 years, while the seas pulled back, climates around the world became dramatically more extreme: warmer days, cooler nights; hotter summers, colder winters. Perhaps dinosaurs could not tolerate these extreme temperature changes and became extinct.

If true, though, why did cold-blooded animals such as snakes, lizards, turtles, and crocodiles survive the freezing winters and torrid summers? These animals are at the mercy of the climate to maintain a livable body temperature. It's hard to understand why they would not be affected, whereas

- adapt
- move
- continue
- compete

5. According to paragraph 3, which of the following is true of changes in climate before the Cretaceous period and the effect of these changes on dinosaurs?

Climate changes associated with the movement of seaways before the Cretaceous period did not cause dinosaurs to become extinct.

Changes in climate before the Cretaceous period caused severe fluctuations in sea level, resulting in the extinction of the dinosaurs.

Frequent changes in climate before the Cretaceous period made dinosaurs better able to maintain a livable body temperature.

Before the Cretaceous period there were few changes in climate, and dinosaurs flourished.

6. The word fluctuations in the passage is closest in meaning to

- extremes
- retreats
- periods
- variations

Paragraph 4

7. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? In correct choices change the meaning in important ways or leave out essential information.

The fossil record suggests that there was an abrupt extinction of many plants and animals at the end of the Mesozoic era.

Few fossils of the Mesozoic era have survived in the rocks that mark the end of the Cretaceous.

Fossils from the Cretaceous period of the Mesozoic up to the beginning of the Cenozoic

dinosaurs were left too crippled to cope, especially if, as some scientists believe, dinosaurs were warm-blooded. Critics also point out that the shallow seaways had retreated from and advanced on the continents numerous times during the Mesozoic, so why did the dinosaurs survive the climatic changes associated with the earlier fluctuations but not with this one? Although initially appealing, the hypothesis of a simple climatic change related to sea levels is insufficient to explain all the data.

Dissatisfaction with conventional explanations for dinosaur extinctions led to a surprising observation that, in turn, has suggested a new hypothesis. Many plants and animals disappear abruptly from the fossil record as one moves from layers of rock documenting the end of the Cretaceous up into rocks representing the beginning of the Cenozoic (the era after the Mesozoic). Between the last layer of Cretaceous rock and the first layer of Cenozoic rock, there is often a thin layer of clay. Scientists felt that they could get an idea of how long the extinctions took by determining how long it took to deposit this one centimeter of clay and they thought they could determine the time it took to deposit the clay by determining the amount of the element iridium (Ir) it contained.

It has not been common at Earth's since the very beginning of the planet's history. Because it usually exists in a metallic state, it was preferentially incorporated in Earth's core as the planet cooled and consolidated. Ir is found in high concentrations in some meteorites, in which the solar system's original chemical composition is preserved. Even

era have been removed from the layers of rock that surrounded them.

○Plants and animals from the Mesozoic era were unable to survive in the Cenozoic era.

Paragraph 4

8. In paragraph 4, all the following questions are answered EXCEPT:

○Why is there a layer of clay between the rocks of the Cretaceous and Cenozoic?

○Why were scientists interested in determining how long it took to deposit the layer of clay at the end of the Cretaceous?

○What was the effect of the surprising observation scientists made?

○Why did scientists want more information about the dinosaur extinctions at the end of the Cretaceous?

Paragraph 5

9. The word bombard in the passage is closest in meaning to

- approach
- strike
- pass
- circle

10. Paragraph 5 implies that a special explanation of Ir in the boundary clay is needed because

○the Ir in microscopic meteorites reaching Earth during the Cretaceous period would have been incorporated into Earth's core

○the Ir in the boundary clay was deposited much more than a million years ago

○the concentration of Ir in the boundary clay is higher than in microscopic meteorites

○the amount of Ir in the boundary clay is too great to have come from microscopic meteorites during the time the boundary clay was deposited

today, microscopic meteorites continually bombard Earth, falling on both land and sea. By measuring how many of these meteorites fall to Earth over a given period of time, scientists can estimate how long it might have taken to deposit the observed amount of Ir in the boundary clay. ■These calculations suggest that a period of about one million years would have been required. ■However, other reliable evidence suggests that the deposition of the boundary clay could not have taken one million years. ■So the unusually high concentration of Ir seems to require a special explanation. ■

In view of these facts, scientists hypothesized that a single large asteroid, about 10 to 15 kilometers across, collided with Earth, and the resulting fallout created the boundary clay. Their calculations show that the impact kicked up a dust cloud that cut off sunlight for several months, inhibiting photosynthesis in plants; decreased surface temperatures on continents to below freezing; caused extreme episodes of acid rain; and significantly raised long-term global temperatures through the greenhouse effect. This disruption of food chain and climate would have eradicated the dinosaurs and other organisms in less than fifty years.

Paragraph 6

11. The word disruption in the passage is

closest in meaning to

- exhaustion
- disturbance
- modification
- disappearance

12. Paragraph 6 mentions all of the following effects of the hypothesized asteroid collision EXCEPT

- a large dust cloud that blocked sunlight
- an immediate drop in the surface temperatures of the continents
- an extreme decrease in rainfall on the continents
- a long-term increase in global temperatures

Paragraph 5

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Consequently, the idea that the Ir in the boundary clay came from microscopic meteorites cannot be accepted.

Where would the sentence best fit?

14. For a long time scientists have argued that the extinction of The dinosaurs was related to climate change.

-
-
-

Answer choices

1. A simple climate change does not explain some important data related to the extinction of the dinosaurs at the end of the Cretaceous.

2. The retreat of the seaways at the end of the Cretaceous has not been fully explained.

3. The abruptness of extinctions at the end of the Cretaceous and the high concentration of Ir found in clay deposited at that time have fueled the development of a new hypothesis.

4. Extreme changes in daily and seasonal

■These calculations suggest that a period of about one million years would have been required. ■However, other reliable evidence suggests that the deposition of the boundary clay could not have taken one million years. ■So the unusually high concentration of Ir seems to require a special explanation. ■

climates preceded the retreat of the seas back into the major ocean basins.

5. Some scientists hypothesize that the extinction of the dinosaurs resulted from the effects of an asteroid collision with Earth.

6. Boundary clay layers like the one between the Mesozoic and Cenozoic are used by scientists to determine the rate at which an extinct species declined.

Paragraph 1

1. The word merge in the passage is closest in meaning to

- expand
- separate
- straighten out
- combine

2. What does the discussion in paragraph 1 of runoff channels in the southern highlands suggest about Mars?

The atmosphere of Mars was once thinner than it is today.

Large amounts of rain once fell on parts of Mars.

The river systems of Mars were once more extensive than Earth's.

The rivers of Mars began to dry up about 4 billion years ago.

Paragraph 2

3. The word relics in the passage is closest in meaning to

- remains
- sites
- requirements
- sources

4. The word miniature in the passage is closest in meaning to

- temporary
- small
- multiple

RUNNING WATER ON MARS

Photographic evidence suggests that liquid water once existed in great quantity on the surface of Mars. Two types of flow features are seen: runoff channels and outflow channels. Runoff channels are found in the southern highlands. These flow features are extensive systems—sometimes hundreds of kilometers in total length—of interconnecting, twisting channels that seem to merge into larger, wider channels. They bear a strong resemblance to river systems on Earth, and geologists think that they are dried-up beds of long-gone rivers that once carried rainfall on Mars from the mountains down into the valleys. Runoff channels on Mars speak of a time 4 billion years ago (the age of the Martian highlands), when the atmosphere was thicker, the surface warmer, and liquid water widespread.

Outflow channels are probably relics of catastrophic flooding on Mars long ago.

■ They appear only in equatorial regions and generally do not form extensive interconnected networks. ■ Instead, they are probably the paths taken by huge volumes of water draining from the southern highlands into the northern plains. ■ The onrushing water arising

- familiar

5. In paragraph 2, why does the author include the information that 105 tons of water flow through the Amazon river per second?

○To emphasize the great size of the volume of water that seems to have flowed through Mars' outflow channels

○To indicate data used by scientists to estimate how long ago Mars' outflow channels were formed

○To argue that flash floods on Mars may have been powerful enough to cause tear-shaped "islands" to form

○To argue that the force of flood waters on Mars was powerful enough to shape the northern volcanic plains

6. According to paragraph 2, all of the following are true of the outflow channels on Mars EXCEPT:

○They formed at around the same time that volcanic activity was occurring on the northern plains.

○They are found only on certain parts of the Martian surface.

○They sometimes empty onto what appear to have once been the wet sands of tidal beaches.

○They are thought to have carried water northward from the equatorial regions.

Paragraph 3

7. All of the following questions about geological features on Mars are answered in paragraph 3 EXCEPT:

○What are some regions of Mars that may have once been covered with an ocean?

○Where do mission scientists believe that the river forming the delta emptied?

○Approximately how many craters on Mars do mission scientists believe may once have been lakes filled with water?

○During what period of Mars' history do some scientists think it may have had large

from these flash floods likely also formed the odd teardrop-shaped "islands" (resembling the miniature versions seen in the wet sand of our beaches at low tide) that have been found on the plains close to the ends of the outflow channels. ■Judging from the width and depth of the channels, the flow rates must have been truly enormous—perhaps as much as a hundred times greater than the 105 tons per second carried by the great Amazon river. Flooding shaped the outflow channels approximately 3 billion years ago, about the same times as the northern volcanic plains formed.

Some scientists speculate that Mars may have enjoyed an extended early Period during which rivers, lakes, and perhaps even oceans adorned its surface. A 2003 Mars Global Surveyor image shows what mission specialists think may be a delta—a fan-shaped network of channels and sediments where a river once flowed into a larger body of water, in this case a lake filling a crater in the southern highlands. Other researchers go even further, suggesting that the data provide evidence for large open expanses of water on the early Martian surface. A computer-generated view of the Martian north polar region shows the extent of what may have been an ancient ocean covering much of the northern lowlands. The Hellas Basin, which measures some 3,000 kilometers across and has a floor that lies nearly 9 kilometers below the basin's rim, is another candidate for an ancient Martian sea.

These ideas remain controversial. Proponents point to features such as the terraced "beaches" shown in one image, which could conceivably have been left

bodies of water?

8. According to paragraph 3, images of Mars' surface have been interpreted as support for the idea that

- the polar regions of Mars were once more extensive than they are now
- a large part of the northern lowlands may once have been under water
- deltas were once a common feature of the Martian landscape
- the shape of the Hellas Basin has changed considerably over time

Paragraph 4

9. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- But detractors argue that geological activity may be responsible for the water associated with the terraces.
- But detractors argue that the terraces may have been formed by geological activity rather than by the presence of water.
- But detractors argue that the terraces may be related to geological forces in the Northern Hemisphere of Mars, rather than to Martian water in the south.
- But detractors argue that geological forces depressed the Northern Hemisphere so far below the level of the south that the terraces could not have been formed by water.

10. According to paragraph 4, what do the 2003 Global Surveyor data suggest About Mars?

- Ancient oceans on Mars contained only small amounts of carbon.
- The climate of Mars may not have been suitable for the formation of large bodies of water.
- Liquid water may have existed on some parts of Mars' surface for long periods of time.

behind as a lake or ocean evaporated and the shoreline receded. But detractors maintain that the terraces could also have been created by geological activity, perhaps related to the geologic forces that depressed the Northern Hemisphere far below the level of the south, in which case they have nothing whatever to do with Martian water. Furthermore, Mars Global Surveyor data released in 2003 seem to indicate that the Martian surface contains too few carbonate rock layers—layers containing compounds of carbon and oxygen—that should have been formed in abundance in an ancient ocean. Their absence supports the picture of a cold, dry Mars that never experienced the extended mild period required to form lakes and oceans. However, more recent data imply that at least some parts of the planet did in fact experience long periods in the past during which liquid water existed on the surface.

Aside from some small-scale gullies (channels) found since 2000, which are inconclusive, astronomers have no direct evidence for liquid water anywhere on the surface of Mars today, and the amount of water vapor in the Martian atmosphere is tiny. Yet even setting aside the unproven hints of ancient oceans, the extent of the past. Where did all the water go? The answer may be that virtually all the water on Mars is now locked in the permafrost layer under the surface, with more contained in the planet's polar caps.

- The ancient oceans that formed on Mars dried up during periods of cold, dry weather.

Paragraph 5

11. The word hints in the passage is closest in meaning to

- clues
- features
- arguments
- effects

Paragraph 2

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

These landscape features differ from runoff channels in a number of ways.

Where would the sentence best fit?

13. Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. This question is worth 2 points.

There is much debate concerning whether Mars once had water.

-
-
-

Answer choices

1. Mars' runoff and outflow channels are large-scale, distinctive features that suggest that large quantities of liquid water once flowed on Mars.

2. Although some researchers claim that Mars may once have had oceans, others dispute this, pointing to an absence of evidence or offering alternative interpretations of evidence.

3. Various types of images have been used to demonstrate that most of Martian surface

contains evidence of flowing water.

4. The runoff and outflow channels of Mars apparently carried a higher volume of water and formed more extensive networks than do Earth's river systems.

5. There is very little evidence of liquid water on Mars today, and it is assumed that all the water that once existed on the planet is frozen beneath its surface.

6. While numerous gullies have been discovered on Mars since 2000, many astronomers dismiss them as evidence that Mars once had liquid water.

~~~~~

~~~~~

TPO 09

Paragraph 1:

1. According to paragraph 1, the theory that people first migrated to the Americas by way of an ice-free corridor was seriously called into question by

- paleoecologist Glen MacDonald's argument that the original migration occurred much later than had previously been believed

- the demonstration that certain previously accepted radiocarbon dates were incorrect

- evidence that the continental ice began its final retreat much later than had previously been believed

- research showing that the ice-free corridor was not as long lasting as had been widely assumed

2. The word persuasively in the passage is closest in meaning to

- aggressively
- inflexibly

Colonizing the Americas via the Northwest Coast



It has long been accepted that the Americas were colonized by a migration of peoples from Asia, slowly traveling across a land bridge called Beringia (now the Bering Strait between northeastern Asia and Alaska) during the last Ice Age.

- convincingly
- carefully

Paragraph 2:

3. Paragraph 2 begins by presenting a theory and then goes on to

- discuss why the theory was rapidly accepted but then rejected
- present the evidence on which the theory was based
- cite evidence that now shows that the theory is incorrect
- explain why the theory was not initially considered plausible

4. The phrase prior to is closest in meaning to

- before
- immediately after
- during
- in spite of

5. Paragraph 2 supports the idea that, before the 1970s, the most archaeologists held which of the following views about the earliest people to reach the Americas?

- They could not have sailed directly from Beringia to Alaska and then southward because, it was thought, glacial ice covered the entire coastal region.
- They were not aware that the climate would continue to become milder
- They would have had no interest in migrating southward from Beringia until after the continental glaciers had begun to melt
- They lacked the navigational skills and appropriate boats needed long-distance trips.

Paragraph 3:

6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways to leave out essential information.

■The first water craft theory about the migration was that around 11,000-12,000 years ago there was an ice-free corridor stretching from eastern Beringia to the areas of North America south of the great northern glaciers. It was the midcontinental corridor between two massive ice sheets-the Laurentide to the west-that enabled the southward migration. ■But belief in this ice-free corridor began to crumble when paleoecologist Glen MacDonald demonstrated that some of the most important radiocarbon dates used to support the existence of an ice-free corridor were incorrect. ■He persuasively argued that such an ice-free corridor did not exist until much later, when the continental ice began its final retreat. ■

一想到新托福，就想到咱老无。

Support is growing for the alternative theory that people using watercraft, possibly skin boats, moved southward from Beringia along the Gulf of Alaska and then southward along the Northwest Coast of North America possibly as early as 16,000 years ago. This route would have enabled humans to enter southern areas of the Americas prior to the melting of the continental glaciers. Until the early 1970s, most archaeologists did not consider the coast a possible migration route into the Americas because geologists originally believed that during the last Ice Age the entire Northwest Coast was covered by glacial ice. It had been assumed that the ice extended westward from the Alaskan/Canadian mountains to the very edge of the continental shelf, the flat, submerged part of the continent that extend into the ocean. This would have created a barrier of ice extending from

○Because this region has been settled the longest, it also displays the greatest diversity in Native American languages.

○Fladmark's hypothesis states that the west coast of the Americas has been settled longer than any other region.

○The fact that the greatest diversity of Native American languages occurs along the west coast of the Americas lends strength to Fladmark's hypothesis

○According to Fladmark, Native American languages have survived the longest along the west coast of the Americas.

Paragraph 4:

7. The author's purpose in paragraph 4 is to

○indicate that a number of recent geologic studies seem to provide support for the coastal hypothesis

○indicate that coastal and inland migrations may have happened simultaneously

○explain why humans may have reached America's northwest coast before animals and plants did

○show that the coastal hypothesis may explain how people first reached Alaska but it cannot explain how people reached areas like modern British Columbia and Washington State

8. The word Vast in the passage is closest in meaning to

- Frozen
- Various
- Isolated
- Huge

Paragraph 5:

9. According to paragraph 5, the discovery of the remains of large land animals supports the coastal hypothesis by providing evidence that

○humans were changing their hunting techniques to adapt to coastal rather than inland environments

○animals had migrated from the inland to

the Alaska Peninsula, through the Gulf of Alaska and southward along the Northwest Coast of North America to what is today the state of Washington.

The most influential proponent of the coastal migration route has been Canadian archaeologist Knut Fladmark. He theorized that with the use of watercraft, people gradually colonized unglaciated refuges and areas along the continental shelf exposed by the lower sea level. Fladmark's hypothesis received additional support from the fact that the greatest diversity in Native American languages occurs along the west coast of the Americas, suggesting that this region has been settled the longest.

More recent geologic studies documented deglaciation and the existence of ice-free areas throughout major coastal areas of British Columbia, Canada, by 13,000 years ago. Research now indicates that sizable areas of southeastern Alaska along the inner continental shelf were not covered by ice toward the end of the last Ice Age. One study suggests that except for a 250-mile coastal area between southwestern British Columbia and Washington State, the Northwest Coast of North America was largely free of ice by approximately 16,000 years ago. Vast areas along the coast may have been deglaciated beginning around 16,000 years ago, possibly providing a coastal corridor for the movement of plants, animals, and humans sometime between 13,000 and 14,000 years ago.

The coastal hypothesis has gained increasing support in recent years because the remains of large land

the coasts, an indication that a midcontinental ice-free corridor was actually implausible

○ humans probably would have been able to find enough resources along the coastal corridor

○ the continental shelf was still exposed by lower sea levels during the period when the southward migration of people began

10. The word inhospitable in the passage is closest in meaning to

- not familiar
- not suitable
- not dangerous
- not reachable

11. According to paragraph 5, the most recent geologic research provides support for a first colonization of America dating as far back as

- 16,000 years ago
- 14,000 years ago
- 12,500 years ago
- 10,000 years ago

Paragraph 6:

12. The word impetus in the passage is closest in meaning to

- chance
- protection
- possibility
- incentive

Paragraph 1:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Moreover, other evidence suggests that even if an ice-free corridor did exist, it would have lacked the resources needed for human colonization.

Where could the sentence best fit?

14.

Recent evidence favors a rival to the

animals, such as caribou and brown bears, have been found in southeastern Alaska dating between 10,000 and 12,500 years ago. This is the time period in which most scientists formerly believed the area to be inhospitable for humans. It has been suggested that if the environment were capable of supporting breeding populations of bears, there would have been enough food resources to support humans. Fladmark and others believe that the first human colonization of America occurred by boat along the Northwest Coast during the very late Ice Age, possibly as early as 14,000 years ago.

The coastal hypothesis suggests an economy based on marine mammal hunting, saltwater fishing gathering, and the use of watercraft. Because of the barrier of ice to the east, the Pacific Ocean to the west, and populated areas to the north, there may have been a greater impetus for people to move in a southerly direction.

It has long been accepted that the Americas were colonized by a migration of peoples from Asia, slowly traveling across a land bridge called Beringia (now the Bering Strait between northeastern Asia and Alaska) during the last Ice Age.

■ The first water craft theory about the migration was that around 11,000-12,000 years ago there was an ice-free corridor stretching from eastern Beringia to the areas of North America south of the great northern glaciers. It was the midcontinental corridor between two massive ice sheets-the Laurentide to the west-that enabled the southward

long-standing theory that the Americas were colonized 11,000-12,000 years ago by people migrating south from Beringia along a midcontinental ice-free corridor

-
-
-

Answer Choices

1. Evidence that an ice-free corridor between two ice sheets developed when the continental ice first began to melt came primarily from radiocarbon dating.
2. There is growing support for the theory that migration took place much earlier, by sea, following a coastal route along Alaska and down the northwest coast.
3. Recent geologic evidence indicates that contrary to what had been believed, substantial areas along the coast were free of ice as early as 16,000 years ago.
4. Research now indicates that the parts of the inner continental shelf that remained covered with ice were colonized by a variety of early human groups well adapted to living in extremely cold environments.
5. There is evidence suggesting that areas along the coast may have contained enough food resources between 13,000 and 14,000 years ago to have made human colonization possible.
6. Even though the northern part of the continent allowed for a more varied economy, several early human groups quickly moved south.

migration. ■But belief in this ice-free corridor began to crumble when paleoecologist Glen MacDonald demonstrated that some of the most important radiocarbon dates used to support the existence of an ice-free corridor were incorrect. ■He persuasively argued that such an ice-free corridor did not exist until much later, when the continental ice began its final retreat. ■

Paragraph 1:

1. The word justified in the passage is closest in meaning to
 - supported
 - shaped
 - stimulated
 - suggested

REFLECTION IN TEACHING

Teachers, it is thought, benefit from the practice of reflection, the conscious act of thinking deeply about and carefully examining the interactions and events within their own classrooms. Educators T. Wildman and J. Niles

2. According to paragraph 1, it was believed that reflection could help teachers
- understand intellectual principles of teaching
 - strengthen their intellectual connection to their work
 - use scientific fact to improve discipline and teaching
 - adopt a more disciplined approach to teaching

Paragraph 2:

3. The word flourish in the passage is closest in meaning to

- continue
- occur
- succeed
- apply

4. All of the following are mentioned about the experimental strategy described in paragraph 2 EXCEPT:

- It was designed so that teachers would eventually reflect without help from others
- It was used by a group of teachers over a period of years.
- It involved having teachers take part in discussions of classroom events
- It involved having teachers record in writing their reflections about teaching

5. According to paragraph 2, Wildman and Niles worried that the teachers they were working with might feel that

- the number of teachers involved in their program was too large
- the concepts of teacher reflection were so abstract that they could not be applied
- the ideas involved in reflection were actually not new and refreshing
- several years would be needed to acquire the habit of reflecting on their teaching

(1987) describe a scheme for developing reflective practice in experienced teachers. This was justified by the view that reflective practice could help teachers to feel more intellectually involved in their role and work in teaching and enable them to cope with the paucity of scientific fact and the uncertainty of knowledge in the discipline of teaching.

Wildman and Niles were particularly interested in investigating the conditions under which reflection might flourish-a subject on which there is little guidance in the literature. They designed an experimental strategy for a group of teachers in Virginia and worked with 40 practicing teachers over several years. They were concerned that many would be "drawn to these new, refreshing conceptions of teaching only to find that the void between the abstractions and the realities of teacher reflection is too great to bridge. Reflection on a complex task such as teaching is not easy." The teachers were taken through a program of talking about teaching events, moving on to reflecting about specific issues in a supported, and later an independent, manner.

Wildman and Niles observed that systematic reflection on teaching required a sound ability to understand classroom events in an objective manner. They describe the initial understanding in the teachers with whom they were working as being "utilitarian...and not rich or detailed enough to drive systematic reflection." Teachers rarely have the time or opportunities to view their own or the teaching of others in an objective manner. Further observation

Paragraph 3:

6. The word objective in the passage is closest in meaning to

- unbiased
- positive
- systematic
- thorough

7. According to paragraph 3, what did the teachers working with Wildman and Niles often fail to do when they attempted to practice reflection?

- Correctly calculate the amount of time needed for reflection
- Provide sufficiently detailed descriptions of the methods they used to help them reflect
- Examine thoughtfully the possible causes of events in their classrooms
- Establish realistic goals for themselves in practicing reflection

Paragraph 4:

8. How is paragraph 4 related to other aspects of the discussion of reflection in the passage?

- It describes and comments on steps taken to overcome problems identified earlier in the passage
- It challenges the earlier claim that teachers rarely have the time to think about their own or others' teaching
- It identifies advantages gained by teachers who followed the training program described earlier in the passage
- It explains the process used to define the principles discussed later in the passage

Paragraph 5:

9. The word compelling in the passage is closest in meaning to

- commonly held
- persuasive
- original
- practical

revealed the tendency of teachers to evaluate events rather than review the contributory factors in a considered manner by, in effect, standing outside the situation.

Helping this group of teachers to revise their thinking about classroom events became central. ■This process took time and patience and effective trainers. ■The researchers estimate that the initial training of the same teachers to view events objectively took between 20 and 30 hours, with the same number of hours again being required to practice the skills of reflection.

■Wildman and Niles identify three principles that facilitate reflective practice in a teaching situation. ■The first is support from administrators in an education system, enabling teachers to understand the requirements of reflective practice and how it relates to teaching students. The second is the availability of sufficient time and space. The teachers in the program described how they found it difficult to put aside the immediate demands of others in order to give themselves the time they needed to develop their reflective skills. The third is the development of a collaborative environment with support from other teachers. Support and encouragement were also required to help teachers in the program cope with aspects of their professional life with which they were not comfortable. Wildman and Niles make a summary comment: "Perhaps the most important thing we learned is the idea of the teacher-as-reflective-practitioner will not happen simply because it is a good or even compelling idea."

Paragraph 6:

10. According to paragraph 6, teachers may be discouraged from reflecting because

- it is not generally supported by teacher educators
- the benefits of reflection may not be apparent immediately
- it is impossible to teach and reflect on one's teaching at the same time
- they have often failed in their attempts to become reflective practitioners

11. Which of the sentences below expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

- The practice of being reflective is no longer simply a habit among teachers but something that is externally motivated
- Most teachers need to explore ways to form the habit of reflection even when no external motivation exists
- Many aspects of the motivation to reflect have not been studied, including the comparative benefits of externally motivated and habitual reflection among teachers
- There has not been enough exploration of why teachers practice reflection as a habit with or without external motivation

Paragraph 4

Paragraph 5

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

However, changing teachers' thinking about reflection will not succeed unless there is support for reflection in the teaching environment.

Where could the sentence best fit?

13.

The work of Wildman and Niles suggests the importance of recognizing some of the difficulties of instituting reflective practice. Others have noted this, making a similar point about the teaching profession's cultural inhibitions about reflective practice. Zeichner and Liston (1987) point out the inconsistency between the role of the teacher as a (reflective) professional decision maker and the more usual role of the teacher as a technician, putting into practice the ideas of others. More basic than the cultural issues is the matter of motivation. Becoming a reflective practitioner requires extra work (Jaworski, 1993) and has only vaguely defined goals with, perhaps, little initially perceivable reward and the threat of vulnerability. Few have directly questioned what might lead a teacher to want to become reflective. Apparently, the most obvious reason for teachers to work toward reflective practice is that teacher educators think it is a good thing.
There appear to be many unexplored matters about the motivation to reflect-for example, the value of externally motivated reflection as opposed to that of teachers who might reflect by habit.

Wildman and Niles have conducted research on reflection in teaching

-
-
-

Answer Choices

1. Through their work with Virginia teachers, Wildman and Niles proved conclusively that reflection, though difficult, benefits both teachers and students.
2. Wildman and Niles found that considerable training and practice are required to understand classroom events and develop the skills involved in reflection.
3. Wildman and Niles identified three principles that teachers can use to help themselves cope with problems that may arise as a result of reflection.
4. Wildman and Niles concluded that teachers need sufficient resources as well as the cooperation and encouragement of others to practice reflection.
5. There are numerous obstacles to implementing reflection in schools and insufficient understanding of why teachers might want to reflect.
6. Whether teachers can overcome the difficulties involved in reflection may depend on the nature and intensity of their motivation to reflect.

Paragraph 2:

1. The phrase at random in the passage is closest in meaning to

- finally
- over a long period of time
- successfully
- without a definite pattern

2. It can be inferred from paragraph 2 that the fungi in lichens benefit from their symbiotic

**THE ARRIVAL OF PLANT
LIFE IN HAWAII**

When the Hawaiian islands emerged from the sea as volcanoes, starting about five million years ago, they were far removed from other landmasses. Then, as blazing sunshine alternated with drenching rains, the harsh, barren surfaces of the black rocks slowly began to soften. Winds brought a variety of

relationship with algae in what way?

- The algae help the fungi meet some of their energy needs.
- The algae protect the fungi from the Sun's radiation.
- The algae provide the fungi with greater space for absorbing water.
- The fungi produce less waste in the presence of algae.

3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Some of the earliest important examples of symbiosis—the close cooperation of two or more living things—occur in island communities.
- Symbiosis—the close cooperation of pairs or small groups of living organisms—is especially important in these island environments.
- The first organisms on these islands worked together closely in a relationship known as symbiosis, which is particularly important on islands.
- It is significant to note that organisms in the beginning stages of the development of island life cannot survive without close cooperation.

Paragraph 3:

4. The word abundantly in the passage is closest in meaning to

- occasionally
- plentifully
- usefully
- fortunately

5. The word propagate in the passage is closest in meaning to

- multiply
- emerge
- live
- evolve

life-forms.

Spores light enough to float on the breezes were carried thousands of miles from more ancient lands and deposited at random across the bare mountain flanks. A few of these spores found a toehold on the dark, forbidding rocks and grew and began to work their transformation upon the land. Lichens were probably the first successful flora. These are not single individual plants; each one is a symbiotic combination of an alga and a fungus. The algae capture the Sun's energy by photosynthesis and store it in organic molecules. The fungi absorb moisture and mineral salts from the rocks, passing these on in waste products that nourish algae. It is significant that the earliest living things that built communities on these islands are examples of symbiosis, a phenomenon that depends upon the close cooperation of two or more forms of life and a principle that is very important in island communities.

Lichens helped to speed the decomposition of the hard rock surfaces, preparing a soft bed of soil that was abundantly supplied with minerals that had been carried in the molten rock from the bowels of Earth. Now, other forms of life could take hold: ferns and mosses (two of the most ancient types of land plants) that flourish even in rock crevices. ■ These plants propagate by producing spores—tiny fertilized cells that contain all the instructions for making a new plant—but the spores are unprotected by any outer coating and carry no supply of nutrient. ■ Vast numbers of them fall on the ground beneath the mother plants. ■ Sometimes they are carried farther afield by water or by wind. ■ But only

6. According to paragraph 3, what was the relationship between lichens and ferns in the development of plant life on Hawaii?

○Ferns were able to grow because lichens created suitable soil.

○The decomposition of ferns produced minerals that were used by lichens.

○Lichens and ferns competed to grow in the same rocky environments.

○Lichens and ferns were typically found together in volcanic areas.

Paragraph 4

7. The word This in the passage refers to

○the spread of ferns and mosses in Hawaii

○the creation of the Hawaiian Islands

○the evolution of ferns

○the development of plants that produce seeds

8. According to paragraph 4, why do seeds have a greater chance of survival than spores do? To receive credit, you must select TWO answer choices.

○Seeds need less water to grow into a mature plant than spores do.

○Seeds do not need to rely on outside sources of nutrients.

○Seeds are better protected from environmental dangers than spores are.

○Seeds are heavier than spores and are therefore more likely to take root and grow.

9. Why does the author mention a nut, a peach, and a cherry?

○To indicate that some seeds are less likely to survive than others

○To point out that many angiosperms can be eaten

○To provide examples of blooming plants

○To illustrate the variety of coverings among angiosperm seeds

10. The word dormant in the passage is

those few spores that settle down in very favorable locations can start new life; the vast majority fall on barren ground. By force of sheer numbers, however, the mosses and ferns reached Hawaii, survived, and multiplied. Some species developed great size, becoming tree ferns that even now grow in the Hawaiian forests.

Many millions of years after ferns evolved (but long before the Hawaiian Island were born from the sea), another kind of flora evolved on Earth: the seed-bearing plants. This was a wonderful biological invention. The seed has an outer coating that surrounds the genetic material of the new plant, and inside this covering is a concentrated supply of nutrients. Thus, the seed's chances of survival are greatly enhanced over those of the naked spore. One type of seed-bearing plant, the angiosperm, includes all forms of blooming vegetation. In the angiosperm the seeds are wrapped in an additional layer of covering. Some of these coats are hard-like the shell of a nut for extra protection. Some are soft and tempting, like a peach or a cherry. In some angiosperm the seeds are equipped with gossamer wings, like the dandelion and milkweed seeds. These new characteristics offered better ways for the seeds to move to new habitats. They could travel through the air, float in water, and lie dormant for many months.

Plants with large, buoyant seeds-like coconuts-drift on ocean currents and are washed up on the shores. Remarkably resistant to the vicissitudes of ocean travel, they can survive prolonged immersion in saltwater. When

closest in meaning to

- hidden
- inactive
- underground
- preserved

Paragraph 5:

11. According to paragraph 5, a major reason that coconuts can establish themselves in distant locations is that their seeds can

- survive long exposure to heat on island beaches
- float and survive for long periods in ocean water
- use saltwater for maintenance and growth
- maintain hard, protective coats even after growing roots

12. According to the passage, which of the following characteristics do spores and seeds have in common?

- They may be surrounded by several layers of covering
- They are produced by flowering plants.
- They may be spread by wind.
- They are able to grow in barren soils.

Paragraph 3

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

So since the chances of survival for any individual spore are small, the plants have to produce many spores in order to propagate.

Where could the sentence best fit?

14.

After the formation of the Hawaiian Islands, much time passed before conditions were suitable for plant life.

-
-
-

they come to rest on warm beaches and the conditions are favorable, the seed coats softer. Nourished by their imported supply of nutrients, the young plants push out their roots and establish their place in the sun.

By means of these seeds, plants spread more widely to new locations, even to isolated islands like the Hawaiian archipelago, which lies more than 2,000 miles west of California and 3,500 miles east of Japan. The seeds of grasses, flowers, and blooming trees made the long trips to these islands. (Grasses are simple forms of angiosperms that bear their encapsulated seeds on long stalks.) In a surprisingly short time, angiosperms filled many of the land areas on Hawaii that had been bare.

Answers Choices

1. Algae are classified as symbiotic because they produce energy through the process of photosynthesis.
 2. The first successful plants on Hawaii were probably lichens, which consist of algae and fungi living in a symbiotic relationship.
 3. Lichens helped create favorable conditions for the growth of spore-producing plants such as ferns and mosses.
 4. Seed-bearing plants evolved much later than spore-producing plants, but both types of plants had evolved well before the formation of the Hawaiian Islands.
 5. Unlike spores, seeds must move to new habitats in order to have a strong chance of survival and growth.
 6. Seed-bearing plants arrived and spread quickly in Hawaii, thanks to characteristics that increased their seeds' ability to survive and to move to different areas.
-
-

TPO 10

Paragraph 2 □

1. The word status in the passage is closest in meaning to

- origin
- importance
- quality
- design

2. According to paragraph 2, which of the following is true of Chinese ceramics?

- The function of ceramics remained the same from dynasty to dynasty.
- The use of ceramics as trade objects is better documented than the use of ceramics as ritual objects.

Chinese Pottery

China has one of the world's oldest continuous civilizations—despite invasions and occasional foreign rule. A country as vast as China with so long-lasting a civilization has a complex social and visual history, within which pottery and porcelain play a major role.

The function and status of ceramics in China varied from dynasty to dynasty, so they may be utilitarian, burial, trade-collectors', or even ritual objects, according to their quality and the era in which they were made. The

- There was little variation in quality for any type of ceramics over time.
- Some religious sculptures were made using the earthenware type of ceramics.

Paragraph 3 □

3. The word evolve in the passage is closest in meaning to

- divided
- extended
- developed
- vanished

4. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- While stonewares and porcelains are found throughout most historical periods, religious sculpture is limited to the ancient period.
- Religious sculpture was created in most periods, but its history is less clear than that of stonewares or porcelains because some old forms continued to be used even when new ones were developed.
- While stonewares and porcelains changed throughout history, religious sculpture remained uniform in form and use.
- The historical development of religious sculpture is relatively unclear because religious sculptures sometimes resemble earthenware architectural ornaments.

5. Paragraph 3 supports all of the following concerning the history of the ceramic industry in China EXCEPT:

- The earliest high-fired ceramics were of poor quality.
- Ceramics produced during the Tang and Ming dynasties sometimes incorporated multiple colors.
- Earthenware ceramics were produced in China before stonewares were.

ceramics fall into three broad types—earthenware, stoneware, and porcelain—for vessels, architectural items such as roof tiles, and modeled objects and figures. In addition, there was an important group of sculptures made for religious use, the majority of which were produced in earthenware.

The earliest ceramics were fired to earthenware temperatures, but as early as the fifteenth century B.C., high-temperature stonewares were being made with glazed surfaces. During the Six Dynasties period (AD 265-589), kilns in north China were producing high-fired ceramics of good quality. Whitewares produced in Hebei and Henan provinces from the seventh to the tenth centuries evolved into the highly prized porcelains of the Song dynasty (AD. 960-1279), long regarded as one of the high points in the history of China's ceramic industry. The tradition of religious sculpture extends over most historical periods but is less clearly delineated than that of stonewares or porcelains, for it embraces the old custom of earthenware burial ceramics with later religious images and architectural ornament. Ceramic products also include lead-glazed tomb models of the Han dynasty, three-color lead-glazed vessels and figures of the Tang dynasty, and Ming three-color temple ornaments, in which the motifs were outlined in a raised trail of slip- as well as the many burial ceramics produced in imitation of vessels made in materials of higher intrinsic value.

Trade between the West and the settled and prosperous Chinese dynasties introduced new forms and different

- The Song dynasty period was notable for the production of high quality porcelain ceramics.

Paragraph 4 □

6. The word instigate in the passage is closest in meaning to

- improved
- investigated
- narrowed
- caused

7. According to paragraph 4, one consequence of the trade of Chinese ceramics was

- The transfer of a distinctive blue pigment from China to the Middle East
- An immediate change from earthenware production to porcelain production in European countries
- Chinese production of wares made for the European market
- A decreased number of porcelain vessels available on the European market

Paragraph 5 □

8. The word whereas in the passage is closest in meaning to

- while
- previously
- surprisingly
- because

9. In paragraph 5, the author compares the designs on Chinese pots to those on Greek pots in order to

- emphasize that while Chinese pots were decorative, Greek pots were functional
- argue that the designs on Chinese pots had specific meanings and were not just decorative
- argue that twentieth-century scholars are better able to understand these designs than were ancient scholars

technologies. One of the most far-reaching examples is the impact of the fine ninth-century AD Chinese porcelain wares imported into the Arab world. So admired were these pieces that they encouraged the development of earthenware made in imitation of porcelain and instigated research into the method of their manufacture. From the Middle East the Chinese acquired a blue pigment—a purified form of cobalt oxide unobtainable at that time in China—that contained only a low level of manganese. Cobalt ores found in China have a high manganese content, which produces a more muted blue-gray color. In the seventeenth century, the trading activities of the Dutch East India Company resulted in vast quantities of decorated Chinese porcelain being brought to Europe, which stimulated and influenced the work of a wide variety of wares, notably Delft. The Chinese themselves adapted many specific vessel forms from the West, such as bottles with long spouts, and designed a range of decorative patterns especially for the European market.

Just as painted designs on Greek pots may seem today to be purely decorative, whereas in fact they were carefully and precisely worked out so that at the time, their meaning was clear, so it is with Chinese pots. To twentieth-century eyes, Chinese pottery may appear merely decorative, yet to the Chinese the form of each object and its adornment had meaning and significance. The dragon represented the emperor, and the phoenix, the empress; the pomegranate indicated fertility, and a pair of fish, happiness; mandarin ducks stood for wedded bliss;

- explain how scholars have identified the meaning of specific images on Chinese pots

10. Which of the following is mentioned in paragraph 5 as being symbolically represented on Chinese ceramics?

- Chinese rulers
- love of homeland
- loyalty to friends
- success in trade

11. Paragraph 5 suggests which of the following about the decorations on Chinese pottery?

- They had more importance for aristocrats than for ordinary citizens.
- Their significance may have remained clear had the Chinese not come under foreign influence.
- They contain some of the same images that appear on Greek pots
- Their significance is now as clear to twentieth century observers as it was to the early Chinese.

Paragraph 6 □

12. The word these in the passage refers to

- religious ceremonies
- descriptions
- types of ware
- pots

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Foreign trade was also responsible for certain innovations in coloring.

Where could the sentence best fit?

14.

Ceramics have been produced in China for a very long time.

●

the pine tree, peach, and crane are emblems of long life; and fish leaping from waves indicated success in the civil service examinations. Only when European decorative themes were introduced did these meanings become obscured or even lost.

From early times pots were used in both religious and secular contexts. The imperial court commissioned work and in the Yuan dynasty (A.D. 1279-1368) an imperial ceramic factory was established at Jingdezhen. Pots played an important part in some religious ceremonies. Long and often lyrical descriptions of the different types of ware exist that assist in classifying pots, although these sometimes confuse an already large and complicated picture.

Paragraph 4 □ Trade between the West and the settled and prosperous Chinese dynasties introduced new forms and different technologies. One of the most far-reaching examples is the impact of the fine ninth-century AD. Chinese porcelain wares imported into the Arab world. ■ So admired were these pieces that they encouraged the development of earthenware made in imitation of porcelain and instigated research into the method of their manufacture. ■ From the Middle East the Chinese acquired a blue pigment—a purified form of cobalt oxide unobtainable at that time in China—that contained only a low level of manganese. Cobalt ores found in China have a high manganese content, which produces a more muted blue-gray color. ■ In the seventeenth century, the

-
-

Answer choices

- The Chinese produced earthenware, stoneware, and porcelain pottery and they used their ceramics for a variety of utilitarian, architectural, and ceremonial purposes.
- The shape and decoration of ceramics produced for religious use in China were influenced by Chinese ceramics produced for export.
- As a result of trade relations, Chinese ceramic production changed and Chinese influenced the ceramics production of other countries
- Chinese burial ceramics have the longest and most varied history of production and were frequently decorated with written texts that help scholars date them.
- Before China had contact with the West, the meaning of various designs used to decorate Chinese ceramics was well understood.
- Ceramics made in imperial factories were used in both religious and non-religious contexts

trading activities of the Dutch East India Company resulted in vast quantities of decorated Chinese porcelain being brought to Europe, which stimulated and influenced the work of a wide variety of wares, notably Delft. ■The Chinese themselves adapted many specific vessel forms from the West, such as bottles with long spouts, and designed a range of decorative patterns especially for the European market.

Paragraph 1 □

1. According to paragraph 1, which of the following must we find out in order to determine the impact of human activities upon climate?
 - The major changes in climate over the past millennia
 - The degree to which the climate varies naturally
 - The best method for measuring climatic change
 - The millennium when humans began to interfere with the climate

Paragraph 2 □

2. According to paragraph 2, an advantage of proxy records over instrumental records is that

Variations in the Climate

One of the most difficult aspects of deciding whether current climatic events reveal evidence of the impact of human activities is that it is hard to get a measure of what constitutes the natural variability of the climate. We know that over the past millennia the climate has undergone major changes without any significant human intervention. We also know that the global climate system is immensely complicated and that everything is in some way connected, and so the system is capable of fluctuating in unexpected ways. We need therefore to know how much the climate can vary of its own accord in order to interpret with confidence the

- they are more-reliable measures of climatic variability in the past century
- they provide more-accurate measures of local temperatures
- they provide information on climate fluctuations further back in time
- they reveal information about the human impact on the climate

Paragraph 3 □

3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

- Because physical and chemical properties of substances are unchanging, they are useful records of climate fluctuations over time
- For hundreds or thousands of years, people have been observing changes in the chemical and physical properties of substances in order to infer climate change
- Because it takes long periods of time for the climate to change, systematic changes in the properties of substances are difficult to observe.
- Changes in systematically deposited substances that are affected by climate can indicate climate variations over time.

4. According to paragraph 3, scientists are able to reconstruct proxy temperature records by

- studying regional differences in temperature variations
- studying and dating changes in the properties of substances
- observing changes in present day climate conditions
- inferring past climate shifts from observations of current climatic changes

Paragraph 4 □

5. The word striking in the passage is closest in meaning to

extent to which recent changes are natural as opposed to being the result of human activities.

Instrumental records do not go back far enough to provide us with reliable measurements of global climatic variability on timescales longer than a century. What we do know is that as we include longer time intervals, the record shows increasing evidence of slow swings in climate between different regimes. To build up a better picture of fluctuations appreciably further back in time requires us to use proxy records.

Over long periods of time, substances whose physical and chemical properties change with the ambient climate at the time can be deposited in a systematic way to provide a continuous record of changes in those properties overtime, sometimes for hundreds or thousands of years. Generally, the layering occurs on an annual basis, hence the observed changes in the records can be dated. Information on temperature, rainfall, and other aspects of the climate that can be inferred from the systematic changes in properties is usually referred to as proxy data. Proxy temperature records have been reconstructed from ice core drilled out of the central Greenland ice cap, calcite shells embedded in layered lake sediments in Western Europe, ocean floor sediment cores from the tropical Atlantic Ocean, ice cores from Peruvian glaciers, and ice cores from eastern Antarctica. While these records provide broadly consistent indications that temperature variations can occur on a

- noticeable
- confusing
- true
- unlikely

Paragraph 3 □

Paragraph 4 □

6. According to paragraphs 3 and 4, proxy data have suggested all of the following about the climate EXCEPT:

- Regional climates may change overtime.
- The climate has changed very little in the past 10.000 years.
- Global temperatures vary more than regional temperatures.
- Important natural changes in climate have occurred over large timescales.

Paragraph 5 □

7. The word erratic in the passage is closest in meaning to

- dramatic
- important
- unpredictable
- common

8. All of the following are mentioned in paragraph 5 as natural causes of climate change EXCEPT

- atmospheric changes
- the slow movement of landmasses
- fluctuations in the amount of ice and snow
- changes in ocean activity

一想到新托福，就想到咱老无。

Paragraph 6 □

9. According to paragraph 6, which of the following is true of computer models of the global climate?

- The information they produce is still limited.
- They are currently most useful in understanding past climatic behaviors.

global scale, there are nonetheless some intriguing differences, which suggest that the pattern of temperature variations in regional climates can also differ significantly from each other.

What the proxy records make abundantly clear is that there have been significant natural changes in the climate over timescales longer than a few thousand years. Equally striking, however, is the relative stability of the climate in the past 10.000 years (the Holocene period).

To the extent that the coverage of the global climate from these records can provide a measure of its true variability, it should at least indicate how all the natural causes of climate change have combined. These include the chaotic fluctuations of the atmosphere, the slower but equally erratic behavior of the oceans, changes in the land surfaces, and the extent of ice and snow. Also included will be any variations that have arisen from volcanic activity, solar activity, and, possibly, human activities.

One way to estimate how all the various processes leading to climate variability will combine is by using computer models of the global climate. They can do only so much to represent the full complexity of the global climate and hence may give only limited information about natural variability. Studies suggest that to date the variability in computer simulations is considerably smaller than in data obtained from the proxy records.

In addition to the internal variability of the global climate system itself, there is the added factor of external influences,

- They allow researchers to interpret the data obtained from proxy records.
- They do not provide information about regional climates

Paragraph 7 □

10. The word deliberations in the passage is closest in meaning to

- records
- discussions
- results
- variations

11. The word invoked in the passage is closest in meaning to

- demonstrated
- called upon
- supported
- expected

12. What is the author's purpose in presenting the information in paragraph 7?

- To compare the influence of volcanoes and solar activity on climate variability with the influence of factors external to the global climate system
- To indicate that there are other types of influences on climate variability in addition to those previously discussed
- To explain how external influences on climate variability differ from internal influences
- To argue that the rapid warming of Earth in recent decades cannot be explained

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Indeed, the contribution of volcanoes and solar activity would more likely have been to actually reduce the rate of warming slightly.

Where would the sentence best fit?

such as volcanoes and solar activity. There is a growing body of opinion that both these physical variations have a measurable impact on the climate. Thus we need to be able to include these in our deliberations. Some current analyses conclude that volcanoes and solar activity explain quite a considerable amount of the observed variability in the period from the seventeenth to the early twentieth century's, but that they cannot be invoked to explain the rapid warming in recent decades.

Paragraph 7 □ In addition to the internal variability of the global climate system itself, there is the added factor of external influences, such as volcanoes and solar activity. ■ There is a growing body of opinion that both these physical variations have a measurable impact on the climate. ■ Thus we need to be able to include these in our deliberations. ■ Some current analyses conclude that volcanoes and solar activity explain quite a considerable amount of the observed variability in the period from the seventeenth to the early twentieth

14.

A number of different and complex factors influence changes in the global climate over long periods of time.

Answer choices

- In the absence of instrumental records, proxy data allow scientists to infer information about past climates.
- Scientists see a consistent pattern in the global temperature variations that have occurred in the past.
- Computer models are used to estimate how the different causes of climate variability combine to account for the climate variability that occurs.
- Scientists have successfully separated natural climate variation from changes related to human activities.
- Scientists believe that activities outside the global climate system, such as volcanoes and solar activity may have significant effects on the system.
- Scientists have concluded that human activity accounts for the rapid global warming in recent decades.

century's, but that they cannot be invoked to explain the rapid warming in recent decades.■

Paragraph 1 □

1. According to paragraph 1, what was true of Europe during the medieval period?

- Agricultural productivity declined.
- There was relatively little economic growth.
- The general level of prosperity declined.
- Foreign trade began to play an important role in the economy.

2. The word **key** in the passage is closest in meaning to

- historical
- many

Seventeenth-Century European Economic Growth

In the late sixteenth century and into the seventeenth, Europe continued the growth that had lifted it out of the relatively less prosperous medieval period (from the mid 400s to the late 1400s). Among the **key** factors behind this growth were increased agricultural productivity and an expansion of trade.

Populations cannot grow unless the rural economy can produce enough additional food to feed more people.

- important
- hidden

Paragraph 2 □

3. According to paragraph 2, one effect of the desire to increase food production was that
- land was cultivated in a different way
 - more farmers were needed
 - the rural economy was weakened
 - forests and wetlands were used for farming

Paragraph 3 □

4. According to paragraph 3, what was one reason villages had such great economic potential?
- Villages were located in regions where agricultural production was relatively advanced.
 - Villages were relatively small in population and size compared with urban areas.
 - Some village inhabitants made investments in industrial development.
 - Village inhabitants established markets within their villages.

Paragraph 4 □

5. Paragraph 4 supports the idea that increased agricultural production was important for the expansion of industry primarily because it.
- increased the number of available workers in rural areas
 - provided new types of raw materials for use by industry
 - resulted in an improvement in the health of the rural cottage workers used by manufacturers
 - helped repair some of the ravages of the Thirty Years' War

6. The word meager in the passage is

During the sixteenth century, farmers brought more land into cultivation at the expense of forests and fens (low-lying wetlands). Dutch land reclamation in the Netherlands in the sixteenth and seventeenth centuries provides the most spectacular example of the expansion of farmland: the Dutch reclaimed more than 36,000 acres from 1590 to 1615 alone.

Much of the potential for European economic development lay in what at first glance would seem to have been only sleepy villages. Such villages, however, generally lay in regions of relatively advanced agricultural production, permitting not only the survival of peasants but also the accumulation of an agricultural surplus for investment. They had access to urban merchants, markets, and trade routes.

Increased agricultural production in turn facilitated rural industry, an intrinsic part of the expansion of industry. Woolens and textile manufacturers, in particular, utilized rural cottage (in-home) production, which took advantage of cheap and plentiful rural labor. In the German states, the ravages of the Thirty Years' War (1618-1648) further moved textile production into the countryside. Members of poor peasant families spun or wove cloth and linens at home for scant remuneration in an attempt to supplement meager family income.

More extended trading networks also helped develop Europe's economy in this period. English and Dutch ships carrying rye from the Baltic states

closest in meaning to

- very necessary
- very low
- traditional
- primary

Paragraph 5 □

7. Why does the author mention that English and Dutch ships carrying rye from the Baltic states reached Spain and Portugal?

- To suggest that England and the Netherlands were the two most important trading nations in seventeenth-century Europe
- To suggest how extensive trading relations were
- To contrast the importance of agricultural products with manufactured products
- To argue that shipping introduced a range of new products

Paragraph 6 □

8. By including the quotation in paragraph 6 by the financier from Antwerp, the author is emphasizing that

- sailing was an important aspect of the economy
- increasing the number of water routes made trade possible
- bills of exchange were necessary for successful trading
- financiers often exaggerated the need for bills of exchange

9. According to paragraph 6, merchants were able to avoid the risk of carrying large amounts of gold and silver by

- using third parties in Marseille to buy goods for them
- doing all their business by using Dutch currency
- paying for their purchases through bills of exchange
- waiting to pay for goods until the

reached Spain and Portugal. Population growth generated an expansion of small-scale manufacturing, particularly of handicrafts, textiles, and metal production in England, Flanders, parts of northern Italy, the southwestern German states, and parts of Spain. Only iron smelting and mining required marshaling a significant amount of capital (wealth invested to create more wealth).

The development of banking and other financial services contributed to the expansion of trade. By the middle of the sixteenth century, financiers and traders commonly accepted bills of exchange in place of gold or silver for other goods. Bills of exchange, which had their origins in medieval Italy, were promissory notes (written promises to pay a specified amount of money by a certain date) that could be sold to third parties. In this way, they provided credit. At mid-century, an Antwerp financier only slightly exaggerated when he claimed, "One can no more trade without bills of exchange than sail without water." Merchants no longer had to carry gold and silver over long, dangerous journeys. An Amsterdam merchant purchasing soap from a merchant in Marseille could go to an exchanger and pay the exchanger the equivalent sum in guilders, the Dutch currency. The exchanger would then send a bill of exchange to a colleague in Marseille, authorizing the colleague to pay the Marseille merchant in the merchant's own currency after the actual exchange of goods had taken place.

Bills of exchange contributed to the development of banks, as

goods had been delivered

Paragraph 7 □

10. According to paragraph 7, until the eighteenth century, it was the principal function of which of the following to provide funds for the state?

- Bills of exchange
- Exchangers who took loans
- Banks
- Business investment

Paragraph 8 □

11. The phrase an English innovation in the passage is closest in meaning to

- a new development introduced by the English
- an arrangement found only in England
- a type of agreement negotiated in English
- a type of partnership based on English law

12. According to paragraph 8, each of the following was a source of funds used to finance economic expansion EXCEPT

- groups of investors engaged in short-term financial cooperation
- the state
- wealthy merchants
- joint-stock companies

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

They could also avoid having to identify and assess the value of a wide variety of coins issued in many different places.

Where would the sentence best fit?

14.

In late sixteenth-and early seventeenth-century Europe, increased

exchangers began to provide loans. Not until the eighteenth century, however, did such banks as the Bank of Amsterdam and the Bank of England begin to provide capital for business investment. Their principal function was to provide funds for the state.

The rapid expansion in international trade also benefitted from an infusion of capital, stemming largely from gold and silver brought by Spanish vessels from the Americas. This capital financed the production of goods, storage, trade, and even credit across Europe and overseas. Moreover an increased credit supply was generated by investments and loans by bankers and wealthy merchants to states and by joint-stock partnerships - an English innovation (the first major company began in 1600). Unlike short-term financial cooperation between investors for a single commercial undertaking, joint-stock companies provided permanent funding of capital by drawing on the investments of merchants and other investors who purchased shares in the company.

Paragraph 6 □ The development of banking and other financial services contributed to the expansion of trade. By the middle of the sixteenth century, financiers and traders commonly accepted bills of exchange in place of gold or silver for other goods. Bills of exchange, which had their origins in medieval Italy, were promissory notes (written promises to pay a specified amount of money by a certain date) that could be sold to third parties. In this way, they provided credit. ■ At mid-century, an

agricultural production and the expansion of trade were important in economic growth

Answer choices

○ Bringing more land under cultivation produced enough food to create surpluses for trade and investment as well as for supporting the larger populations that led to the growth of rural industry.

○ Most rural villages established an arrangement with a nearby urban center that enabled villagers to take advantage of urban markets to sell any handicrafts they produced.

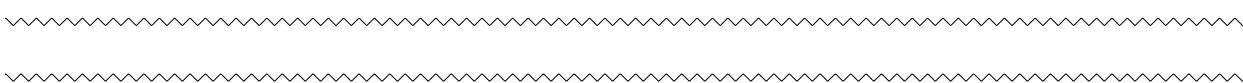
○ Increases in population and the expansion of trade led to increased manufacturing, much of it small-scale in character but some requiring significant capital investment.

○ Increased capital was required for the production of goods, for storage, for trade, and for the provision of credit throughout of Europe as well as distant markets overseas.

○ Bills of exchange were invented in medieval Italy but became less important as banks began to provide loans for merchants.

○ The expansion of trade was facilitated by developments in banking and financial services and benefitted from the huge influx of capital in the form of gold silver from the Americas

Antwerp financier only slightly exaggerated when he claimed, "One can no more trade without bills of exchange than sail without water." ■Merchants no longer had to carry gold and silver over long, dangerous journeys. ■An Amsterdam merchant purchasing soap from a merchant in Marseille could go to an exchanger and pay the exchanger the equivalent sum in guilders, the Dutch currency. ■The exchanger would then send a bill of exchange to a colleague in Marseille, authorizing the colleague to pay the Marseille merchant in the merchant's own currency after the actual exchange of goods had taken place.



TPO 11

Paragraph 1 □

1. The word vital in the passage is closest in

- attractive
- essential
- usual
- practical

2. Paragraph 1 suggests that one reason Egyptian art is viewed less favorably than other

Ancient Egyptian Sculpture

In order to understand ancient Egyptian art, it is vital to know as much as possible of the elite Egyptians' view of the world and the functions and contexts of the art produced for them. Without this knowledge we can appreciate only the formal content of Egyptian art, and we

art is that Egyptian art lacks

- a realistic sense of human body proportion
- a focus on distinctive forms of varying sizes
- the originality of European art
- the capacity to show the human body in motion

3. In paragraph 1, the author mentions all of the following as necessary in appreciating Egyptian art EXCEPT an understanding of

- the reasons why the art was made
- the nature of aristocratic Egyptian beliefs
- the influences of Egyptian art on later art such as classical Greek art
- how the art was used

Paragraph 2 □

4. According to paragraph 2, why are Egyptian statues portrayed frontally?

- To create a psychological effect of distance and isolation
- To allow them to fulfill their important role in ceremonies of Egyptian life
- To provide a contrast to statues with a decorative function
- To suggest the rigid, unchanging Egyptian philosophical attitudes

5. The word context in the passage is closest in meaning to

- connection
- influence
- environment
- requirement

6. The author mentions an architectural setting in the passage in order to

- suggest that architecture was as important as sculpture to Egyptian artists
- offer 3 further explanation for the frontal pose of Egyptian statues
- explain how the display of statues replaced

will fail to understand why it was produced or the concepts that shaped it and caused it to adopt its distinctive forms. In fact, a lack of understanding concerning the purposes of Egyptian art has often led it to be compared unfavorably with the art of other cultures: Why did the Egyptians not develop sculpture in which the body turned and twisted through space like classical Greek statuary? Why do the artists seem to get left and right confused? And why did they not discover the geometric perspective as European artists did in the Renaissance? The answer to such questions has nothing to do with a lack of skill or imagination on the part of Egyptian artists and everything to do with the purposes for which they were producing their art.

The majority of three-dimensional representations, whether standing, seated, or kneeling, exhibit what is called frontality: they face straight ahead, neither twisting nor turning. When such statues are viewed in isolation, out of their original context and without knowledge of their function, it is easy to criticize them for their rigid attitudes that remained unchanged for three thousand years. Frontality is, however, directly related to the functions of Egyptian statuary and the contexts in which the statues were set up. Statues were created not for their decorative effect but to play a primary role in the cults of the gods, the king, and the dead. They were designed to be put in places where these beings could manifest themselves in order to be the recipients of ritual actions. Thus it made sense to show the statue looking ahead at what

other forms of architectural decoration

- illustrate the religious function of Egyptian statues

7. The word they in the passage refers to

- statues
- gateways
- temples
- pillared courts

Paragraph 3 □

8. According to paragraph 3, why were certain areas of a stone statue left uncarved?

- To prevent damage by providing physical stability
- To emphasize that the material was as important as the figure itself
- To emphasize that the figure was not meant to be a real human being
- To provide another artist with the chance to finish the carving

9. The word core in the passage is closest in meaning to

- material
- layer
- center
- frame

10. According to paragraph 3, which of the following statements about wooden statues is true?

- Wooden statues were usually larger than stone statues.
- Wooden statues were made from a single piece of wood.
- Wooden statues contained pieces of metal or stone attached to the front.
- Wooden statues had a different effect on the viewer than stone statues.

Paragraph 4 □

11. The word depicts in the passage is closest in meaning to

was happening in front of it, so that the living performer of the ritual could interact with the divine or deceased recipient. Very often such statues were enclosed in rectangular shrines or wall niches whose only opening was at the front, making it natural for the statue to display frontality. Other statues were designed to be placed within an architectural setting, for instance, in front of the monumental entrance gateways to temples known as pylons, or in pillared courts, where they would be placed against or between pillars: their frontality worked perfectly within the architectural context.

Statues were normally made of stone, wood, or metal. Stone statues were worked from single rectangular blocks of material and retained the compactness of the original shape. The stone between the arms and the body and between the legs in standing figures or the legs and the seat in seated ones was not normally cut away. From a practical aspect this protected the figures against breakage and psychologically gives the images a sense of strength and power, usually enhanced by a supporting back pillar. By contrast, wooden statues were carved from several pieces of wood that were pegged together to form the finished work, and metal statues were either made by wrapping sheet metal around a wooden core or cast by the lost wax process. The arms could be held away from the body and carry separate items in their hands; there is no back pillar. The effect is altogether lighter and freer than that achieved in stone, but because both perform the same function, formal wooden and metal statues still display frontality.

- imagines
- classifies
- elevates
- portrays

12. According to paragraph 4, what is the difference between statues that represent the Egyptian elite and statues that represent the nonelite classes?

- Statues of the elite are included in tombs, but statues of the nonelite are not.
- Statues of the elite are in motionless poses, while statues of the nonelite are in active poses.
- Statues of the elite are shown standing, while statues of the nonelite are shown sitting or kneeling
- Statues of the elite serve an important function, while statues of the nonelite are decorative

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

In fact, it is the action and not the figure itself that is important.

Where would the sentence best fit?

14.

The distinctive look of ancient Egyptian sculpture was determined largely by its function.

Answer Choices

- The twisted forms of Egyptian statues indicate their importance in ritual actions.
- The reason Egyptian statues are motionless is linked to their central role in cultural rituals.
- Stone, wood, and metal statues all display the feature of frontality.
- Statues were more often designed to be viewed in isolation rather than placed within buildings.
- The contrasting poses used in statues of elite and nonelite Egyptians reveal their

Apart from statues representing deities, kings, and named members of the elite that can be called formal, there is another group of three-dimensional representations that depicts generic figures, frequently servants, from the nonelite population. The function of these is quite different. Many are made to be put in the tombs of the elite in order to serve the tomb owners in the afterlife. Unlike formal statues that are limited to static poses of standing, sitting, and kneeling, these figures depict a wide range of actions, such as grinding grain, baking bread, producing pots, and making music, and they are shown in appropriate poses, bending and squatting as they carry out their tasks.

Paragraph 4 □ Apart from statues representing deities, kings, and named members of the elite that can be called formal, there is another group of three-dimensional representations that depicts generic figures, frequently servants, from the nonelite population.
■ The function of these is quite different.
■ Many are made to be put in the tombs of the elite in order to serve the tomb owners in the afterlife. ■ Unlike formal statues that are limited to static poses of standing, sitting, and kneeling, these figures depict a wide range of actions, such as grinding grain, baking bread, producing pots, and making music, and they are shown in appropriate poses, bending and squatting as they carry out their tasks. ■

difference in social status.

- Although the appearances of formal and generic statues differ, they share the same function.

Paragraph 1□

1. Which of the following can be inferred about bird migration from paragraph 1?
 - Birds will take the most direct migratory route to their new habitat.
 - The purpose of migration is to join with larger groups of birds.
 - Bird migration generally involves moving back and forth between north and south.
 - The destination of birds' migration can change from year to year.

2. The word perplexed in the passage is closest in meaning to
 - defeated
 - interested
 - puzzled
 - occupied

Paragraph 3□

3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
 - Experiments revealed that caged starlings displayed a lack of directional sense and restless movements.
 - Experiments revealed that caged starlings were unable to orient themselves in the direction of their normal migratory route.
 - Experiments revealed that the restless movement of caged starlings had no clear direction.
 - Experiments revealed that caged starlings' orientation was accurate unless the weather was overcast.

4. The word preposterous in the passage

Orientation and Navigation

To South Americans, robins are birds that fly north every spring. To North Americans, the robins simply vacation in the south each winter. Furthermore, they fly to very specific places in South America and will often come back to the same trees in North American yards the following spring. The question is not why they would leave the cold of winter so much as how they find their way around. The question perplexed people for years, until, in the 1950s, a German scientist named Gustave Kramer provided some answers and, in the process, raised new questions.

Kramer initiated important new kinds of research regarding how animals orient and navigate. Orientation is simply facing in the right direction; navigation involves finding ones way from point A to point B.

Early in his research, Kramer found that caged migratory birds became very restless at about the time they would normally have begun migration in the wild. Furthermore, he noticed that as they fluttered around in the cage, they often launched themselves in the direction of their normal migratory route. He then set up experiments with caged starlings and found that their orientation was, in fact, in the proper migratory direction except when the sky was overcast, at which times there was no clear direction to

is closest in meaning to

- unbelievable
- inadequate
- limited
- creative

5. According to paragraph 3, why did Kramer use mirrors to change the apparent position of the Sun?

- To test the effect of light on the birds' restlessness
- To test whether birds were using the Sun to navigate
- To simulate the shifting of light the birds would encounter along their regular migratory route
- To cause the birds to migrate at a different time than they would in the wild

6. According to paragraph 3, when do caged starlings become restless?

- When the weather is overcast
- When they are unable to identify their normal migratory route
- When their normal time for migration arrives
- When mirrors are used to change the apparent position of the Sun

Paragraph 4 □

7. Which of the following can be inferred from paragraph 4 about Kramer's reason for filling one food box and leaving the rest empty?

- He believed the birds would eat food from only one box.
- He wanted to see whether the Sun alone controlled the birds' ability to navigate toward the box with food.
- He thought that if all the boxes contained food, this would distract the birds from following their migratory route.
- He needed to test whether the birds preferred having the food at any particular point of the compass.

their restless movements. Kramer surmised, therefore, that they were orienting according to the position of the Sun. To test this idea, he blocked their view of the Sun and used mirrors to change its apparent position. He found that under these circumstances, the birds oriented with respect to the new "Sun." They seemed to be using the Sun as a compass to determine direction. At the time, this idea seemed preposterous. How could a bird navigate by the Sun when some of us lose our way with road maps? Obviously, more testing was in order.

So, in another set of experiments, Kramer put identical food boxes around the cage, with food in only one of the boxes. The boxes were stationary, and the one containing food was always at the same point of the compass. However, its position with respect to the surroundings could be changed by revolving either the inner cage containing the birds or the outer walls, which served as the background. As long as the birds could see the Sun, no matter how their surroundings were altered, they went directly to the correct food box. Whether the box appeared in front of the right wall or the left wall, they showed no signs of confusion. On overcast days, however, the birds were disoriented and had trouble locating their food box.

In experimenting with artificial suns, Kramer made another interesting discovery. If the artificial Sun remained stationary, the birds would shift their direction with respect to it at a rate of about 15 degrees per hour, the Sun's rate of movement across the sky. Apparently, the birds were assuming

Paragraph 5 □

8. According to paragraph 5, how did the birds fly when the real Sun was visible?

- They kept the direction of their flight constant.
- They changed the direction of their flight at a rate of 15 degrees per hour.
- They kept flying toward the Sun.
- They flew in the same direction as the birds that were seeing the artificial Sun

9. The experiment described in paragraph 5 caused Kramer to conclude that birds possess a biological clock because

- when birds navigate they are able to compensate for the changing position of the Sun in the sky
- birds innate bearings keep them oriented in a direction that is within 15 degrees of the Sun's direction
- birds' migration is triggered by natural environmental cues, such as the position of the Sun
- birds shift their direction at a rate of 15 degrees per hour whether the Sun is visible or not

Paragraph 6 □

10. According to paragraph 6, how did the birds navigate in the planetarium's nighttime environment?

- By waiting for the dome to stop rotating
- By their position on the planetarium floor
- By orienting themselves to the stars in the artificial night sky
- By navigating randomly until they found the correct orientation

11. Which of the following best describes the author's presentation of information in the passage?

- A number of experiments are described to

that the "Sun" they saw was moving at that rate. When the real Sun was visible, however, the birds maintained a constant direction as it moved across the sky. In other words, they were able to compensate for the Sun's movement. This meant that some sort of biological clock was operating—and a very precise clock at that.

What about birds that migrate at night? Perhaps they navigate by the night sky. To test the idea, caged night-migrating birds were placed on the floor of a planetarium during their migratory period. A planetarium is essentially a theater with a domelike ceiling onto which a night sky can be projected for any night of the year. When the planetarium sky matched the sky outside, the birds fluttered in the direction of their normal migration. But when the dome was rotated, the birds changed their direction to match the artificial sky. The results clearly indicated that the birds were orienting according to the stars.

There is accumulating evidence indicating that birds navigate by using a wide variety of environmental cues. Other areas under investigation include magnetism, landmarks, coastlines, sonar, and even smells. The studies are complicated by the fact that the data are sometimes contradictory and the mechanisms apparently change from time to time. Furthermore, one sensory ability may back up another.

support the idea that birds use the Sun and the night sky to navigate.

- The author uses logic to show that the biological clock in birds is inaccurate.
- A structured argument about the importance of internal versus external cues for navigation is presented.
- The opposing points of view about bird migration are clarified through the study of contrasting experiments.

Paragraph 7□

12. The word accumulating in the passage is closest in meaning to

- new
- increasing
- convincing
- extensive

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

He arranged the feed boxes at various positions on a compass.

Where would the sentence best fit?

14.

Gustave Kramer conducted important research related to the ability of birds to orient and navigate.

Answer Choices

- Because caged birds become disoriented when the sky is overcast, Kramer hypothesized that birds orient themselves according to the Sun's position.
- In one set of experiments, Kramer placed the box containing food at the same point of the compass each time he put food boxes in the birds' environment.
- Kramer demonstrated that an internal biological clock allows starlings to compensate for the Sun's movement.
- After several studies, Kramer surmised

Paragraph 4□So, in another set of experiments, Kramer put identical food boxes around the cage, with food in only one of the boxes. ■The boxes were stationary, and the one containing food was always at the same point of the compass. ■However, its position with respect to the surroundings could be changed by revolving either the inner cage containing the birds or the outer walls, which served as the background. ■As long as the birds could see the Sun, no matter how their surroundings were altered, they went directly to the correct food box. ■Whether the box appeared in front of the right wall or the left wall, they showed no signs of confusion. On overcast days, however, the birds were disoriented and had trouble locating their food box. In experimenting with artificial suns, Kramer made another interesting discovery. If the artificial Sun remained stationary, the birds would shift their direction with respect to it at a rate of about 15 degrees per hour, the Sun's rate of movement across the sky. Apparently, the birds were assuming that the "Sun" they saw was moving at that rate. When the real Sun was visible, however, the birds maintained a constant direction as it moved across the sky. In other words, they were able to compensate for the Sun's movement. This meant that some sort of biological clock was operating—and a very precise clock at that.

that an internal biological clock allows some species of birds to navigate at night

○ The role of environmental cues in birds' navigation is clear, for on overcast days, birds use objects besides the Sun to orient themselves.

○ Kramer showed that night-migrating birds use the sky to navigate by the stars.

一想到新托福，就想到咱老无。

<http://www.ibtsat.com>

Paragraph 1 □

1. The phrase impose on in the passage is closest in meaning to

- increase for
- remove from
- place on
- distribute to

2. According to paragraph 1, the experiment with tapes of begging tree swallows establishes which of the following?

- Begging by nestling birds can attract the attention of predators to the nest.
- Nest predators attack nests that contain nestlings more frequently than they attack nests that contain only eggs
- Tapes of begging nestlings attract predators to the nest less frequently than real begging calls do.
- Nest predators have no other means of locating bird nests except the begging calls of nestling birds.

Paragraph 2 □

3. The word artificial in the passage is closest in meaning to

- attractive
- not real
- short-term
- well designed

4. Paragraph 2 indicates that the begging

Begging by Nestlings

Many signals that animals make seem to impose on the signalers costs that are overly damaging. A classic example is noisy begging by nestling songbirds when a parent returns to the nest with food. These loud cheeps and peeps might give the location of the nest away to a listening hawk or raccoon, resulting in the death of the defenseless nestlings. In fact, when tapes of begging tree swallows were played at an artificial swallow nest containing an egg, the egg in that "noisy" nest was taken or destroyed by predators before the egg in a nearby quiet nest in 29 of 37 trials.

Further evidence for the costs of begging comes from a study of differences in the begging calls of warbler species that nest on the ground versus those that nest in the relative safety of trees. The young of ground-nesting warblers produce begging cheeps of higher frequencies than do their tree-nesting relatives. These higher-frequency sounds do not travel as far, and so may better conceal the individuals producing them, who are especially vulnerable to predators in their ground nests. David Haskell created

calls of tree nesting warblers

- put them at more risk than ground-nesting warblers experience
- can be heard from a greater distance than those of ground-nesting warblers
- are more likely to conceal the signaler than those of ground-nesting warblers
- have higher frequencies than those of ground nesting warblers

5. The experiment described in paragraph 2 supports which of the following conclusions?

- Predators are unable to distinguish between the begging cheeps of ground-nesting and those of tree-nesting warblers except by the differing frequencies of the calls.
- When they can find them, predators prefer the eggs of tree-nesting warblers to those of ground-nesting warblers.
- The higher frequencies of the begging cheeps of ground-nesting warblers are an adaptation to the threat that ground-nesting birds face from predators
- The danger of begging depends more on the frequency of the begging cheep than on how loud it is.

Paragraph 3 □

6. The word prediction in the passage is closest in meaning to

- surprise
- discovery
- explanation
- expectation

7. The word pinpoint in the passage is closest in meaning to

- observe
- locate exactly
- copy accurately
- recognize

Paragraph 4 □

8. The word derive in the passage is

artificial nests with clay eggs and placed them on the ground beside a tape recorder that played the begging calls of either tree-nesting or of ground-nesting warblers. The eggs “advertised” by the tree-nesters’ begging calls were found bitten significantly more often than the eggs associated with the ground-nesters’ calls.

The hypothesis that begging calls have evolved properties that reduce their potential for attracting predators yields a prediction: baby birds of species that experience high rates of nest predation should produce softer begging signals of higher frequency than nestlings of other species less often victimized by nest predators. This prediction was supported by data collected in one survey of 24 species from an Arizona forest, more evidence that predator pressure favors the evolution of begging calls that are hard to detect and pinpoint.

Given that predators can make it costly to beg for food, what benefit do begging nestlings derive from their communications? One possibility is that a noisy baby bird provides accurate signals of its real hunger and good health, making it worthwhile for the listening parent to give it food in a nest where several other offspring are usually available to be fed. If this hypothesis is true, then it follows that nestlings should adjust the intensity of their signals in relation to the signals produced by their nestmates, who are competing for parental attention. When experimentally deprived baby robins are placed in a nest with normally fed siblings, the hungry nestlings beg more

closest in meaning to

- require
- gain
- use
- produce

Paragraph 4 □

Paragraph 5 □

9. In paragraphs 4 and 5, what evidence supports the claim that the intensity of nestling begging calls is a good indicator of which offspring in a nest would most benefit from a feeding?

- When placed in a nest with hungry robins, wellfed robins did not beg for food.
- Among robin nestlings, the intensity of begging decreased the more the nestlings were fed.
- Hungry tree swallow nestlings begged louder than well-fed nestlings in the same nest.
- Hungry tree swallow nestlings continued to beg loudly until they were fed whereas well-fed nestlings soon stopped begging.

10. It can be inferred from paragraphs 4 and 5 that parent songbirds normally do not feed

- nestlings that are too weak to beg for food as vigorously as their nestmates
- more than one hungry nestling during a single visit to the nest
- offspring that were fed by the parents on the previous visit to the nest
- nestlings that have been removed and then later put back into their nest

Paragraph 6 □

11. In paragraph 6, the author compares the energy costs of vigorous begging with the potential gain in calories from such begging in order to

- explain why begging for food vigorously can lead to faster growth and increased size.
- explain how begging vigorously can increase an individual's chance of propagating

loudly than usual—but so do their better-fed siblings, though not as loudly as the hungrier birds.

If parent birds use begging intensity to direct food to healthy offspring capable of vigorous begging, then parents should make food delivery decisions on the basis of their offsprings calls. Indeed, if you take baby tree swallows out of a nest for an hour feeding half the set and starving the other half, when the birds are replaced in the nest, the starved youngsters beg more loudly than the fed birds, and the parent birds feed the active beggars more than those who beg less vigorously.

As these experiments show, begging apparently provides a signal of need that parents use to make judgments about which offspring can benefit most from a feeding. But the question arises, why don't nestlings beg loudly when they aren't all that hungry? By doing so, they could possibly secure more food, which should result in more rapid growth or larger size, either of which is advantageous. The answer lies apparently not in the increased energy costs of exaggerated begging—such energy costs are small relative to the potential gain in calories—but rather in the damage that any successful cheater would do to its siblings, which share genes with one another. An individual's success in propagating his or her genes can be affected by more than just his or her own personal reproductive success. Because close relatives have many of the same genes, animals that harm their close relatives may in effect be destroying some of their own genes. Therefore, a begging nestling that secures food at the expense of its siblings might

its own genes

- point out a weakness in a possible explanation for why nestlings do not always beg vigorously
- argue that the benefits of vigorous begging outweigh any possible disadvantages

12. According to paragraph 6, which of the following explains the fact that a well-fed nestling does not beg loudly for more food?

- There is no benefit for a nestling to get more food than it needs to survive.
- By begging loudly for food it does not need, a nestling would unnecessarily expose itself to danger from predators.
- If a nestling begs loudly when it is not truly hungry, then when it is truly hungry its own begging may be drowned out by that of its well-fed siblings.
- More of a nestling's genes will be passed to the next generation if its hungry siblings get enough food to survive.

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

The cheeping provides important information to the parent, but it could also attract the attention of others.

Where would the sentence best fit?

14.

Experiments have shed much light on the begging behaviors of baby songbirds

Answer Choices

- Songbird species that are especially vulnerable to predators have evolved ways of reducing the dangers associated with begging calls.
- Songbird parents focus their feeding effort on the nestlings that beg loudest for food.
- It is genetically disadvantageous for nestlings to behave as if they are really hungry when they are not really hungry.

actually leave behind fewer copies of its genes overall than it might otherwise.

Paragraph 1 □ Many signals that animals make seem to impose on the signalers costs that are overly damaging.

■ A classic example is noisy begging by nestling songbirds when a parent returns to the nest with food. ■ These loud cheeps and peeps might give the location of the nest away to a listening hawk or raccoon, resulting in the death of the defenseless nestlings. ■ In fact, when tapes of begging tree swallows were played at an artificial swallow nest containing an egg, the egg in that "noisy" nest was taken or destroyed by predators before the egg in a nearby quiet nest in 29 of 37 trials. ■

○ The begging calls of songbird nestlings provide a good example of overly damaging cost to signalers of signaling.

○ The success with which songbird nestlings communicate their hunger to their parents is dependent on the frequencies of the nestlings' begging calls.

○ Songbird nestlings have evolved several different ways to communicate the intensity of their hunger to their parents.

~~~~~  
~~~~~

TPO 12

Paragraph 1 □

1. The phrase assisted in in the passage is closest in meaning to

- initiated
- dominated
- helped with
- setup

2. It can be inferred from paragraph 1 that even when paint was sprayed by mouth to make a hand stencil

- there was no way to tell which hand was stenciled
- the stenciled hand was the weaker hand
- the stenciled hand was the dominant hand
- artists stenciled more images of the dominant hand than they did of the weak

Paragraph 2 □

3. The phrase depicted in the passage is closest in meaning to

- identified
- revealed
- pictured
- imagined

4. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect

Which Hand Did They Use?

We all know that many more people today are right-handed than left-handed. Can one trace this same pattern far back in prehistory? ■ Much of the evidence about right-hand versus left-hand dominance comes from stencils and prints found in rock shelters in Australia and elsewhere, and in many Ice Age caves in France, Spain, and Tasmania. ■ When a left hand has been stenciled, this implies that the artist was right-handed, and vice versa. ■ Even though the paint was often sprayed on by mouth, one can assume that the dominant hand assisted in the operation. One also has to make the assumption that hands were stenciled palm downward—a left hand stenciled palm upward might of course look as if it were a right hand. ■ Of 158 stencils in the French cave of Gargas, 136 have been identified as left, and only 22 as right; right-handedness was therefore heavily predominant.

Cave art furnishes other types of evidence of this phenomenon. Most engravings, for example, are best lit from

choices change the meaning in important ways or leave out essential information.

○ Right-handed artists could more easily have avoided casting shadows on their work, because engravings in prehistoric caves were lit from the left.

○ The tips of engraving tools and brushes indicate that these instruments were used by right-handed artists whose work was lit from the left.

○ The best lighting for most engravings suggests that they were made by right-handed people trying to avoid the shadow of their hands interfering with their work.

○ Right-handed artists try to avoid having the brush they are using interfere with the light source.

Paragraph 1 □

Paragraph 2 □

5. All of the following are mentioned in paragraphs 1 and 2 as evidence of right-handedness in art and artists EXCEPT

- the ideal source of lighting for most engravings
- the fact that a left hand stenciled palm upward might look like a right hand
- the prevalence of outlines of left hands
- figures in prehistoric art holding objects with the right hand

Paragraph 3 □

6. According to paragraph 3, the La Chapelle-aux-Saints Neanderthal skeleton can be identified as right-handed because

- other Neanderthal skeletons found nearby are also right-handed
- the right arm bone is stronger than the left
- it is similar to skeletons of La Ferrassie I and Neanderthal
- the right side of the skeleton shows less evidence of fractures

Paragraph 4 □

the left, as befits the work of right-handed artists, who generally prefer to have the light source on the left so that the shadow of their hand does not fall on the tip of the engraving tool or brush. In the few cases where an Ice Age figure is depicted holding something, it is mostly, though not always, in the right hand.

Clues to right-handedness can also be found by other methods. Right-handers tend to have longer, stronger, and more muscular bones on the right side, and Marcellin Boule as long ago as 1911 noted the La Chapel le-aux-Saints Neanderthal skeleton had a right upper arm bone that was noticeably stronger than the left. Similar observations have been made on other Neanderthal skeletons such as La Ferrassie I and Neanderthal itself.

Fractures and other cut marks are another source of evidence. Right-handed soldiers tend to be wounded on the left. The skeleton of a 40- or 50-year-old Nabatean warrior, buried 2,000 years ago in the Negev Desert, Israel, had multiple healed fractures to the skull, the left arm, and the ribs.

Tools themselves can be revealing. Long-handed Neolithic spoons of yew wood preserved in Alpine villages dating to 3000 B.C. have survived; the signs of rubbing on their left side indicate that their users were right-handed. The late Ice Age rope found in the French cave of Lascaux consists of fibers spiraling to the right, and was therefore tressed by a righthander.

Occasionally one can determine

7. Which of the following statements about fractures and cut marks can be inferred from paragraph 4?

- Fractures and cut marks caused by right-handed soldiers tend to occur on the right side of the injured party's body.
- The right arm sustains more injuries because, as the dominant arm, it is used more actively.
- In most people, the left side of the body is more vulnerable to injury since it is not defended effectively by the dominant arm.
- Fractures and cut marks on fossil humans probably occurred after death.

Paragraph 5 □

8. According to paragraph 5, what characteristic of a Neolithic spoon would imply that the spoon's owner was right-handed?

- The direction of the fibers
- Its long handle
- The yew wood it is carved from
- Wear on its left side

9. In paragraph 5, why does the author mention the Ice Age rope found in the French cave of Lascaux?

- As an example of an item on which the marks of wear imply that it was used by a right-handed person
- Because tressing is an activity that is easier for a right-handed person than for a left-handed person
- Because the cave of Lascaux is the site where researchers have found several prehistoric tools made for right-handed people
- As an example of an item whose construction shows that it was right handed made by a right-person

Paragraph 6 □

10. The word criteria in the passage is closest in meaning to

- standards

whether stone tools were used in the right hand or the left, and it is even possible to assess how far back this feature can be traced. In stone toolmaking experiments, Nick Toth, a right-hander, held the core (the stone that would become the tool) in his left hand and the hammer stone in his right. As the tool was made, the core was rotated clockwise, and the flakes, removed in sequence, had a little crescent of cortex (the core's outer surface) on the side. Toth's knapping produced 56 percent flakes with the cortex on the right, and 44 percent left-oriented flakes. A left-handed toolmaker would produce the opposite pattern Toth has applied these criteria to the similarly made pebble tools from a number of early sites (before 1.5 million years) at Koobi Fora, Kenya, probably made by Homo habilis. At seven sites he found that 57 percent of the flakes were right-oriented, and 43 percent left, a pattern almost identical to that produced today.

About 90 percent of modern humans are right-handed: we are the only mammal with a preferential use of one hand. The part of the brain responsible for fine control and movement is located in the left cerebral hemisphere, and the findings above suggest that the human brain was already asymmetrical in its structure and function not long after 2 million years ago. Among Neanderthalers of 70,000 – 35,000 years ago, Marcellin Boule noted that the La Chapelle-aux-Saints individual had a left hemisphere slightly bigger than the right, and the same was found for brains of specimens from Neanderthal, Gibraltar, and La Quina.

- findings
- ideas
- techniques

11. What was the purpose of Toth's tool making experiment described in paragraph 6?

- To shape tools that could be used by either hand
- To produce replicas of early tools for display in museums
- To imitate the production of pebble tools from early sites
- To determine which hand made the early tools

Paragraph 7 □

12. What is the author's primary purpose in paragraph 7?

- To illustrate the importance of studying the brain
- To demonstrate that human beings are the only mammal to desire fine control of movement
- To contrast the functions of the two hemispheres of the brain
- To demonstrate that right-hand preference has existed for a long time

Paragraph 1 □

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

The stencils of hands found in these shelters and caves allow us to draw conclusions about which hand was dominant.

Where would the sentence best fit?

14.

Several categories of evidence indicate that people have always been predominantly right-handed

Answer Choices

- Stencils of right-handed figures are characteristic of cave art in France, Spain, and

We all know that many more people today are right-handed than left-handed. Can one trace this same pattern far back in prehistory? ■ Much of the evidence about right-hand versus left-hand dominance comes from stencils and prints found in rock shelters in Australia and elsewhere, and in many Ice Age caves in France, Spain, and Tasmania. ■ When a left hand has been stenciled, this implies that the artist was right-handed, and vice versa. ■ Even though the paint was often sprayed on by mouth, one can assume that the dominant hand assisted in the operation. One also has to make the assumption that hands were stenciled palm downward—a left hand stenciled palm upward might of course look as if it were a right hand. ■ Of 158 stencils in the French cave of Gargas, 136 have

Tasmania.

- Signs on the skeletal remains of prehistoric figures, including arm-bone size and injury marks, imply that these are the remains of right-handed people.
- Instruments such as spoons, ropes, and pebble tools show signs that indicate they were used or constructed by right-handed people.
- The amount of prehistoric art created by right-handed artists indicates that left-handed people were in the minority.
- Neanderthal skeletons often have longer finger bones in the right hand, which is evidence that the right hand was stronger.
- Nick Toth, a modern right-handed toolmaker, has shown that prehistoric tools were knapped to fit the right hand

been identified as left, and only 22 as right; right-handedness was therefore heavily predominant.

Paragraph 1 □

1. The word regarded in the passage is closest in meaning to

- analyzed
- considered
- altered
- criticized

2. According to paragraph 1, which of the following is the most significant development in the history of film?

- The technological innovation of sound film during the 1920s
- The development of a technology for translating films into other languages
- To argue that dams should not be built on the Euphrates River
- The technological improvements allowing clearer images in films

Paragraph 2 □

3. The word paradoxes in the passage is closest in meaning to

- difficulties
- accomplishments
- parallels

Transition to Sound in Film

The shift from silent to sound film at the end of the 1920s marks, so far, the most important transformation in motion picture history. Despite all the highly visible technological developments in theatrical and home delivery of the moving image that have occurred over the decades since then, no single innovation has come close to being regarded as a similar kind of watershed. In nearly every language, however the words are phrased, the most basic division in cinema history lies between films that are mute and films that speak.

Yet this most fundamental standard of historical periodization conceals a host of paradoxes. Nearly every movie theater, however modest, had a piano or organ to provide musical accompaniment to silent pictures. In many instances, spectators in the era before recorded sound experienced elaborate aural presentations alongside movies' visual images, from

- contradictions
4. Why does the author mention Japanese benshi and original musical compositions?
- To suggest that audiences preferred other forms of entertainment to film before the transition to sound in the 1920's
 - To provide examples of some of the first sounds that were recorded for film.
 - To indicate some ways in which sound accompanied film before the innovation of sound films in the late 1920s
 - To show how the use of sound in films changed during different historical periods

5. Paragraph 2 suggests which of the following about Eisenstein's film The Battleship Potemkin?

- The film was not accompanied by sound before its Berlin screening.
- The film was unpopular in the Soviet Union before it was screened in Berlin.
- Eisenstein's film was the first instance of collaboration between a director and a composer.
- Eisenstein believed that the musical score in a film was as important as dialogue.

Paragraph 3 □

6. The word overshadowed in the passage is closest in meaning to

- distracted from
 - explained
 - conducted
 - coordinated with
7. According to paragraph 3, which of the following is NOT true of the technological and aesthetic experiments of the 1920's?
- Because the costs of introducing recorded sound were low, it was the only innovation that was put to use in the 1920's.
 - The introduction of recorded sound prevented the development of other

the Japanese benshi (narrators) crafting multivoiced dialogue narratives to original musical compositions performed by symphony-size orchestras in Europe and the United States. In Berlin, for the premiere performance outside the Soviet Union of The Battleship Potemkin, film director Sergei Eisenstein worked with Austrian composer Edmund Meisel (1874-1930) on a musical score matching sound to image; the Berlin screenings with live music helped to bring the film its wide international fame.

Beyond that, the triumph of recorded sound has overshadowed the rich diversity of technological and aesthetic experiments with the visual image that were going forward simultaneously in the 1920s. New color processes, larger or differently shaped screen sizes, multiple-screen projections, even television, were among the developments invented or tried out during the period, sometimes with startling success. The high costs of converting to sound and the early limitations of sound technology were among the factors that suppressed innovations or retarded advancement in these other areas. The introduction of new screen formats was put off for a quarter century, and color, though utilized over the next two decades for special productions, also did not become a norm until the 1950s.

Though it may be difficult to imagine from a later perspective, a strain of critical opinion in the 1920's predicted that sound film would be a technical novelty that would soon fade from sight, just as had many previous attempts, dating well back before the First World War, to link

technological innovations in the 1920's

- The new technological and aesthetic developments of the 1920s included the use of color, new screen formats, and television.
- Many of the innovations developed in the 1920s were not widely introduced until as late as the 1950's.

Paragraph 4 □

8. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- It was difficult for some critics in the 1920s to imagine why the idea of sound film had faded from sight well before the First World War.
- As surprising as it seems today, some critics in the 1920s believed that the new attempts at sound films would fade just as quickly as the attempts made before the First World War.
- Though some early critics thought that sound film would fade, its popularity during the First World War proved that it was not simply a technical novelty.
- Although some critics predicted well before the First World War that sound film would be an important technical innovation, it was not attempted until the 1920s.

9. The word **neglected** in the passage is closest in meaning to

- failed
- needed
- started
- expected

10. According to paragraph 4, which of the following is true about the technical problems of early sound films?

- Linking images with recorded sound was a

images with recorded sound. These critics were making a common assumption—that the technological inadequacies of earlier efforts (poor synchronization, weak sound amplification, fragile sound recordings) would invariably occur again. To be sure, their evaluation of the technical flaws in 1920's sound experiments was not so far off the mark, yet they **neglected** to take into account important new forces in the motion picture field that, in a sense, would not take no for an answer.

These forces were the rapidly expanding electronics and telecommunications companies that were developing and linking telephone and wireless technologies in the 1920s. In the United States, they included such firms as American Telephone and Telegraph, General Electric, and Westinghouse. They were interested in all forms of sound technology and all potential avenues for commercial exploitation.

Their competition and collaboration were creating the broadcasting industry in the United States, beginning with the introduction of commercial radio programming in the early 1920s. ■ With financial assets considerably greater than those in the motion picture industry, and perhaps a wider vision of the relationships among entertainment and communications media, they revitalized research into recording sound for motion pictures. ■ In 1929 the United States motion picture industry released more than 300 sound films—a rough figure, since a number were silent films with music tracks, or films prepared in dual versions, to take account of the many cinemas not yet wired for sound. ■ At the

larger obstacle than weak sound amplification or fragile sound recordings

○ Sound films in the 1920s were unable to solve the technical flaws found in sound films before the First World War.

○ Technical inadequacies occurred less frequently in early sound films than critics suggested

○ Critics assumed that it would be impossible to overcome the technical difficulties experienced with earlier sound films.

production level, in the United States the conversion was virtually complete by 1930. ■In Europe it took a little longer, mainly because there were more small producers for whom the costs of sound were prohibitive, and in other parts of the world problems with rights or access to equipment delayed the shift to sound production for a few more years (though cinemas in major cities may have been wired in order to play foreign sound films). The triumph of sound cinema was swift, complete, and enormously popular.

Paragraph 5:

11. In paragraph 5, commercial radio programming is best described as the result of

○ a financially successful development that enabled large telecommunications firms to weaken their competition.

○ the desire of electronics and telecommunications companies to make sound technology profitable.

○ a major development in the broadcasting industry that occurred before the 1920s.

○ the cooperation between telecommunications companies and the motion picture industry

Paragraph 6:

12. According to paragraph 6, which of the following accounts for the delay in the conversion to sound films in Europe?

○ European producers often lacked knowledge about the necessary equipment for the transition to sound films.

○ Smaller European producers were often unable to afford to add sound to their films.

○ It was often difficult to wire older cinemas in the major cities to play sound films.

○ Smaller European producers believed that silent films with music accompaniment were aesthetically superior to sound films.

Paragraph 6:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

When this research resulted in the development of vastly improved sound techniques, film studios became convinced of the importance of converting to sound.

Where would the sentence best fit?

14.

The transition from silent to sound films was the most important development in film history.

Answer Choices

- Although music and speech had frequently accompanied film presentations before the 1920s, there was a strong desire to add sound to the films themselves.
- Because of intense interest in developing and introducing sound in film, the general use of other technological innovations being developed in the 1920s was delayed.
- The rapid progress in sound technology made possible by the involvement of telecommunications companies transformed the motion picture industry.
- Japanese filmmakers had developed the technology for creating sound films before directors in Europe and the United States began experimenting with sound
- Before the First World War, Film directors showed little interest in linking images with recorded sound
- The arrival of sound film technology in the United States forced smaller producers in the motion picture industry out of business.

Paragraph 1 □

1. Which of the following statements about annual rainfall can be inferred from paragraph 1?

- Flat desert areas receive more annual rainfall than desert areas with mountains
- Areas that receive more than four inches of rain per year are not considered deserts.

Water in the Desert

Rainfall is not completely absent in desert areas, but it is highly variable. An annual rainfall of four inches is often used to define the limits of a desert. The impact of rainfall upon the surface water and groundwater resources of the desert is greatly

- Many areas receive less than four inches of annual rainfall, but only a few are deserts
- Annual rainfall has no impact on the groundwater resources of desert areas.

Paragraph 2 □

2. The word **drastically** in the passage is closest in meaning to

- obviously
- unfortunately
- rapidly
- severely

3. In paragraph 2. Why does the author mention the Ataturk and other dams in Turkey?

- To contrast the Euphrates River with other exogenous rivers
- To illustrate the technological advances in dam building
- To argue that dams should not be built on the Euphrates River
- To support the idea that international river-basin agreements are needed

4. According to paragraph 2. Which of the following is true of the Nile River?

- The Nile's flow in its desert sections is at its lowest during the dry season
- The Nile's sources are located in one of the most arid zones of the world
- The Nile's annual floods bring fertile silts and water to its lower valley
- The Nile's periodic flooding hinders the growth of some crops

Paragraph 5 □

5. The word **dwellers** in the passage is closest in meaning to

- settlements
- farmers
- tribes
- inhabitants

6. Paragraph 5 supports all of the

influenced by landforms. Flats and depressions where water can collect are common features, but they make up only a small part of the landscape.

Arid lands, surprisingly, contain some of the world's largest river systems, such as the Murray-Darling in Australia, the Rio Grande in North America, the Indus in Asia, and the Nile in Africa. These rivers and river systems are known as "exogenous" because their sources lie outside the arid zone. They are vital for sustaining life in some of the driest parts of the world. For centuries, the annual floods of the Nile, Tigris, and Euphrates, for example, have brought fertile silts and water to the inhabitants of their lower valleys. Today, river discharges are increasingly controlled by human intervention, creating a need for international river-basin agreements. The filling of the Ataturk and other dams in Turkey has **drastically** reduced flows in the Euphrates, with potentially serious consequences for Syria and Iraq.

The flow of exogenous rivers varies with the season. The desert sections of long rivers respond several months after rain has fallen outside the desert, so that peak flows may be in the dry season. This is useful for irrigation, but the high temperatures, low humidity, and different day lengths of the dry season, compared to the normal growing season, can present difficulties with some crops.

Regularly flowing rivers and streams that originate within arid lands are known as "endogenous." These are generally fed by groundwater springs, and many issue from limestone massifs,

following statements about the groundwater In deserts EXCEPT:

- The groundwater is consistently found just below the surface
- A small part of the groundwater helps maintain lake levels
- Most of the groundwater is not recharged through surface water
- The groundwater is increasingly used as a source of freshwater

Paragraph 6:

7. The word fractures in the passage is closest in meaning to

- streams
- cracks
- storms
- earthquakes

8. According to paragraph 6. Which of the following statements about aquifers in deserts is true?

- Water from limestone and sandstone aquifers is generally better to drink than water from sand and gravel aquifers
- Sand and gravel aquifers tend to contain less groundwater than limestone or sandstone aquifers
- Groundwater in deep aquifers is more likely to be recharged than groundwater in shallow aquifers
- Sedimentary rocks, because they are porous, are not capable of storing large amounts of groundwater

9. According to paragraph 6. the aquifers called fossil" waters

- contain fossils that are thousands of years old
- took more than 10.000 years to become saturated with water
- have not gained or lost any water for thousands of years
- have been collecting water for the past

such as the Atlas Mountains in Morocco. Basaltic rocks also support springs, notably at the Jabal Al-Arab on the Jordan-Syria border. ■Endogenous Rivers often do not reach the sea but drain into inland basins, where the water evaporates or is lost in the ground. ■Most desert streambeds are normally dry, but they occasionally receive large flows of water and sediment.■

Deserts contain large amounts of groundwater when compared to the amounts they hold in surface stores such as lakes and rivers. ■But only a small fraction of groundwater enters the hydrological cycle-feeding the flows of streams, maintaining lake levels, and being recharged (or refilled) through surface flows and rainwater. In recent years, groundwater has become an increasingly important source of freshwater for desert dwellers. The United Nations Environment Program me and the World Bank have funded attempts to survey the groundwater resources of arid lands and to develop appropriate extraction techniques. Such programs are much needed because in many arid lands there is only a vague idea of the extent of groundwater resources. It is known, however, that the distribution of groundwater is uneven, and that much of it lies at great depths.

Groundwater is stored in the pore spaces and joints of rocks and unconsolidated (unsolidified) sediments or in the openings widened through fractures and weathering. The water-saturated rock or sediment is known as an "aquifer". Because they are porous, sedimentary rocks, such

10,000 years

Paragraph 7:

10. The word immobile in the passage is closest in meaning to

- enclosed
- permanent
- motionless
- intact

11. The passage supports which of the following statements about water in the desert?

- The most visible forms of water are not the most widespread forms of water in the desert.
- Groundwater in the desert cannot become a source of drinking water but can be used for irrigation.
- Most of the water in the desert is contained in shallow aquifers that are being rapidly recharged.
- Desert areas that lack endogenous or exogenous rivers and streams cannot support life.

Paragraph 4 □

Paragraph 5 □

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage

These sudden floods provide important water supplies but can also be highly destructive.

Where would the sentence best fit?

13.

Endogenous Rivers

-

-

Exogenous Rivers

-

-

-

Answer Choices

- Their water generally comes from

as sandstones and conglomerates, are important potential sources of groundwater. Large quantities of water may also be stored in lime stones when joints and cracks have been enlarged to form cavities. Most limestone and sandstone aquifers are deep and extensive but may contain ground waters that are not being recharged. Most shallow aquifers in sand and gravel deposits produce lower yields, but they can be rapidly recharged. Some deep aquifers are known as "fossil waters. The term "fossil" describes water that has been present for several thousand years. These aquifers became saturated more than 10,000 years ago and are no longer being recharged.

Water does not remain immobile in an aquifer but can seep out at springs or leak into other aquifers. The rate of movement may be very slow: in the Indus plain, the movement of saline (salty) ground waters has still not reached equilibrium after 70 years of being tapped. The mineral content of groundwater normally increases with the depth, but even quite shallow aquifers can be highly saline.

groundwater springs.

- Their water is saltier than the water of most other rivers.
 - They include some of the world's largest rivers.
 - They originate outside the desert.
 - They often drain into inland basins and do not reach the sea.
 - They contain too much silt to be useful for irrigation
 - Their water flow generally varies with the season of the year.
-
-

TPO 13

Paragraph 1 □

1. The word complex in the passage is closest in meaning to

- delicate
- elaborate
- private
- common

2. According to paragraph 1, which of the following is true of a relationship?

- It is a structure of associations with many people.
- It should be studied in the course of a social interaction.
- It places great demands on people.
- It develops gradually overtime.

Paragraph 2 □

3. The word endowing in the passage is closest in meaning to

- leaving
- exposing
- providing
- understanding

4. Which of the following can be inferred about instrumental ties from the author's mention

Types of Social Groups

Life places us in a complex web of relationships with other people. Our humanness arises out of these relationships in the course of social interaction. Moreover, our humanness must be sustained through social interaction—and fairly constantly so. When an association continues long enough for two people to become linked together by a relatively stable set of expectations, it is called a relationship.

People are bound within relationships by two types of bonds: expressive ties and instrumental ties. Expressive ties are social links formed when we emotionally invest ourselves in and commit ourselves to other people. Through association with people who are meaningful to us, we achieve a sense of security, love, acceptance, companionship, and personal worth. Instrumental ties are social links formed when we cooperate with other people to achieve some goal. Occasionally, this

of working with competitors in paragraph 2?

- Instrumental ties can develop even in situations in which people would normally not cooperate.
- Instrumental ties require as much emotional investment as expressive ties.
- Instrumental ties involve security, love, and acceptance.
- Instrumental ties should be expected to be significant.

Paragraph 3 □

5. According to paragraph 3, what do sociologists see as the main difference between primary and secondary groups?

- Primary groups consist of people working together, while secondary groups exist outside of work settings.
- In primary groups people are seen as means, while in secondary groups people are seen as ends.
- Primary groups involve personal relationships, while secondary groups are mainly practical in purpose.
- Primary groups are generally small, while secondary groups often contain more than two people.

6. Which of the following can be inferred from the author's claim in paragraph 3 that primary group relationships sometimes evolve out of secondary group relationships?

- Secondary group relationships begin by being primary group relationships.
- A secondary group relationship that is highly visible quickly becomes a primary group relationship.
- Sociologists believe that only primary group relationships are important to society.
- Even in secondary groups, frequent communication serves to bring people into close relationships.

may mean working with instead of against competitors. More often, we simply cooperate with others to reach some end without endowing the relationship with any larger significance.

Sociologists have built on the distinction between expressive and instrumental ties to distinguish between two types of groups: primary and secondary. A primary group involves two or more people who enjoy a direct, intimate, cohesive relationship with one another. Expressive ties predominate in primary groups; we view the people as ends in themselves and valuable in their own right. A secondary group entails two or more people who are involved in an impersonal relationship and have come together for a specific, practical purpose. Instrumental ties predominate in secondary groups; we perceive people as means to ends rather than as ends in their own right. Sometimes primary group relationships evolve out of secondary group relationships. This happens in many work settings. People on the job often develop close relationships with coworkers as they come to share gripes, jokes, gossip, and satisfactions.

A number of conditions enhance the likelihood that primary groups will arise. First, group size is important. We find it difficult to get to know people personally when they are milling about and dispersed in large groups. In small groups we have a better chance to initiate contact and establish rapport with them. Second, face-to-face contact allows us to size up others. Seeing and talking with one another in close physical proximity makes possible a

Paragraph 4 □

7. The phrase size up in the passage is closest in meaning to

- enlarge
- evaluate
- impress
- accept

Paragraph 5 □

8. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Sociologists think that cultural patterns establish connections between the individual and the larger society.
- Sociologists believe that individuals with a sense of oneness bridge the gap between society and primary groups.
- Sociologists think primary groups contribute to social solidarity because they help maintain a society's cultural patterns.
- Sociologists believe that the cultural patterns that provide social solidarity arise as bridges from primary groups.

9. This passage is developed primarily by

- drawing comparisons between theory and practice

- presenting two opposing theories
- defining important concepts and providing examples of them
- discussing causes and their effects

Paragraph 7 □

10. The word deviate in the passage is closest in meaning to

- detract
- advance
- select
- depart

subtle exchange of ideas and feelings. And third, the probability that we will develop primary group bonds increases as we have frequent and continuous contact. Our ties with people often deepen as we interact with them across time and gradually evolve interlocking habits and interests.

Primary groups are fundamental to us and to society. First, primary groups are critical to the socialization process. Within them, infants and children are introduced to the ways of their society. Such groups are the breeding grounds in which we acquire the norms and values that equip us for social life. Sociologists view primary groups as bridges between individuals and the larger society because they transmit, mediate, and interpret a society's cultural patterns and provide the sense of oneness so critical for social solidarity.

Second, primary groups are fundamental because they provide the settings in which we meet most of our personal needs. ■ Within them, we experience companionship, love, security, and an overall sense of well-being. ■ Not surprisingly, sociologists find that the strength of a group's primary ties has implications for the group's functioning. ■ For example, the stronger the primary group ties of a sports team playing together, the better their record is. ■

Third, primary groups are fundamental because they serve as powerful instruments for social control. Their members command and dispense many of the rewards that are so vital to us and that make our lives seem worthwhile. Should the use of rewards fail, members

11. According to paragraph 7, why would a social group use shunning?

- To enforce practice of the kinds of behavior acceptable to the group
- To discourage offending individuals from remaining in the group
- To command and reward the behavior of the other members of the group
- To decide which behavioral norms should be passed on to the next generation?

Paragraph 6 □

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

People who do not live alone, for example, tend to make healthier life choices and develop fewer pathologies than people who live by themselves.

Where would the sentence best fit?

13.

Primary Groups

-
-
-

Secondary Groups

-
-

Answer Choices

- Developing socially acceptable behavior
- Working together against competitors
- Experiencing pressure from outside forces
- Viewing people as a means to an end
- Existing for practical purposes
- Providing meaning for life situations
- Involving close relationships

Paragraph 1 □

1. The word Consequently in the passage is closest in meaning to

- Therefore

can frequently win by rejecting or threatening to ostracize those who deviate from the primary group's norms. For instance, some social groups employ shunning (a person can remain in the community, but others are forbidden to interact with the person) as a device to bring into line individuals whose behavior goes beyond that allowed by the particular group. Even more important, primary groups define social reality for us by structuring our experiences. By providing us with definitions of situations, they elicit from us behavior that conforms to group-devised meanings. Primary groups, then, serve both as carriers of social norms and as enforcers of them.

Biological Clocks

Survival and successful reproduction usually require the activities of animals to be coordinated

- Additionally
- Nevertheless
- Moreover

2. In paragraph 1, the experiment on the fungus Neurospora is mentioned to illustrate
- the existence of weekly periods of activity as well as daily ones
 - the finding of evidence that organisms have internal clocks
 - the effect of space on the internal clocks of organisms
 - the isolation of one part of an organism's cycle for study

3. According to paragraph 1, all the following are generally assumed to be true EXCEPT:

- It is important for animals' daily activities to be coordinated with recurring events in their environment.
- Eukaryotes have internal clocks.
- The relationship between biological function and environmental cycles is a topic of intense research.
- Animals' daily rhythms are more dependent on external cues than on internal clocks.

Paragraph 2 □

4. The word persistent in the passage is closest in meaning to
- adjusted
 - strong
 - enduring
 - predicted

5. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

with predictable events around them. Consequently, the timing and rhythms of biological functions must closely match periodic events like the solar day, the tides, the lunar cycle, and the seasons. The relations between animal activity and these periods, particularly for the daily rhythms, have been of such interest and importance that a huge amount of work has been done on them and the special research field of chronobiology has emerged. Normally, the constantly changing levels of an animal's activity—sleeping, feeding, moving, reproducing, metabolizing, and producing enzymes and hormones, for example—are well coordinated with environmental rhythms, but the key question is whether the animal's schedule is driven by external cues, such as sunrise or sunset, or is instead dependent somehow on internal timers that themselves generate the observed biological rhythms. Almost universally, biologists accept the idea that all eukaryotes (a category that includes most organisms except bacteria and certain algae) have internal clocks. By isolating organisms completely from external periodic cues, biologists learned that organisms have internal clocks. For instance, apparently normal daily periods of biological activity were maintained for about a week by the fungus Neurospora when it was intentionally isolated from all geophysical timing cues while orbiting in a space shuttle. The continuation of biological rhythms in an organism without external cues attests to its having an internal clock.

When crayfish are kept continuously in the dark, even for four to five months, their compound eyes

- Stability, a feature of the biological clock's period, depends on changeable factors such as temperature.
- A major feature of the biological clock is that its period does not change despite significant changes in the environment.
- A factor such as temperature is an important feature in the establishment of the biological clock's period.
- Biological activity is not strongly affected by changes in temperature.

6. According to paragraph 2, which of the following is true about the circadian periods of animals deprived of environmental cues?

- They have the same length as the daily activity cycles of animals that are not deprived of such cues.
- They can vary significantly from day to day.
- They are not the same for all members of a single species.
- They become longer over time.

7. According to paragraph 2, what will an animal experience when its internal rhythms no longer correspond with the daily cycle of the environment?

- Disorientation
 - Change in period of the internal rhythms
 - Reversal of day and night activities
- Increased
- Sensitivity to environmental factors

8. In paragraph 2, the author provides evidence for the role of biological clocks by

- listing the daily activities of an animal's cycle: sleeping, feeding, moving, reproducing, metabolizing, and producing enzymes and hormones
- describing the process of establishing the period of a biological clock
- presenting cases in which an animal's

continue to adjust on a daily schedule for daytime and nighttime vision. Horseshoe crabs kept in the dark continuously for a year were found to maintain a persistent rhythm of brain activity that similarly adapts their eyes on a daily schedule for bright or for weak light. Like almost all daily cycles of animals deprived of environmental cues, those measured for the horseshoe crabs in these conditions were not exactly 24 hours. Such a rhythm whose period is approximately—but not exactly—a day is called circadian. For different individual horseshoe crabs, the circadian period ranged from 22.2 to 25.5 hours. A particular animal typically maintains its own characteristic cycle duration with great precision for many days. Indeed, stability of the biological clock's period is one of its major features, even when the organism's environment is subjected to considerable changes in factors, such as temperature, that would be expected to affect biological activity strongly. Further evidence for persistent internal rhythms appears when the usual external cycles are shifted—either experimentally or by rapid east-west travel over great distances. Typically, the animal's daily internally generated cycle of activity continues without change. As a result, its activities are shifted relative to the external cycle of the new environment. The disorienting effects of this mismatch between external time cues and internal schedules may persist, like our jet lag, for several days or weeks until certain cues such as the daylight/darkness cycle reset the organism's clock to synchronize with the daily rhythm of the new environment.

Animals need natural periodic signals like sunrise to maintain a cycle

daily schedule remained stable despite lack of environmental cues

- contrasting animals whose daily schedules fluctuate with those of animals whose schedules are constant

9. The word duration in the passage is closest in meaning to

- length
- feature
- process
- repetition

10. In paragraph 2, why does the author mention that the period for different horseshoe crabs ranges from 22.2 to 25.5 hours?

- To illustrate that an animal's internal clock seldom has a 24-hour cycle
- To argue that different horseshoe crabs will shift from daytime to nighttime vision at different times
- To illustrate the approximate range of the circadian rhythm of all animals
- To support the idea that external cues are the only factors affecting an animal's periodic behavior

Paragraph 3:

11. The word it in the passage refers to

- an external cue such as sunrise
- the daily rhythm of an animal
- the local solar day
- a cycle whose period is precisely 24 hours

12. The word sustained in the passage is closest in meaning to

- intense
- uninterrupted
- natural
- periodic

whose period is precisely 24 hours. ■ Such an external cue not only coordinates an animal's daily rhythms with particular features of the local solar day but also—because it normally does so day after day—seems to keep the internal clock's period close to that of Earth's rotation. ■ Yet despite this synchronization of the period of the internal cycle, the animal's timer itself continues to have its own genetically built-in period close to, but different from, 24 hours. ■ Without the external cue, the difference accumulates and so the internally regulated activities of the biological day drift continuously, like the tides, in relation to the solar day. ■ This drift has been studied extensively in many animals and in biological activities ranging from the hatching of fruit fly eggs to wheel running by squirrels. Light has a predominating influence in setting the clock. Even a fifteen-minute burst of light in otherwise sustained darkness can reset an animal's circadian rhythm. Normally, internal rhythms are kept in step by regular environmental cycles. For instance, if a homing pigeon is to navigate with its Sun compass, its clock must be properly set by cues provided by the daylight/darkness cycle.

Paragraph 3:

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Because the internal signals that regulate waking and going to sleep tend to align themselves with these external cues, the external clock appears to dominate the internal clock.

14.

The activity of animals is usually coordinated with periodically recurring events in the environment.

Answer Choices

- Most animals survive and reproduce successfully without coordinating their activities to external environmental rhythms.
- The circadian period of an animal's internal clock is genetically determined and basically unchangeable.
- Environmental cues such as a change in temperature are enough to reset an animal's clock.
- Animals have internal clocks that influence their activities even when environmental cues are absent.
- Animals are less affected by large differences between their internal rhythms and the local solar day than are humans
- Because an animal's internal clock does not operate on a 24-hour cycle, environmental stimuli are needed to keep the biological day aligned with the solar day.

Paragraph 1 □

1. Paragraph 1 indicates that researchers use indirect methods primarily to observe the

- range of motor activity in neonates
- frequency and duration of various stimuli
- change in an infant's state following the introduction of a stimulus
- range of an infant's visual field

Methods of Studying Infant Perception

In the study of perceptual abilities of infants, a number of techniques are used to determine infants' responses to various stimuli. Because they cannot verbalize or fill out questionnaires, indirect techniques of naturalistic

2. The word uniformly in the passage is closest in meaning to

- clearly
- quickly
- consistently
- occasionally

3. Why does the author mention repetitive following movements of the eye ?

- To identify a response that indicates a neonate's perception of a stimulus
- To explain why a neonate is capable of responding to stimuli only through repetitive movements
- To argue that motor activity in a neonate may be random and unrelated to stimuli
- To emphasize that responses to stimuli vary in infants according to age

Paragraph 2 □

4. Which of the following is NOT mentioned in paragraph 2 as a problem in using the technique of direct observation?

- It is impossible to be certain of the actual cause of an infant's response.
- Infants' responses, which occur quickly and diffusely, are often difficult to measure.
- Infants do not respond well to stimuli presented in an unnatural laboratory setting.
- It may be difficult for observers to agree on the presence or the degree of a response.

一想到新托福，就想到咱老无。

5. The word potent in the passage is closest in meaning to

- artificial
- powerful
- common
- similar

6. Which of the sentences below best expresses the essential information in the

observation are used as the primary means of determining what infants can see, hear, feel, and so forth. Each of these methods compares an infant's state prior to the introduction of a stimulus with its state during or immediately following the stimulus. The difference between the two measures provides the researcher with an indication of the level and duration of the response to the stimulus. For example, if a uniformly moving pattern of some sort is passed across the visual field of a neonate (new born), repetitive following movements of the eye occur. The occurrence of these eye movements provides evidence that the moving pattern is perceived at some level by the newborn. Similarly, changes in the infant's general level of motor activity —turning the head, blinking the eyes, crying, and so forth — have been used by researchers as visual indicators of the infant's perceptual abilities.

Such techniques, however, have limitations. First, the observation may be unreliable in that two or more observers may not agree that the particular response occurred, or to what degree it occurred. Second, responses are difficult to quantify. Often the rapid and diffuse movements of the infant make it difficult to get an accurate record of the number of responses. The third, and most potent, limitation is that it is not possible to be certain that the infant's response was due to the stimulus presented or to a change from no stimulus to a stimulus. The infant may be responding to aspects of the stimulus different than those identified by the investigator. Therefore, when observational assessment is used as a technique for studying infant perceptual abilities, care must be taken

highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Researchers using observational assessment techniques on infants must not over generalize and must base their conclusions on data from many studies.
- On the basis of the data from one or two studies, it seems that some infants develop a particular perceptual ability not observed in others.
- To use data from one or two studies on infant's perceptual abilities, it is necessary to use techniques that will provide conclusive evidence.
- When researchers fail to make generalizations from their studies, their observed data is often inconclusive.

Paragraph 3 □

7. What is the author's primary purpose in paragraph 3?

- To explain why researchers must conduct more than one type of study when they are attempting to understand infant perception
- To describe new techniques for observing infant perception that overcome problems identified in the previous paragraph
- To present and evaluate the conclusions of various studies on infant perception
- To point out the strengths and weaknesses of three new methods for quantifying an infant's reaction to stimuli

8. The word quantifiable in the passage is closest in meaning to

- visual
- permanent
- meaningful
- measurable

9. Paragraph 3 mentions all of the

not to overgeneralize from the data or to rely on one or two studies as conclusive evidence of a particular perceptual ability of the infant.

Observational assessment techniques have become much more sophisticated, reducing the limitations just presented. Film analysis of the infant's responses, heart and respiration rate monitors, and nonnutritive sucking devices are used as effective tools in understanding infant perception. ■ Film analysis permits researchers to carefully study the infant's responses over and over and in slow motion. ■ Precise measurements can be made of the length and frequency of the infant's attention between two stimuli. ■ Heart and respiration monitors provide the investigator with the number of heartbeats or breaths taken when a new stimulus is presented. ■ Numerical increases are used as quantifiable indicators of heightened interest in the new stimulus. Increases in nonnutritive sucking were first used as an assessment measure by researchers in 1969. They devised an apparatus that connected a baby's pacifier to a counting device. As stimuli were presented, changes in the infant's sucking behavior were recorded. Increases in the number of sucks were used as an indicator of the infant's attention to or preference for a given visual display.

Two additional techniques of studying infant perception have come into vogue. The first is the habituation-dishabituation technique, in which a single stimulus is presented repeatedly to the infant until there is a measurable decline (habituation) in whatever attending behavior is being

following as indications of an infant's heightened interest in a new stimulus EXCEPT an increase in

- sucking behavior
- heart rate
- the number of breaths taken
- eye movements

Paragraph 4:

10. According to paragraph 4, which of the following leads to the conclusion that infants are able to differentiate between stimuli in a habituation dishabituation study?

- Dishabituation occurs with the introduction of a new stimulus.
- Electrical responses in the infant's brain decline with each new stimulus.
- Habituation is continued with the introduction of a new stimulus.
- The infant displays little change in electrical brain responses.

11. In paragraph 4, what does the author suggest about the way an infant's brain perceives stimuli?

- An infant's potential to respond to a stimulus may be related to the size of its brain.
- Changes in the electrical patterns of an infant's brain are difficult to detect.
- Different areas of an infant's brain respond to different types of stimuli.
- An infant is unable to perceive more than one stimulus at a time.

Paragraph 5□

12. Paragraph 5 indicates that researchers who used the techniques described in the passage discovered that

- infants find it difficult to perceive some types of stimuli
- neonates of only a few days cannot yet discriminate between stimuli
- observational assessment is less useful for studying infant perception than

observed. At that point a new stimulus is presented, and any recovery (dishabituation) in responsiveness is recorded. If the infant fails to dishabituate and continues to show habituation with the new stimulus, it is assumed that the baby is unable to perceive the new stimulus as different. The habituation-dishabituation paradigm has been used most extensively with studies of auditory and olfactory perception in infants. The second technique relies on evoked potentials, which are electrical brain responses that may be related to a particular stimulus because of where they originate. Changes in the electrical pattern of the brain indicate that the stimulus is getting through to the infant's central nervous system and eliciting some form of response.

Each of the preceding techniques provides the researcher with evidence that the infant can detect or discriminate between stimuli. With these sophisticated observational assessment and electro physiological measures, we know that the neonate of only a few days is far more perceptive than previously suspected. However, these measures are only "indirect" indicators of the infant's perceptual abilities.

researchers previously believed
○ a neonate is able to perceive stimuli
better than researchers once thought

Paragraph 3 □

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

The repetition allows researchers to observe the infant's behavior until they reach agreement about the presence and the degree of the infant's response.

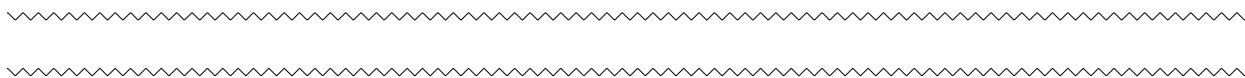
Where would the sentence best fit?

14.

Researchers use a number of techniques to determine how infants respond to changes in their environment

Answer choices

- Data from observational methods must be confirmed through multiple studies.
- New techniques for studying infant perception have improved the accuracy with which researchers observe and quantify infant responses
- Indirect observation is most accurate when researchers use it to test auditory and olfactory perception in neonates.
- Visual indicators such as turning the head, blinking the eyes, or crying remain the best evidence of an infant's perceptual abilities.
- Pacifiers are commonly used in studies to calm an infant who has been presented with excessive stimuli.
- Sophisticated techniques that have aided new discoveries about perception in the neonate continue to be indirect measures.



TPO 14

Paragraph 1:

Children and Advertising

1. Which of the following is NOT mentioned in paragraph 1 as being a difficult judgment for children to make about advertised toys?

- How big the toys are
- How much the toys cost
- What the toys can do
- How the toys are made

Paragraph 2:

2. The word “verify” in the passage is closest in meaning to

- establish the truth of
- approve of
- understand
- criticize

3. In paragraph 2, what is one reason that claims such as “the best” or “better than” can be misleading?

- They represent the opinions of adults, which are often different from those of children.
- They generally involve comparisons among only a small group of products.
- They reflect the attitudes of consumer protection groups rather than those of actual consumers.
- They reflect the advertiser's viewpoint about the product.

4. Cereal advertisements that include the statement “when part of a nutritionally balanced breakfast” are trying to suggest that

- the cereal is a desirable part of a healthful, balanced breakfast
- the cereal contains equal amounts of all nutrients
- cereal is a healthier breakfast than other foods are
- the cereal is the most nutritious part of the breakfast meal

5. According to paragraph 2, all of the

Young children are trusting of commercial advertisements in the media, and advertisers have sometimes been accused of taking advantage of this trusting outlook. The Independent Television Commission, regulator of television advertising in the United Kingdom, has criticized advertisers for “misleadingness”—creating a wrong impression either intentionally or unintentionally—in an effort to control advertisers' use of techniques that make it difficult for children to judge the true size, action, performance, or construction of a toy.

General concern about misleading tactics that advertisers employ is centered on the use of exaggeration. Consumer protection groups and parents believe that children are largely ill-equipped to recognize such techniques and that often exaggeration is used at the expense of product information. Claims such as “the best” or “better than” can be subjective and misleading; even adults may be unsure as to their meaning. They represent the advertiser's opinions about the qualities of their products or brand and, as a consequence, are difficult to verify. Advertisers sometimes offset or counterbalance an exaggerated claim with a disclaimer—a qualification or condition on the claim. For example, the claim that breakfast cereal has a health benefit may be accompanied by the disclaimer “when part of a nutritionally balanced breakfast.” However, research has shown that children often have difficulty understanding disclaimers: children may interpret the phrase “when part of a nutritionally balanced breakfast” to mean that the cereal is required as a necessary part of a

following are true of disclaimers made in advertisements EXCEPT:

- They are qualifications or conditions put on a claim.
- They may be used to balance exaggerations.
- They are usually presented in both audio and visual formats.
- They are often difficult for children to understand.

Paragraph 3:

6. The word "adept" in the passage is closest in meaning to

- responsible
- skillful
- patient
- curious

7. Paragraph 3 indicates that there is uncertainty about which of the following issues involving children and fantasy in advertising?

- Whether children can tell if what they are seeing in an advertisement is real or fantasy
- Whether children can differentiate fantasy techniques from other techniques used in advertising
- Whether children realize how commonly fantasy techniques are used in advertising aimed at them
- Whether children are attracted to advertisements that lack fantasy

8. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Rational appeals in advertising are certainly limited by children's emotional immaturity and the indirect nature of their associations.
- Indirect appeals to children's psychological states or associations can limit

balanced breakfast. The author George Comstock suggested that less than a quarter of children between the ages of six and eight years old understood standard disclaimers used in many toy advertisements and that disclaimers are more readily comprehended when presented in both audio and visual formats. Nevertheless, disclaimers are mainly presented in audio format only.

Fantasy is one of the more common techniques in advertising that could possibly mislead a young audience. Child-oriented advertisements are more likely to include magic and fantasy than advertisements aimed at adults. In a content analysis of Canadian television, the author Stephen Kline observed that nearly all commercials for character toys featured fantasy play. Children have strong imaginations and the use of fantasy brings their ideas to life, but children may not be adept enough to realize that what they are viewing is unreal. Fantasy situations and settings are frequently used to attract children's attention, particularly in food advertising. Advertisements for breakfast cereals have, for many years, been found to be especially fond of fantasy techniques, with almost nine out of ten including such content. Generally, there is uncertainty as to whether very young children can distinguish between fantasy and reality in advertising. Certainly, rational appeals in advertising aimed at children are limited, as most advertisements use emotional and indirect appeals to psychological states or associations.

The use of celebrities such as singers and movie stars is common in advertising. The intention is for the positively

the effectiveness of rational appeals in advertising.

○ Rational appeals play a much smaller role in advertisements for children than emotional appeals and psychological associations do.

○ Rational appeals in advertising aimed at children should certainly be limited until the children are emotionally and psychologically ready.

Paragraph 4:

9. The word "attributes" in the passage is closest in meaning to

- Evaluations
- Attitudes
- Actions
- Characteristics

10. In paragraph 4, why does the author mention a show about a cartoon lion in which an advertisement appears featuring the same lion character?

○ To help explain what is meant by the term "host selling" and why it can be misleading to children

○ To explain why the role of celebrities in advertising aimed at children has often been confused with host selling

○ To compare the effectiveness of using animated figures with the effectiveness of using celebrities in advertisements aimed at children

○ To indicate how Kunkel first became interested in studying the effects of host selling on children

Paragraph 5:

11. The word "credible" in the passage is closest in meaning to

- helpful
- believable
- valuable
- familiar

perceived attributes of the celebrity to be transferred to the advertised product and for the two to become automatically linked in the audience's mind. In children's advertising, the celebrities are often animated figures from popular cartoons. In the recent past, the role of celebrities in advertising to children has often been conflated with the concept of host selling. Host selling involves blending advertisements with regular programming in a way that makes it difficult to distinguish one from the other. Host selling occurs, for example, when a children's show about a cartoon lion contains an ad in which the same lion promotes a breakfast cereal. The psychologist Dale Kunkel showed that the practice of host selling reduced children's ability to distinguish between advertising and program material. It was also found that older children responded more positively to products in host selling advertisements.

Regarding the appearance of celebrities in advertisements that do not involve host selling, the evidence is mixed. Researcher Charles Atkin found that children believe that the characters used to advertise breakfast cereals are knowledgeable about cereals, and children accept such characters as credible sources of nutritional information. This finding was even more marked for heavy viewers of television. In addition, children feel validated in their choice of a product when a celebrity endorses that product. A study of children in Hong Kong, however, found that the presence of celebrities in advertisements could negatively affect the children's perceptions of a product if the children did not like the celebrity in question.

12. According to paragraph 5, what did a study of children in Hong Kong show about the use of celebrities in advertisements aimed at children?

It is most effective with children who watch a lot of television.

It has little effect if the celebrities are not familiar to most children.

It is more effective in marketing cereals and food products than in marketing other kinds of products.

It can have a negative effect if the celebrities are not popular with children. in the passage is closest in meaning to

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Another aspect of advertising that may especially influence children is fantasy.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

1. 2. 3. 4.

14.

Advertisements can be misleading to children when the advertisements use audio and visual formats that are especially appealing to children.

Answer Choices

○ Children may not be able to interpret exaggerated claims made by advertisers or understand the disclaimers used to offset claims.

○ Although the use of celebrities is not necessarily effective in advertisements aimed at children, there is evidence that host selling can positively affect their views of a product.

○ Studies show that misleading tactics are used most often in commercials for breakfast cereals, with toy commercials using such tactics only slightly less frequently.

■Fantasy is one of the more common techniques in advertising that could possibly mislead a young audience. ■Child-oriented advertisements are more likely to include magic and fantasy than advertisements aimed at adults. ■In a content analysis of Canadian television, the author Stephen Kline observed that nearly all commercials for character toys featured fantasy play. ■Children have strong imaginations and the use of fantasy brings their ideas to life, but children may not be adept enough to realize that what they are viewing is unreal. Fantasy situations and settings are frequently used to attract children's attention, particularly in food advertising. Advertisements for breakfast cereals have, for many years, been found to be especially fond of fantasy techniques, with almost nine out of ten including such content. Generally, there is uncertainty as to whether very young children can distinguish between fantasy and reality in advertising. Certainly, rational appeals in advertising aimed at children are limited, as most advertisements use emotional and indirect appeals to psychological states or associations.

- The use of fantasy is especially common in advertisements for children, but children may not be able to distinguish fantasy from reality.
- Very young children are particularly influenced by host selling, while slightly older children are more readily misled by seemingly rational claims such as 'the best.'
- Advertisements can be misleading to children when the advertisements use audio and visual formats that are especially appealing to children.

Paragraph 1:

1. Why does the author call the Mayan homeland both a "seasonal tropical forest" and "seasonal desert"?
 - To illustrate how the climate of the Mayan homeland varied from region to region
 - To explain how the climate of the Mayan homeland is similar to that of a jungle or tropical rainforest
 - To emphasize the vast size of the area that comprised the Mayan homeland in ancient times
 - To make the point that the Mayan homeland is climatically more complex than is generally assumed

Paragraph 2:

2. Which of the following is NOT mentioned in paragraph 2 as a difference between the northern and southern Yucatan Peninsula?
 - The annual rainfall was greater in the south.
 - The population density was lower in the north.
 - Agricultural productivity was greater in the south
 - Rainfall was more unpredictable and variable in the south.
3. Which of the following statements about ancient and modern agriculture in the

Maya Water Problems

To understand the ancient Maya people who lived in the area that is today southern Mexico and Central America and the ecological difficulties they faced, one must first consider their environment, which we think of as "jungle" or 'tropical rainforest.' This view is inaccurate, and the reason proves to be important. Properly speaking, tropical rainforests grow in high-rainfall equatorial areas that remain wet or humid all year round. But the Maya homeland lies more than sixteen hundred kilometers from the equator, at latitudes 17 to 22 degrees north, in a habitat termed a "seasonal tropical forest." That is, while there does tend to be a rainy season from May to October, there is also a dry season from January through April. If one focuses on the wet months, one calls the Maya homeland a "seasonal tropical forest"; if one focuses on the dry months, one could instead describe it as a "seasonal desert."

From north to south in the Yucatan Peninsula, where the Maya lived, rainfall ranges from 18 to 100 inches (457 to 2,540 millimeters) per year, and the soils become thicker, so that the southern peninsula was agriculturally more productive and

Yucatan Peninsula is supported by paragraph 2?

- Modern agricultural methods have solved many of the ancient problems of farming in the Yucatan Peninsula.
- Ancient Mayan farmers may have been somewhat more successful at farming in the Yucatan Peninsula than farmers are today.
- Farming today is easier than in the past because environmental changes in the Yucatan Peninsula have increased available rainfall
- The Yucatan soils in which ancient farmers worked were richer, more productive, and thicker than they are today.

Paragraph 3:

4. The word "paradoxically" in the passage is closest in meaning to

- usually
- surprisingly
- understandably
- predictably

5 The phrase "The likely explanation" in the passage refers to the explanation for why

- the southern Maya areas received more rainfall than the northern areas
- modern archaeologists have difficulty understanding ancient droughts
- water problems were most severe in the wet south
- land surface in the south is so high above the water table

6 Which of the following statements about the availability of water in the Mayan homeland is supported by paragraph 3?

- The construction of wells was an uncommon practice in both the north and the south because it was too difficult to dig through the karst.
- In most areas in the north and the south, rainwater was absorbed directly into the porous

supported denser populations. But rainfall in the Maya homeland is unpredictably variable between years; some recent years have had three or four times more rain than other years. As a result, modern farmers attempting to grow corn in the ancient Maya homelands have faced frequent crop failures, especially in the north. The ancient Maya were presumably more experienced and did better, but nevertheless they too must have faced risks of crop failures from droughts and hurricanes.

Although southern Maya areas received more rainfall than northern areas, problems of water were paradoxically more severe in the wet south. While that made things hard for ancient Maya living in the south, it has also made things hard for modern archaeologists who have difficulty understanding why ancient droughts caused bigger problems in the wet south than in the dry north. The likely explanation is that an area of underground freshwater underlies the Yucatan Peninsula, but surface elevation increases from north to south, so that as one moves south the land surface lies increasingly higher above the water table. In the northern peninsula the elevation is sufficiently low that the ancient Maya were able to reach the water table at deep sinkholes called cenotes, or at deep caves. In low-elevation north coastal areas without sinkholes, the Maya would have been able to get down to the water table by digging wells up to 75 feet (22 meters) deep. But much of the south lies too high above the water table for cenotes or wells to reach down to it. Making matters worse, most of the Yucatan Peninsula consists of karst, a porous sponge-like limestone terrain where rain runs straight into the

karst.

○ The water table was an important resource for agriculture in both the north and the south of the Yucatan Peninsula,

○ The lack of surface water in both the north and the south was probably due to the fact that most of it was quickly used up for agricultural purposes.

7 According to paragraph 3, why was the southern Mayan homeland hard to farm?

○ The presence of numerous sinkholes and wells interfered with farming.

○ Southern soil lacked the depth crops needed for growth.

○ Underground water was too far below the surface to reach.

○ The presence of karst caused frequent flooding.

8 Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○ Southern Maya populations obtained the water they needed for the dry season by collecting and storing rainwater in sealed depressions.

○ The Maya are credited with creating methods for modifying natural rainwater and storing it.

○ Leaks in the karst caused difficulties in the creation of reservoirs, which were needed to store water for the dry season.

○ Southern Mayans were more successful at collecting rain than storing it during dry seasons.

ground and where little or no surface water remains available.

How did those dense southern Maya populations deal with the resulting water problem? It initially surprises us that many of their cities were not built next to the rivers but instead on high terrain in rolling uplands. The explanation is that the Maya excavated depressions, or modified natural depressions, and then plugged up leaks in the karst by plastering the bottoms of the depressions in order to create reservoirs, which collected rain from large plastered catchment basins and stored it for use in the dry season. For example, reservoirs at the Maya city of Tikal held enough water to meet the drinking water needs of about 10,000 people for a period of 18 months. At the city of Coba the Maya built dikes around a lake in order to raise its level and make their water supply more reliable. But the inhabitants of Tikal and other cities dependent on reservoirs for drinking water would still have been in deep trouble if 18 months passed without rain in a prolonged drought. A shorter drought in which they exhausted their stored food supplies might already have gotten them in deep trouble, because growing crops required rain rather than reservoirs.

Paragraph 4:

9.What can be inferred from paragraph 4 about how residents of Tikal met their needs for water and food during most periods of drought?

- They depended upon water and food that had been stored for use during the dry season.
- They obtained drinking water and water for crop irrigation from Coba dikes.
- They located their population centers near a lake where water was available for drinking and watering crops.
- They moved locations every 18 months to find new croplands and water sources.

10. The word "prolonged" in the passage is closest in meaning to

- unusual
- unexpected
- extended
- disastrous

11. The word "exhausted" in the passage is closest in meaning to

- used up
- reduced
- wasted
- relied upon

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

The difference between the two climates challenged the Maya who had to deal with both.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

Click on a square [■] to add the sentence to the passage.

1. 2. 3. 4

13.

Drag your answer choices to the spaces where they belong To remove an answer choice, click on it.

To review the passage, click View Text

Southern Mayan homeland

To understand the ancient Mayan people who lived in the area that is today southern Mexico and Central America and the ecological difficulties they faced, one must first consider their environment, which we think of as "jungle" or 'tropical rainforest.' ■This view is inaccurate, and the reason proves to be important. ■Properly speaking, tropical rainforests grow in high-rainfall equatorial areas that remain wet or humid all year round. But the Maya homeland lies more than sixteen hundred kilometers from the equator, at latitudes 17 to 22 degrees north, in a habitat termed a "seasonal tropical forest." ■That is, while there does tend to be a rainy season from May to October, there is also a dry season from January through April. If one focuses on the wet months, one calls the Maya homeland a "seasonal tropical forest"; if one focuses on the dry months, one could instead describe it as a "seasonal desert." ■

-
-
-

Northern Mayan homeland

-
-

Answer Choices

- City of Tikal
- Predictable rainfall
- High above water table
- Used reservoirs
- Obtained water from wells
- Dramatically improved corn crops
- Had comparatively thin layer of soil

Paragraph 1:

1. The word “prestige” in the passage is closest in meaning to

- interest
- status
- demand
- profit

2. According to paragraph 1, what made it possible for Inner Eurasian pastoralism to become the most mobile and militaristic form of pastoralism?

- It involved the domestication of several types of animals.
- It was based primarily on horses rather than on other animals.
- It borrowed and improved upon European ideas for mobility and warfare.
- It could be adapted to a wide variety of environments.

3. The word “profound” in the passage is closest in meaning to

- strange
- positive
- direct
- far-reaching

Paragraph 2:

Pastoralism in Ancient Inner Eurasia

Pastoralism is a lifestyle in which economic activity is based primarily on livestock. Archaeological evidence suggests that by 3000 B.C., and perhaps even earlier, there had emerged on the steppes of Inner Eurasia the distinctive types of pastoralism that were to dominate the region's history for several millennia. Here, the horse was already becoming the animal of prestige in many regions, though sheep, goats, and cattle could also play a vital role. It is the use of horses for transportation and warfare that explains why Inner Eurasian pastoralism proved the most mobile and the most militaristic of all major forms of pastoralism. The emergence and spread of pastoralism had a profound impact on the history of Inner Eurasia, and also, indirectly, on the parts of Asia and Europe just outside this area. In particular, pastoralism favors a mobile lifestyle, and this mobility helps to explain the impact of pastoralist societies on this part of the world

The mobility of pastoralist societies reflects their dependence on animal-based

4. In paragraph 2, why does the author contrast pastoralists with agriculturalists?

- To explain why pastoralism requires more land than agriculturalism to support basic needs
- To identify some advantages that mobile societies have over immobile societies
- To demonstrate that ecological principles that apply to pastoralism do not apply to agriculturalism
- To argue that agriculturalism eventually developed out of pastoralism

5 According to paragraph 2, pastoralists tend to

- prefer grazing their animals on agricultural lands
- consume comparatively large amounts of food and clothing
- avoid eating plant foods
- move from place to place frequently

Paragraph3:

6 In paragraph 3, why does the author discuss languages spoken in the region spanning from Eastern Europe to the western borders of Mongolia?

- To emphasize the frequency with which Indo-European languages changed as a result of the mobile nature of pastoralism
- To indicate one method linguists use to determine that inhabitants of the Don and Dnieper river area had taken up stock breeding
- provide evidence that Indo-European languages have their roots in what is now Turkey
- To provide evidence that pastoralist societies can exercise cultural influence over a large area

7 The word "striking" in the passage is closest in meaning to

- reliable
- noticeable

foods. While agriculturalists rely on domesticated plants, pastoralists rely on domesticated animals. As a result, pastoralists, like carnivores in general, occupy a higher position on the food chain. All else being equal, this means they must exploit larger areas of land than do agriculturalists to secure the same amount of food, clothing, and other necessities. So pastoralism is a more extensive lifeway than farming is. However, the larger the terrain used to support a group, the harder it is to exploit that terrain while remaining in one place. So, basic ecological principles imply a strong tendency within pastoralist lifeways toward nomadism (a mobile lifestyle). As the archaeologist Roger Cribb puts it, 'The greater the degree of pastoralism, the stronger the tendency toward nomadism.' A modern Turkic nomad interviewed by Cribb commented: "The more animals you have, the farther you have to move."

Nomadism has further consequences. It means that pastoralist societies occupy and can influence very large territories. This is particularly true of the horse pastoralism that emerged in the Inner Eurasian steppes, for this was the most mobile of all major forms of pastoralism. So, it is no accident that with the appearance of pastoralist societies there appear large areas that share similar cultural, ecological, and even linguistic features. By the late fourth millennium B.C., there is already evidence of large culture zones reaching from Eastern Europe to the western borders of Mongolia. Perhaps the most striking sign of mobility is the fact that by the third millennium B.C., most pastoralists in this huge region spoke related languages ancestral to the modern Indo-European

- convincing
- violent

8 The word "exploit" in the passage is closest in meaning to

- use to advantage
- depart from
- pay attention to
- travel across

Paragraph 4:

9 According to paragraph 4, the fact that pastoralist communities are subject to "strict rules of portability" encourages such communities to

- relocate less frequently than they would otherwise
- have households that are more or less equal in wealth
- become self-sufficient in the manufacture of silk and jewelry
- share large material surpluses with neighboring communities

10 According to paragraph 4, all of the following are true of social inequality in pastoralist societies EXCEPT:

- It exists and has existed to some degree in most pastoral societies.
- It is most marked during periods of military conquest.
- It is expressed in the form of a rigid hierarchy based largely on heredity.
- It is usually too insignificant to be discussed in terms of class differences.

11 Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Despite the fact that wealth is relatively evenly distributed in pastoral societies, gender

languages. The remarkable mobility and range of pastoral societies explain, in part, why so many linguists have argued that the Indo-European languages began their astonishing expansionist career not among farmers in Anatolia (present-day Turkey), but among early pastoralists from Inner Eurasia. Such theories imply that the Indo-European languages evolved not in Neolithic (10,000 to 3,000 B.C.) Anatolia, but among the foraging communities of the cultures in the region of the Don and Dnieper rivers, which took up stock breeding and began to exploit the neighboring steppes.

Nomadism also subjects pastoralist communities to strict rules of portability. ■ If you are constantly on the move, you cannot afford to accumulate large material surpluses. ■ Such rules limit variations in accumulated material goods between pastoralist households (though they may also encourage a taste for portable goods of high value such as silks or jewelry). ■ So, by and large, nomadism implies a high degree of self-sufficiency and inhibits the appearance of an extensive division of labor. ■ Inequalities of wealth and rank certainly exist, and have probably existed in most pastoralist societies, but except in periods of military conquest, they are normally too slight to generate the stable, hereditary hierarchies that are usually implied by the use of the term class. Inequalities of gender have also existed in pastoralist societies, but they seem to have been softened by the absence of steep hierarchies of wealth in most communities, and also by the requirement that women acquire most of the skills of men, including, often, their military skills.

inequality still exists because only men can acquire military skills and social status.

- Inequalities of gender existed in pastoralist societies until most communities began to require women to possess the same skills as men and take part in the military.

- Inequalities of gender in pastoralist societies were caused by steep hierarchies of wealth and differences in military training between men and women.

- In pastoral societies, gender inequality is comparatively mild because wealth is relatively evenly distributed and women have to learn most of the same skills that men do.

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage

There is a good reason for this.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

13. By 3000 B.C., a distinctive form of pastoralism had appeared on the steppes of Inner Eurasia.

Answer Choices

- The domesticated horse is primarily responsible for Inner Eurasian pastoralism's success in mobility and warfare.

- As pastoralists traveled across large areas of terrain with their domesticated animals, they traded valuable material goods such as silks and jewelry.

- Because pastoralists are highly mobile, they tend to have few material possessions and can influence the culture, ecology, and language of very large areas.

- Because pastoralism requires a great deal of land to support its animal-based lifeway, pastoralists must continually relocate and have comparatively egalitarian societies.

- Most scholars now believe that Indo-European languages probably evolved

during the Neolithic period in the region of the Don and Dnieper rivers.

- Pastorslist communities do not have social classes in the usual sense because they value spiritual attainment over material wealth.
-
-

TPO 15

Paragraph 1 □

1. The phrase unique among in the passage is closest in meaning to
 - natural to
 - different from all other
 - quite common among
 - familiar to
2. What can be inferred about whales from paragraph 1?
 - They are considered by some to be reptiles.
 - Their bodies are built in a way that helps them manage extremely cold temperatures
 - They are distantly related to leatherback turtles.
 - They can swim farther than leatherback turtles.

Paragraph 2:

3. The word feat in the passage is closest in meaning to
 - remarkable achievement
 - common transformation
 - daily activity

A Warm-Blooded Turtle

When it comes to physiology, the leatherback turtle is, in some ways, more like a reptilian whale than a turtle. It swims farther into the cold of the northern and southern oceans than any other sea turtle, and it deals with the chilly waters in a way unique among reptiles.

A warm-blooded turtle may seem to be a contradiction in terms. Nonetheless, an adult leatherback can maintain a body temperature of between 25 and 26°C (77 - 79°F) in seawater that is only 8°C (46.4°F). Accomplishing this feat requires adaptations both to generate heat in the turtle's body and to keep it from escaping into the surrounding waters. Leatherbacks apparently do not generate internal heat the way we do, or the way birds do, as a by-product of cellular metabolism. A leatherback may be able to pick up some body heat by basking at the surface; its dark, almost black body color may help it to absorb solar radiation. However, most of its internal heat comes from the action of its muscles.

- complex solution
4. Paragraph 2 mentions all of the following as true about the body heat of adult leatherback turtles EXCEPT:
- Their muscles produce heat for maintaining body temperature.
 - Their dark bodies help trap solar radiation.
 - Their cellular metabolism produces heat as a by-product.
 - Basking at the water's surface helps them obtain heat.

Paragraph 3:

5. The word bulk in the passage is closest in meaning to
- strength
 - effort
 - activity
 - mass

paragraph 4: Paragraph 5:

6. The word it in paragraph 4 refers to
- the problem
 - blood
 - the turtle
 - body temperature
7. According to paragraph 4, which of the following features enables the leatherback turtle to stay warm?
- An insulating layer of blubber
 - A thick, oily skin covering fatty tissue
 - The aerodynamic shape of its flippers
 - A well-insulated head

Paragraph 6:

Leatherbacks keep their body heat in three different ways. The first, and simplest, is size. The bigger the animal is, the lower its surface-to-volume ratio; for every ounce of body mass, there is proportionately less surface through which heat can escape. An adult leatherback is twice the size of the biggest cheloniid sea turtles and will therefore take longer to cool off. Maintaining a high body temperature through sheer bulk is called gigantothermy. It works for elephants, for whales, and, perhaps, it worked for many of the larger dinosaurs. It apparently works, in a smaller way, for some other sea turtles. Large loggerhead and green turtles can maintain their body temperature at a degree or two above that of the surrounding water, and gigantothermy is probably the way they do it. Muscular activity helps, too, and an actively swimming green turtle may be T_c ($12.6^\circ F$) warmer than the water it swims through.

Gigantothermy, though, would not be enough to keep a leatherback warm in cold northern waters. It is not enough for whales, which supplement it with a thick layer of insulating blubber (fat).

Leatherbacks do not have blubber, but they do have a reptilian equivalent: thick, oil-saturated skin, with a layer of fibrous, fatty tissue just beneath it. Insulation protects the leatherback everywhere but on its head and flippers. Because the flippers are comparatively thin and blade-like, they are the one part of the leatherback that is likely to become

8. Which of the sentences below best expresses the essential information in the [highlighted sentence] in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
- In a turtle's countercurrent exchange system, outgoing vessels lie near enough to ingoing ones that heat can be exchanged from the former to the latter before reaching the turtle's flippers.
 - Within the turtle's flippers, there is a countercurrent exchange system that allows colder blood vessels to absorb heat from nearby warmer blood vessels and then return warmed blood to the turtle's body.
 - In a countercurrent exchange system, a turtle can pick up body heat from being close enough to other turtles, thus raising its blood temperature as it passes them.
 - When a turtle places its flippers close to its body, it is able to use its countercurrent exchange system to transfer heat from the warmer blood vessels in its body to the cooler blood vessels in its flippers.
9. Why does the author mention old-fashioned steam radiator in the discussion of countercurrent exchange systems?
- To argue that a turtle's central heating system is not as highly evolved as that of other warmblooded animals
 - To provide a useful comparison with which to illustrate how a countercurrent exchange system works

chilled. There is not much that the turtle can do about this without compromising the aerodynamic shape of the flipper. The problem is that as blood flows through the turtle's flippers, it risks losing enough heat to lower the animal's central body temperature when it returns. The solution is to allow the flippers to cool down without drawing heat away from the rest of the turtle's body. The leatherback accomplishes this by arranging the blood vessels in the base of as flipper into a countercurrent exchange system ..

In a countercurrent exchange system, the blood vessels carrying cooled blood from the flippers run close enough to the blood vessels carrying warm blood from the body to pick up some heat from the warmer blood vessels; thus, the heat is transferred from the outgoing to the ingoing vessels before it reaches the flipper itself. This is the same arrangement found in an old-fashioned steam radiator, in which the coiled pipes pass heat back and forth as water courses through them. The leatherback is certainly not the only animal with such an arrangement; gulls have a countercurrent exchange in their legs. That is why a gull can stand on an ice floe without freezing.

All this applies, of course, only to an adult leatherback. Hatchlings are simply too small to conserve body heat, even with insulation and countercurrent exchange systems. We do not know how old, or how large, a leatherback has to be before it can switch from a cold-blooded to a

- To suggest that steam radiators were modeled after the sophisticated heating system of turtles
 - To establish the importance of the movement of water in countercurrent exchange systems
10. The phrase courses through in the passage is closest in meaning to
- rises through
 - heats up in
 - runs through
 - collects in
11. According to paragraph 6, which of the following statements is most accurate about young leatherback turtles?
- They lack the countercurrent exchange systems that develop in adulthood.
 - Their rate of growth is slower than that of other sea turtles.
 - They lose heat easily even with insulation and countercurrent exchange systems.
 - They switch between cold-blooded and warm-blooded modes throughout their hatchling stage.
12. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

However, these animals have additional means of staying warm.

Where would the sentence best fit?

13. Contrary to what we would expect of reptiles, the leatherback turtle is actually

warm-blooded mode of life. Leatherbacks reach their immense size in a much shorter time than it takes other sea turtles to grow. Perhaps their rush to adulthood is driven by a simple need _ to keep warm.

warm-blooded.

Answer Choices

- Even though they swim into cold ocean waters, leatherbacks maintain their body heat in much the same way as sea turtles in warm southern oceans do.
- The leatherback turtle uses a countercurrent exchange system in order to keep the flippers from drawing heat away from the rest of the body.
- The shape of the leatherback turtle's flippers is especially important in maintaining heat in extremely cold northern waters.
- The leatherback turtle is able to maintain body heat through sheer size.
- Leatherbacks have an insulating layer that can be considered the reptilian version of blubber.
- Young leatherbacks often do not survive to adulthood because they are not able to switch from a cold-blooded way of life to a warm-blooded one quickly enough.

Paragraph 1:

1. Paragraph 1 supports which of the following statements about mass extinctions?
 - They take place over a period of 70 million years.
 - They began during the Cretaceous period.
 - They eliminate many animal species that

Mass Extinctions

Cases in which many species become extinct within a geologically short interval of time are called mass extinctions. There was one such event at the end of the Cretaceous period (around 70 million years ago). There was another, even larger, mass extinction at the end of the Permian period (around 250 million years ago). The Permian event has attracted much less

- exist at the time they occur.
- They occur every 250 million years.
- Paragraph 2:**
2. According to paragraph 2, scientists base their belief that a mass extinction is going on at present on which of the following?
 - The speed with which mass extinctions are happening today is similar to the speed of past extinctions.
 - The number of species that have died out since the last extinction event is extremely large.
 - Mass extinctions occur with regularity and it is time for another one.
 - Fossil records of many marine species have disappeared.

Paragraph 3:

3. The word extended in the passage is closest in meaning to
 - specific
 - unlimited
 - reasonable
 - long
4. According to paragraph 3, each of the following has been proposed as a possible cause of mass extinctions EXCEPT
 - habitat destruction
 - continental movement
 - fierce interspecies competition
 - changes in Earth's temperature
5. Paragraph 3 supports which of the following ideas about mass extinctions?
 - Scientists know the exact causes of most

attention than other mass extinctions because mostly unfamiliar species perished at that time.

The fossil record shows at least five mass extinctions in which many families of marine organisms died out. The rates of extinction happening today are as great as the rates during these mass extinctions. Many scientists have therefore concluded that a sixth great mass extinction is currently in progress.

What could cause such high rates of extinction? There are several hypotheses, including warming or cooling of Earth, changes in seasonal fluctuations or ocean currents, and changing positions of the continents. Biological hypotheses include ecological changes brought about by the evolution of cooperation between insects and flowering plants or of bottom-feeding predators in the oceans. Some of the proposed mechanisms required a very brief period during which all extinctions suddenly took place; other mechanisms would be more likely to have taken place more gradually, over an extended period, or at different times on different continents. Some hypotheses fail to account for simultaneous extinctions on land and in the seas. Each mass extinction may have had a different cause. Evidence points to hunting by humans and habitat destruction as the likely causes for the current mass extinction.

American paleontologists David Raup and John Sepkoski, who have studied extinction rates in a number of fossil groups, suggest that episodes of increased extinction have recurred periodically, approximately every 26 million years since the mid-Cretaceous period. The late Cretaceous extinction of the dinosaurs and ammonoids was just

- mass extinctions.
- Mass extinctions are unlikely to happen again in the future.
 - Insects, flowering plants, and bottom-feeding predators in the oceans tend to be the first organisms to disappear during episodes of mass extinctions.
 - Some mass extinctions occurred on land and in the seas at the same time.

paragraph 4:

6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
- Based on their studies of extinction rates of numerous fossil groups, paleontologists David Raup and John Sepkoski have determined that mass extinctions occur about every 26 million years.
- David Raup and John Sepkoski studied extinction rates of numerous fossil groups and suggest that mass extinctions during the Cretaceous period continued for 26 million years.
- Studies that paleontologists David Raup and John Sepkoski conducted of various fossil groups have revealed that extinction rates have increased over the past 26 million years.
- The studies conducted by paleontologists David Raup and John Sepkoski of the fossil remains of species suggest that the extinction rate of species started to increase by the middle of the Cretaceous period.
7. According to paragraph 4, what aspect of

one of the more drastic in a whole series of such recurrent extinction episodes. The possibility that mass extinctions may recur periodically has given rise to such hypotheses as that of a companion star with a long-period orbit deflecting other bodies from their normal orbits, making some of them fall to Earth as meteors and causing widespread devastation upon impact.

Of the various hypotheses attempting to account for the late Cretaceous extinctions, the one that has attracted the most attention in recent years is the asteroid-impact hypothesis first suggested by Luis and Walter Alvarez. According to this hypothesis, Earth collided with an asteroid with an estimated diameter of 10 kilometers, or with several asteroids, the combined mass of which was comparable. The force of collision spewed large amounts of debris into the atmosphere, darkening the skies for several years before the finer particles settled. The reduced level of photosynthesis led to a massive decline in plant life of all kinds, and this caused massive starvation first of herbivores and subsequently of carnivores. The mass extinction would have occurred very suddenly under this hypothesis.

One interesting test of the Alvarez hypothesis is based on the presence of the rare-earth element iridium (Ir). Earth's crust contains very little of this element, but most asteroids contain a lot more. Debris thrown into the atmosphere by an asteroid collision would presumably contain large amounts of iridium, and atmospheric currents would carry this material all over the globe. A search of sedimentary deposits that span the boundary between the Cretaceous and

extinction episodes does the companion-star hypothesis supposedly clarify?

- Their location
- Their frequency
- Their duration
- Their severity

paragraph 5:

8. The phrase account for in the passage is closest in meaning to

- describe
- challenge
- explain
- test

paragraph 6:

9. According to paragraph 6, what made iridium a useful test of the Alvarez hypothesis?

- Its occurrence in a few locations on Earth against several locations on other planets
- Its occurrence in limited quantities on Earth against its abundance in asteroids
- Its ability to remain solid at extremely high temperatures
- Its ease of detection even in very small amounts

10. In stating that no asteroid itself has ever been recovered the author emphasizes which of the following?

- The importance of the indirect evidence for a large asteroid
- The fact that no evidence supports the asteroid- impact hypothesis
- The reason many researchers reject the

Tertiary periods shows that there is a dramatic increase in the abundance of iridium briefly and precisely at this boundary. This iridium anomaly offers strong support for the Alvarez hypothesis even though no asteroid itself has ever been recovered.

An asteroid of this size would be expected to leave an immense crater, even if the asteroid itself was disintegrated by the impact. The intense heat of the impact would produce heat-shocked quartz in many types of rock. Also, large blocks thrown aside by the impact would form secondary craters surrounding the main crater. To date, several such secondary craters have been found along Mexico's Yucatan Peninsula, and heat-shocked quartz has been found both in Mexico and in Haiti. A location called Chicxulub, along the Yucatan coast, has been suggested as the primary impact site.

Alvarez hypothesis

- The responsibility of scientists for not making the effort to discover the asteroid itself

paragraph 7:

11. The word intense in the passage is closest in meaning to

- sudden
- unusual
- Immediate
- extreme

12. What is the purpose of paragraph 7 in the passage?

- It proposes a decisive new test of the Alvarez hypothesis.
- It presents additional supporting evidence for the Alvarez hypothesis.
- It explains why evidence relating to the Alvarez hypothesis is hard to find.
- It shows how recent evidence has raised doubts about the Alvarez hypothesis

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

In general, it is believed that these two extinctions resulted from drastic environmental changes that followed meteorite impacts or massive volcanic eruptions.

Where would the sentence best fit?

14. Directions:

There have been many attempts to explain the causes of mass extinctions.

answerChoices

- Asteroid impacts, evolutionary developments, and changes in Earth's climate and in the positions of the continents have all been proposed as possible causes of mass extinctions.
- Researchers have observed 26-million-year cycles in extinction rates of a number of fossil groups that could all be attributed to the same cause.
- According to the Alvarez hypothesis, much of the iridium originally present on Earth was thrown into the atmosphere as a result of an asteroid impact that also caused a mass extinction.
- The unusual distribution of iridium on Earth and the presence of craters and heat-shocked quartz are central to the theory that an asteroid impact caused the late Cretaceous event.
- The collision between Earth and a large asteroid resulted in massive damage and generated enough heat to cause irreversible changes in Earth's atmosphere.
- There was a particularly large mass extinction that occurred around 250 million years ago at the end of the Permian period, whose cause could not be determined.

Paragraph1:

1. The word interlocked in the passage is closest in meaning to
 - intermediate
 - linked
 - frozen
 - fully developed

2. According to paragraph 1, which of

Glacier Formation

Glaciers are slowly moving masses of ice that have accumulated on land in areas where more snowfalls during a year than melts. Snowfalls as hexagonal crystals, but once on the ground, snow is soon transformed into a compacted mass of smaller, rounded grains. As the air space around them is lessened by compaction and melting, the grains

the following does NOT describe a stage in the development of firn?

- Hexagonal crystals become larger and interlock to form a thick layer.
- Snow crystals become compacted into grains.
- Granules recrystallize after melting, refreezing, and further compaction.
- Grains become denser owing to reduced air space around them.

Paragraph2:

3: The word match in the passage is closest in meaning to

- measure
- enlarge
- approximate
- equal

4. The word transform in the passage is closest in meaning to

- break
- push
- change
- extend

一想到新托福，就想到咱老无。

5. According to paragraph 2, surplus snow affects a glacier in all the following ways EXCEPT:

- It provides the pressure needed to cause glacial ice to flow.
- It offsets losses of ice due to melting, evaporation, and calving.
- It brings about the formation of firn in the snow it buries.
- It results in temperate glaciers that are thicker than polar glaciers.

6. Paragraph 2 implies that which of the following conditions produces the fastest moving glaciers?

- A climate characteristic of the polar regions

become denser. With further melting, refreezing, and increased weight from newer snowfall above, the snow reaches a granular recrystallized stage intermediate between flakes and ice known as firn. With additional time, pressure, and refrozen meltwater from above, the small firn granules become larger, interlocked crystals of blue glacial ice. When the ice is thick enough, usually over 30 meters, the weight of the snow and firn will cause the ice crystals toward the bottom to become plastic and to flow outward or downward from the area of snow accumulation.

Glaciers are open systems, with snow as the system's input and meltwater as the system's main output. The glacial system is governed by two basic climatic variables: precipitation and temperature. For a glacier to grow or maintain its mass, there must be sufficient snowfall to match or exceed the annual loss through melting, evaporation, and calving, which occurs when the glacier loses solid chunks as icebergs to the sea or to large lakes. If summer temperatures are high for too long, then all the snowfall from the previous winter will melt. Surplus snowfall is essential for a glacier to develop. A surplus allows snow to accumulate and for the pressure of snow accumulated over the years to transform buried snow into glacial ice with a depth great enough for the ice to flow. Glaciers are sometimes classified by temperature as faster-flowing temperate glaciers or as slower-flowing polar glaciers.

Glaciers are part of Earth's hydrologic cycle and are second only to the oceans in the total amount of water contained. About 2 percent of Earth's

- A thick layer of ice in a temperate climate F Long,
- Warm summers
- Snow, firm and ice that have been buried for several years

Paragraph3:

7.The word deceiving in the passage is closest in meaning to

- approximate
- exaggerated
- unusual
- misleading

8.Why does the author consider the hypothetical melting of the world's glaciers?

- To contrast the effects of this event with the opposite effects of a new ice age
- To emphasize how much water is frozen in glaciers
- To illustrate the disastrous effects of a warming trend
- To support the claim that glaciers are part of Earth's hydrologic cycle

9.The discussion in paragraph 3 answers all the following questions EXCEPT:

- Where is most of Earth's freshwater?
- What effect would a new ice age have on sea levels?
- What is the total amount of water in Earth's oceans?
- How much of Earth's water is in ice?

Paragraph4:

10.The word static in the passage is closest in meaning to

- unchanging
- usable
- thick
- harmless

11.Which of the sentences below best expresses the essential information in the highlighted sentence in the passage?

water is currently frozen as ice. Two percent may be a deceiving figure, however, since over 80 percent of the world's freshwater is locked up as ice in glaciers, with the majority of it in Antarctica. The total amount of ice is even more awesome if we estimate the water released upon the hypothetical melting of the world's glaciers. Sea level would rise about 60 meters. This would change the geography of the planet considerably. In contrast, should another ice age occur, sea level would drop drastically. During the last ice age, sea level dropped about 120 meters.

When snowfalls on high mountains or in polar regions, it may become part of the glacial system. Unlike rain, which returns rapidly to the sea or atmosphere, the snow that becomes part of a glacier is involved in a much more slowly cycling system. Here water may be stored in ice form for hundreds or even hundreds of thousands of years before being released again into the liquid water system as meltwater. In the meantime, however, this ice is not static. Glaciers move slowly across the land with tremendous energy, carving into even the hardest rock formations and thereby reshaping the landscape as they engulf, push, drag, and finally deposit rock debris in places far from its original location. As a result, glaciers create a great variety of landforms that remain long after the surface is released from its icy covering.

Throughout most of Earth's history, glaciers did not exist, but at the present time about 10 percent of Earth's land surface is covered by glaciers. Present-day glaciers are found in Antarctica, in Greenland, and at high

Incorrect choices change the meaning in important ways or leave out essential information.

○As a glacier moves, it leaves behind rock formations that have been engulfed, pushed, and dragged by the glacier.

○Glaciers reshape the landscape by carving into rock and transporting the resulting debris to distant locations.

○Glaciers carve the hardest rock formations with great energy and slowly reshape them into debris.

○The tremendous energy of slowly moving glaciers transports and finally deposits rock debris into large rock formations.

Paragraph5:

12. According to paragraph 5, in what way is the present time unusual in the history of Earth?

- There are glaciers.
- More land is covered by glaciers than at anytime in the past.
- There is no ice age.
- No glaciers are found in Australia.

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Firn has the appearance of wet sugar, but it is almost as hard as ice.

Where would the sentence best fit?

14.

Glaciers are part of Earth's hydrologic cycle.

Answer Choices

○Glaciers, which at present contain 80 percent of Earth's freshwater, form when accumulated snow is compressed and recrystallized into ice over a period of years.

○When there are glaciers on Earth, water is cycled through the glacier system but the

elevations on all the continents except Australia. In the recent past, from about 2.4 million to about 10,000 years ago, nearly a third of Earth's land area was periodically covered by ice thousands of meters thick. In the much more distant past, other ice ages have occurred.

cycle period may be hundreds of thousands of years during periods of ice ages.

○The glacial system is governed by precipitation and temperature in such a way that glaciers cannot form in temperate latitudes.

○When glacial ice reaches a depth of 30 meters, the weight of the ice causes ice crystals at the bottom to flow, and the resulting movement of the glacier carves the landscape.

○If global warming melted the world's glaciers, sea level would rise about 60 meters worldwide.

○Glaciers have had little effect on Earth's surface because only 2 percent of Earth's water is currently contained in glaciers, and there are fewer glaciers now than at most times in the past.

~~~~~  
~~~~~

TPO 16

Paragraph 1

1. According to paragraph 1, why has trade been so important throughout the history of the Middle East?
 - A. The rare and valuable metals and stones found in Middle Eastern deserts have always been in high demand in surrounding areas.
 - B. Growing conditions throughout the Middle East are generally poor forcing Middle Eastern people to depend on imported grain.
 - C. Many useful and decorative raw materials cannot be found naturally in the Middle East but are available from neighboring regions.
 - D. Frequent travel due to limited water supplies in the Middle East created many opportunities for trade with neighboring societies.

Trade and the Ancient Middle East

Trade was the mainstay of the urban economy in the Middle East, as caravans negotiated the surrounding desert, restricted only by access to water and by mountain ranges. This has been so since ancient times, partly due to the geology of the area, which is mostly limestone and sandstone, with few deposits of metallic ore and other useful materials. Ancient demands for obsidian (a black volcanic rock useful for making mirrors and tools) led to trade with Armenia to the north, while jade for cutting tools was brought from Turkistan, and the precious stone lapis lazuli was imported from Afghanistan. One can trace such expeditions back to ancient Sumeria, the earliest known Middle Eastern civilization. Records show merchant caravans and

Paragraph 2

2. The word repudiate in the passage is closest in meaning to
- A. respect
 - B. reject
 - C. review
 - D. revise
3. According to paragraph 2, how did Middle Eastern shop owners treat their workers?
- A. Workers were ranked according to their skill level, with the most-experienced Artisans becoming partial owners of the shop
 - B. Shop owners treated different workers differently depending on how much the workers had in common with their masters.
 - C. Workers were bound to their masters by unbreakable contracts that strictly defined the terms of their partnership.
 - D. The shop owner worked alongside the workers and often considered them partners and members of the family.

Paragraph 3

4. The author includes the information that "surplus was not a result of domestic craft production but resulted primarily from international trading" in order to
- A. Support the claim that the mode of production made possible by the craft guilds was very good for trade
 - B. Contrast the economic base of the city government with that of the tribal confederacies
 - C. Provide a reason why the government allowed the guilds to be self-controlled
 - D. Suggest that the government was missing out on a valuable opportunity to tax the guilds
5. According to paragraph 3, all of the

trading posts set up by the Sumerians in the surrounding mountains and deserts of Persia and Arabia, where they traded grain for raw materials, such as timber and stones, as well as for metals and gems.

Reliance on trade had several important consequences. Production was generally in the hands of skilled individual artisans doing piecework under the tutelage of a master who was also the shop owner. In these shops differences of rank were blurred as artisans and masters labored side by side in the same modest establishment, were usually members of the same guild and religious sect, lived in the same neighborhoods, and often had assumed (or real) kinship relationships. The worker was bound to the master by a mutual contract that either one could repudiate, and the relationship was conceptualized as one of partnership.

This mode of craft production favored the growth of self-governing and ideologically egalitarian craft guilds everywhere in the Middle Eastern city. These were essentially professional associations that provided for the mutual aid and protection of their members, and allowed for the maintenance of professional standards. The growth of independent guilds was furthered by the fact that surplus was not a result of domestic craft production but resulted primarily from international trading; the government left working people to govern themselves, much as shepherds of tribal confederacies were left alone by their leaders. In the multiplicity of small-scale local egalitarian or quasi-egalitarian organizations for fellowship, worship, and production that flourished in this laissez-faire environment, individuals could interact

- following are true of the Middle Eastern craft guilds EXCEPT:
- A. The guilds were created to support workers and to uphold principles of high-quality craft production
 - B. Each guild was very large and included members from a broad geographic area
 - C. The leaders of the guilds were chosen by popular vote
 - D. All guild members were treated as equals.

6. The word consensus in the passage is closest in meaning to
- A. Authority
 - B. Responsibility
 - C. Custom
 - D. Agreement

Paragraph 4

7. According to paragraph 4, which of the following was NOT necessary for success in the Mercantile economy?
- A. Good business sense
 - B. Reliable associates
 - C. Family wealth
 - D. Constant effort

8. Which of the sentences below best expresses the essential information in the highlighted Sentence in the passage? Incorrect choices change the meaning in important ways or Leave out essential information.

- A. Tribespeople were comfortable forming personal relationships with merchants, Who, like them, were bound by their promises to one another.
- B. Because trade was not formally regulated, merchants were careful about whom they trusted and often conducted business with people they knew personally.
- C. While trade among merchants relied somewhat on regulation, among tribes people trade was based on personal relationships and careful character

with one another within a community of harmony and ideological equality, following their own popularly elected leaders and governing themselves by shared consensus while minimizing distinctions of wealth and power.

The mercantile economy was also characterized by a peculiar moral stance that is typical of people who live by trade—an attitude that is individualistic, calculating, risk taking, and adaptive to circumstances. As among tribespeople, personal relationships and a careful weighing of character have always been crucial in a mercantile economy with little regulation, where one's word is one's bond and where informal ties of trust cement together an international trade network. Nor have merchants and artisans ever had much tolerance for aristocratic professions of moral superiority, favoring instead an egalitarian ethic of the open market, where steady hard work, the loyalty of one's fellows, and entrepreneurial skill make all the difference. And, like the pastoralists, Middle Eastern merchants and artisans unhappy with their environment could simply pack up and leave for greener pastures—an act of self-assertion wholly impossible in most other civilizations throughout history.

Dependence on long-distance trade also meant that the great empires of the Middle East were built both literally and figuratively on shifting sand. The central state, though often very rich and very populous, was intrinsically fragile, since the development of new international trade routes could undermine the monetary base and erode state power, as occurred when European seafarers circumvented Middle Eastern merchants after Vasco da Gama's

- evaluation.
- D. Because tribespeople were bound only by their promises to one another, personal relationships were formed only after careful weighing of character.
9. The word ethic in the passage is closest in meaning to
- A. set of moral principles
 - B. division of labors
 - C. economic system
 - D. test of character
10. According to paragraph 4, what choice did Middle Eastern merchants and artisans have that many other people have not had?
- A. If they were unhappy in the mercantile environment, they could draw on personal connections to find a different kind of work.
 - B. They were allowed to assert their opinions without having to listen to aristocratic professions of moral superiority.
 - C. Following the example of the pastoralists, they could demand, and receive, better working conditions
 - D. If they didn't like environment, they could move somewhere else.

Paragraph 5

11. The word intrinsically in the passage is closest in meaning to
- A. fundamentally
 - B. Surprisingly
 - C. Consequently
 - D. Particularly
12. In paragraph 5, why does the author mention the new trade route opened up by Vasco da Gama's fifteenth-century voyage around Africa?
- A. To provide evidence that European seafarers took every opportunity to bypass Middle Eastern merchants

voyage around Africa in the late fifteenth-century opened up a southern route. The ecology of the region also permitted armed predators to prowl the surrounding barrens, which were almost impossible for a state to control. Peripheral peoples therefore had a great advantage in their dealings with the center, making government authority insecure and anxious.

- B. To present an instance in which Middle Eastern states lost money and power because of their reliance on long-distance trade
- C. To argue this new route became necessary when European seafarers wanted to avoid Middle Eastern states whose central power had begun to erode
- D. To explain how da Gama helped European traders avoid the dangerous predators prowling the areas surrounding Middle Eastern cities

13. Look at the four squares █ that indicate where the following sentence could be added to the passage.

For one thing, it created a demand for finished goods to be sold both locally and abroad.

Where would the sentence best fit?

14.

Since ancient times, reliance on trade has shaped the culture and organizational structure of Middle Eastern societies

Answer Choices

- Persian and Arabian merchants traveled great distances to sell their finished goods at the marketplaces of ancient Sumeria.
- Revenue from trade was merchants traveled great distances to sell their finished goods at the marketplaces of ancient Sumeria.
- Revenue from trade was unevenly distributed, causing Middle Eastern societies to be characterized by growing distinctions in wealth and power.
- Qualities that were valued in the

Reliance on trade had several important consequences. █ Production was generally in the hands of skilled individual artisans doing piecework under the tutelage of a master who was also the shop owner. █ In these shops differences of rank were blurred as artisans and masters labored side by side in the same modest establishment, were usually members of the same guild and religious sect, lived in the same neighborhoods, and often had assumed (or real) kinship relationships. █ The worker was bound to the master by a mutual contract that either one could repudiate, and the relationship was conceptualized as one of partnership. █

一想到新托福，就想到咱老无。

<http://www.ibtsat.com>

mercantile economy

included individualism, hard work, loyalty, and the willingness to take risks.

- As production increased, centralized control over production also increased, leading in turn to more-centralized control over fellowship and worship.
- Crafts were produced by skilled artisans working in close, egalitarian relationships with their masters and other fellow guild members.
- The stability of Middle Eastern governments was threatened by their lack of control over international trade patterns and over their own peripheral territories.

paragraph 1

1. The phrase interplay in the passage is closest in meaning to

- A. Sequence
- B. Interpretation
- C. requirement
- D. interaction

2. According to paragraph 1, what pattern did scientists notice when the known elements were written in order of increasing atomic mass?

- A. The elements of the group of alkali metals were the first elements in the order of increasing atomic mass.
- B. Repetition of the same atomic masses for elements in different groups appeared.
- C. Elements with similar chemical properties appeared in the listing at regular intervals.
- D. Elements were chemically most similar to those just before and after them in the order.

Development of the Periodic Table

The periodic table is a chart that reflects the periodic recurrence of chemical and physical properties of the elements when the elements are arranged in order of increasing atomic number (the number of protons in the nucleus). It is a monumental scientific achievement, and its development illustrates the essential interplay between observation, prediction, and testing required for scientific progress. In the 1800's scientists were searching for new elements. By the late 1860's more than 60 chemical elements had been identified, and much was known about their descriptive chemistry. Various proposals were put forth to arrange the elements into groups based on similarities in chemical and physical properties. The next step was to recognize a connection between group properties (physical or chemical similarities) and atomic mass

paragraph 2

3. In paragraph 2, what is the author's purpose in presenting the information about the decision by Meyer and Mendeleev to leave gaps in the periodic table?
- A. To illustrate their confidence that the organizing principles of the periodic table would govern the occurrence of all chemical elements
 - B. To indicate that some of their analyses of periodic physical and chemical properties were later found to be wrong
 - C. To support the idea that they were unwilling to place new elements in the periodic table
 - D. To indicate how they handled their disagreement about where to place new elements
4. What reason does the author provide for the claim that 'Mendeleev was bolder than Meyer'?
- A. Mendeleev corrected incorrect information Meyer had proposed.
 - B. Mendeleev assumed that some information believed to be true about the elements was incorrect.
 - C. Mendeleev argued that Meyer had not left enough gaps in the periodic table.
 - D. Mendeleev realized that elements were not ordered by atomic mass in the periodic table.
5. According to paragraph 2, why did Mendeleev suggest changing the atomic mass of indium?
- A. Because indium did not fit into the periodic table in the place predicted by its atomic mass
 - B. Because there was experimental evidence that the atomic mass that had been assigned

(the measured mass of an individual atom of an element). When the elements known at the time were ordered by increasing atomic mass, it was found that successive elements belonged to different chemical groups and that the order of the groups in this sequence was fixed and repeated itself at regular intervals. Thus when the series of elements was written so as to begin a new horizontal row with each alkali metal, elements of the same groups were automatically assembled in vertical columns in a periodic table of the elements. This table was the forerunner of the modern table.

When the German chemist Lothar Meyer and (independently) the Russian Dmitry Mendeleev first introduced the periodic table in 1869-70, one-third of the naturally occurring chemical elements had not yet been discovered. Yet both chemists were sufficiently farsighted to leave gaps where their analyses of periodic physical and chemical properties indicated that new elements should be located. Mendeleev was bolder than Meyer and even assumed that if a measured atomic mass put an element in the wrong place in the table, the atomic mass was wrong. In some cases this was true. Indium, for example, had previously been assigned an atomic mass between those of arsenic and selenium. Because there is no space in the periodic table between these two elements, Mendeleev suggested that the atomic mass of indium be changed to a completely different value, where it would fill an empty space between cadmium and tin. In fact, subsequent work has shown that in a periodic table, elements should not be ordered strictly by atomic mass. For example, tellurium comes before iodine in the periodic table, even though its atomic

- to indium was incorrect
- C. Because there was an empty space between cadmium and tin in the periodic table
- D. Because the chemical properties of indium were similar to those of arsenic and selenium
6. It can be inferred from paragraph 2 that tellurium comes before iodine in the periodic table even though tellurium's atomic mass is slightly greater because
- A. iodine is less common than tellurium
- B. both iodine and tellurium have no isotopes
- C. the chemical behavior of tellurium is highly variable
- D. the atomic number of tellurium is smaller than that of iodine
7. The phrase **abundance** in the passage is closest in meaning to
- weight
requirement
plenty
sequence

paragraph 3

8. The phrase **analogous to** in the passage is closest in meaning to
- predicted by
expected of
similar
superior
9. Paragraph 3 suggests that Mendeleyev predicted the properties of eka-aluminum on the basis of
- A. the atomic mass of aluminum
- B. the position of the gap in the periodic table that eka-aluminum was predicted to fill
- C. the similarity of eka-aluminum to the other five missing elements
- D. observation of the properties of gallium

mass is slightly greater. Such anomalies are due to the relative **abundance** of the "isotopes" or varieties of each element. All the isotopes of a given element have the same number of protons, but differ in their number of neutrons, and hence in their atomic mass. The isotopes of a given element have the same chemical properties but slightly different physical properties. We now know that atomic number (the number of protons in the nucleus), not atomic mass number (the number of protons and neutrons), determines chemical behavior.

Mendeleyev went further than Meyer in another respect: he predicted the properties of six elements yet to be discovered. For example, a gap just below aluminum suggested a new element would be found with properties **analogous to** those of aluminum. Mendeleyev designated this element "eka-aluminum" (eka is the Sanskrit word for "next") and predicted its properties. Just five years later an element with the proper atomic mass was isolated and named gallium by its discoverer. The close correspondence between the observed properties of gallium and Mendeleyev's predictions for eka-aluminum lent strong support to the periodic law. Additional support came in 1885 when eka-silicon, which had also been described in advance by Mendeleyev, was discovered and named germanium.

The structure of the periodic table appeared to limit the number of possible elements. It was therefore quite surprising when John William Strutt, Lord Rayleigh, discovered a gaseous element in 1894 that did not fit into the previous classification scheme. A century earlier, Henry Cavendish had noted the existence of a

10. It can be inferred from paragraph 3 that the significance of the discovery of gallium was that it supported which of the following?

- A. The idea that aluminum was correctly placed in the periodic table
- B. Mendeleev's prediction that eka-silicon would be discovered next
- C. The organizing principle of the periodic table
- D. The idea that unknown elements existed

paragraph 4

11. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Ramsay found evidence of helium in the spectrum of sunlight before he discovered that the element was also contained in natural gas deposits on Earth.
- B. Ramsay thought he had discovered a new element present in natural gas deposits, but he was wrong since that element had been previously observed elsewhere on Earth.
- C. After Ramsay had discovered a new element, called helium, in natural gas deposits on Earth, he also found evidence of its presence in the Sun.
- D. Ramsay later discovered that helium, an element that was already known to be present in the Sun, was also present in natural gas deposits on Earth.

12. The word postulated in the passage is closest in meaning to

- A. hypothesized
- B. discovered
- C. reported

residual gas when oxygen and nitrogen are removed from air, but its importance had not been realized. Together with William Ramsay, Rayleigh isolated the gas (separating it from other substances into its pure state) and named it argon. Ramsay then studied a gas that was present in natural gas deposits and discovered that it was helium, an element whose presence in the Sun had been noted earlier in the spectrum of sunlight but that had not previously been known on Earth. Rayleigh and Ramsay postulated the existence of a new group of elements, and in 1898 other members of the series (neon, krypton, and xenon) were isolated.

The periodic table is a chart that reflects the periodic recurrence of chemical and physical properties of the elements when the elements are arranged in order of increasing atomic number (the number of

D. generated

13 □ Look at the four squares █ that indicate where the following sentence could be added to the passage.

it was a natural idea to break up the series of elements at the points where the sequence of chemical groups to which the elements belonged began to repeat itseM-

Where would the sentence best fit?

14.

To review passage. Click View Text

The periodic table introduced by Meyer and Mendeleyev was the forerunner of the modern table of elements.

- Lord Rayleigh provided evidence that the structure of the periodic table limited the potential number of elements.
- Mendeleyev and Meyer organized the known elements into a chart that revealed periodic recurrences of chemical and physical properties.
- Mendeleyev's successful prediction of the properties of then- unknown elements lent support to the acceptance of the periodic law.
- Ramsay and Lord Rayleigh challenged the importance of the chemical research that Henry Cavendish had done a century earlier.
- Isotopes of a given element have exactly the same physical properties, but their chemical properties are slightly different
- In the 1890's, Ramsay and Lord Rayleigh isolated argon and proposed the existence of a new series of elements.

protons in the nucleus). It is a monumental scientific achievement, and its development illustrates the essential **interplay** between observation, prediction, and testing required for scientific progress. In the 1800's scientists were searching for new elements. By the late 1860's more than 60 chemical elements had been identified, and much was known about their descriptive chemistry. Various proposals were put forth to arrange the elements into groups based on similarities in chemical and physical properties. █ The next step was to recognize a connection between group properties (physical or chemical similarities) and atomic mass (the measured mass of an individual atom of an element). █ When the elements known at the time were ordered by increasing atomic mass, it was found that successive elements belonged to different chemical groups and that the order of the groups in this sequence was fixed and repeated itself at regular intervals. █ Thus when the series of elements was written so as to begin a new horizontal row with each alkali metal, elements of the same groups were automatically assembled in vertical columns in a periodic table of the elements. █ This table was the forerunner of the modern table.

Jovian:

1. According to the passage, each of the following statements comparing terrestrial planets with Jovian planets is true EXCEPT:
 - A. Terrestrial planets are closer to the Sun than Jovian planets.
 - B. Terrestrial planets have smaller diameters than Jovian planets.
 - C. Terrestrial planets have smaller masses than Jovian planets.
 - D. Terrestrial planets travel in a different direction than Jovian planets do.

Paragraph 4

2. The word markedly in the passage is closest in meaning to

- A. essentially
- B. typically
- C. consistently
- D. noticeably

3. Paragraph 4 mentions which of the following as a reason why terrestrial planets are dense?

- A. They are made up of three groups of substances.
- B. They are composed mainly of rocky and metallic materials.
- C. They contain more ice than Jovian planets.
- D. They contain relatively small amounts of water.

4. Paragraph 4 supports each of the following statements about Saturn EXCEPT:

- A. It is less dense than any of the terrestrial planets
- B. It contains no rocky material.
- C. It contains ices.
- D. It contains a large percentage of gases.

Planets in Our Solar System

The Sun is the hub of a huge rotating system consisting of nine planets, their satellites, and numerous small bodies, including asteroids, comets, and meteoroids. An estimated 99.85 percent of the mass of our solar system is contained within the Sun, while the planets collectively make up most of the remaining 0.15 percent. The planets, in order of their distance from the Sun, are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. Under the control of the Sun's gravitational force, each planet maintains an elliptical orbit and all of them travel in the same direction.

The planets in our solar system fall into two groups: the terrestrial (Earth-like) planets (Mercury, Venus, Earth, and Mars) and the Jovian (Jupiter-like) planets (Jupiter, Saturn, Uranus, and Neptune). Pluto is not included in either category, because its great distance from Earth and its small size make this planet's true nature a mystery.

The most obvious difference between the terrestrial and the Jovian planets is their size. The largest terrestrial planet, Earth has a diameter only one quarter as great as the diameter of the smallest Jovian planet, Neptune, and its mass is only one seventeenth as great. Hence, the Jovian planets are often called giants. Also, because of their relative locations, the four Jovian planets are known as the outer planets, while the terrestrial planets are known as the inner planets. There appears to be a correlation between the positions of these planets and their sizes.

Other dimensions along which the two

Paragraph 5

5. The word meager in the passage is closest in meaning to

- A. rich
- B. thin
- C. unique
- D. complex

6. According to paragraph 5, which of the following statements is true of both Jovian and terrestrial planets?

- A. The thicker the atmosphere, the smaller the planet's mass
- B. The more varied the gases in the atmosphere, the higher the temperature
- C. The higher the surface gravity, the higher the escape velocity
- D. The less the atmosphere contributes to the total mass, the lower the temperature

7. According to paragraph 5, what is a major reason that Jovian planets have much thicker atmospheres than terrestrial planets do?

- A. Jovian planets have lower surface gravities.
- B. Jovian planets have lower temperatures.
- C. Jovian planets have lower escape velocities.
- D. Jovian planets' gas molecules have higher average speeds.

8. Paragraph 5 supports which of the following statements about the ability of planets to retain gases?

- A. More-massive planets are less able to retain gases than less-massive ones.
- B. Planets are more likely to retain heavy gases than light gases.
- C. Jovian planets are unlikely to retain the lightest gases.
- D. Only terrestrial planets have been able to retain carbon dioxide.

groups differ markedly are density and composition. The densities of the terrestrial planets average about 5 times the density of water, whereas the Jovian planets have densities that average only 1.5 times the density of water. One of the outer planets, Saturn, has a density of only 0.7 that of water, which means that Saturn would float in water. Variations in the composition of the planets are largely responsible for the density differences.

■The substances that make up both groups of planets are divided into three groups—gases, rocks, and ices—based on their melting points. ■The terrestrial planets are mostly rocks: dense rocky and metallic material, with minor amounts of gases. ■The Jovian planets, on the other hand, contain a large percentage of the gases hydrogen and helium, with varying amounts of ices: mostly water, ammonia, and methane ices. ■

The Jovian planets have very thick atmospheres consisting of varying amounts of hydrogen, helium, methane, and ammonia. By comparison, the terrestrial planets have meager atmospheres at best. A planet's ability to retain an atmosphere depends on its temperature and mass. Simply stated, a gas molecule can "evaporate" from a planet if it reaches a speed known as the escape velocity. For Earth, this velocity is 11 kilometers per second. Any material, including a rocket, must reach this speed before it can leave Earth and go into space. The Jovian planets, because of their greater masses and thus higher surface gravities, have higher escape velocities (21-60 kilometers per second) than the terrestrial planets. Consequently, it is more difficult for gases to "evaporate" from them. Also, because the molecular motion

Paragraph 6

9. In calling the cloud of gas and dust from which the Sun and all the planets are thought to have condensed "primordial," the author means that the cloud was

- A. immense in size
- B. composed of similar particles
- C. present at the very beginning of our solar system's formation
- D. from a great variety of different materials

10. The word eventually in the passage is closest in meaning to

- A. overtime
- B. long ago
- C. simply
- D. certainly

11. According to paragraph 6, what is a possible explanation for the lack of light gases and ices on terrestrial planets?

- A. The location of terrestrial planets caused them to lose some of the materials they once contained.
- B. Terrestrial planets were formed much later than Jovian planets.
- C. The composition of terrestrial planets was different from that of Jupiter.
- D. Terrestrial planets were formed out of different material than the Sun was.

12. Look at the four squares █ that indicate where the following sentence could be added to the passage.

This explains their relatively low densities.

Where would the sentence best fit?

13.

To review passage. Click View Text

Answer Choices

- 1. Have relatively small sizes

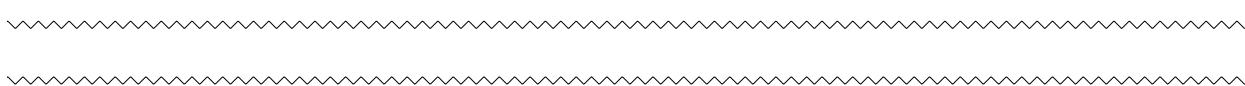
of a gas depends on temperature, at the low temperatures of the Jovian planets even the lightest gases are unlikely to acquire the speed needed to escape. On the other hand, a comparatively warm body with a small surface gravity, like Earth's moon, is unable to hold even the heaviest gas and thus lacks an atmosphere. The slightly larger terrestrial planets Earth, Venus, and Mars retain some heavy gases like carbon dioxide, but even their atmospheres make up only an infinitesimally small portion of their total mass.

The orderly nature of our solar system leads most astronomers to conclude that the planets formed at essentially the same time and from the same material as the Sun. It is hypothesized that the primordial cloud of dust and gas from which all the planets are thought to have condensed had a composition somewhat similar to that of Jupiter. However, unlike Jupiter, the terrestrial planets today are nearly void of light gases and ices. The explanation may be that the terrestrial planets were once much larger and richer in these materials but eventually lost them because of these bodies' relative closeness to the Sun, which meant that their temperatures were relatively high.

2. Are grouped in the same category as Pluto
3. Contain relatively high proportions of ices
4. Have relatively high temperatures
5. Have densities that are generally lower than the density of water
6. Have relatively high escape velocities
7. Have a composition closer to that of the cloud from which they condensed

Terrestrial:

Jovian:



TPO 17

paragraph 1

1. The word impetus in the passage is closest

in meaning to

return

opportunity

stimulus

obstacle

2. According to paragraph 1 why was it necessary to find anew way for European merchants to reach the East?

People in China were finally ready to trade with Europeans

The European economy was failing because there was no trade with the East

Traditional ways of trading with the East had become very costly

Commercial routes over land had become blocked because of political events

paragraph 2

3. According to paragraph 2 what was the main difficulty Europeans had to overcome in order to develop a new way of trading with the East?

Europe's Early Sea Trade with Asia

In the fourteenth century, a number of political developments cut Europe's overland trade routes to southern and eastern Asia, with which Europe had had important and highly profitable commercial ties since the twelfth century. This development, coming as it did when the bottom had fallen out of the European economy, provided an impetus to a long-held desire to secure direct relations with the East by establishing a sea trade. Widely reported, if somewhat distrusted, accounts by figures like the famous traveler from Venice. Marco Polo, of the willingness of people in China to trade with Europeans and of the immensity of the wealth to be gained by such contact made the idea irresistible. Possibilities for trade seemed promising, but no hope existed for maintaining the traditional

Europeans were unwilling to invest in large-scale commercial ventures

Europeans lacked the means for navigating long distances across oceans

Europeans were unwilling to experiment with new business techniques

Europeans lacked knowledge about the commercial methods of other peoples

4. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

The high cost to investors of developing trade by sea between East and West indicates the great size of the profits that such trade could produce

The profits that could be created by sea trade between East and West were immense compared with the investment required to develop such trade

The increase in commercial activity by using sea routes reflects the importance trade between East and West had for investors seeking great profits

Because people made large investments in sea commerce between East and West, they expected to make immense profits

5. The word dramatically in the passage is closest in meaning to

artificially

greatly

immediately

regularly

6. It can be inferred from paragraph 2 that spices from Asia were desirable in Europe in the Middle Ages because they were easily transported in large quantities could not be produced in European countries could be traded for products such as perfumes and medicines

were expected to increase in value over time

routes over land A new way had to be found.

The chief problem was technological: How were the Europeans to reach the East? Europe's maritime tradition had developed in the context of easily navigable seas—the Mediterranean, the Baltic, and, to a lesser extent, the North Sea between England and the Continent—not of vast oceans. New types of ships were needed, new methods of finding one's way, new techniques for financing so vast a scheme. The sheer scale of the investment it took to begin commercial expansion at sea reflects the immensity of the profits that such East-West trade could create. ■ Spices were the most sought-after commodities. ■ Spices not only dramatically improved the taste of the European diet but also were used to manufacture perfumes and certain medicines. ■ But even high-priced commodities like spices had to be transported in large bulk in order to justify the expense and trouble of sailing around the African continent all the way to India and China. ■

The principal seagoing ship used throughout the Middle Ages was the galley, a long, low ship fitted with sails but driven primarily by oars. The largest galleys had as many as 50 oarsmen. Since they had relatively shallow hulls, they were unstable when driven by sail or when on rough water: hence they were unsuitable for the voyage to the East. Even if they hugged the African coastline, they had little chance of surviving a crossing of the Indian Ocean. Shortly after 1400, shipbuilders began developing a new type of vessel properly designed to operate in rough, open water: the caravel.

paragraph 3

7. According to paragraph 3, all of the following statements comparing the caravel with the galley are true EXCEPT

The caravel had fewer masts than the galley.

The caravel had a wider hull than the galley.

The caravel could carry more cargo than the galley.

The caravel was more stable in rough water than the galley.

8. According to paragraph 3, what did the lateen sail contribute to the caravel as a sailing ship?

It provided stability for the front part of the ship

It made it possible for the hull to be wider and deeper

It added considerably to the speed of the wind-driven ship.

It improved the capacity of the ship to be guided.

paragraph 4

9. Why does the author include the information that Western Europeans had developed and put into use the magnetic compass □

To provide an example of an instrument that was developed after caravels had begun traveling across oceans

To provide an example of an improvement that resulted directly from the invention of the astrolabe

To identify one of the technological advances that made sea trade with the East possible

To explain how the problem of determining longitude was solved

10. The word refined in the passage is closest in meaning to

completed

improved

It had a wider and deeper hull than the galley and hence could carry more cargo: increased stability made it possible to add multiple masts and sails. In the largest caravels, two main masts held large square sails that provided the bulk of the thrust driving the ship forward, while a smaller forward mast held a triangular-shaped sail, called a lateen sail, which could be moved into a variety of positions to maneuver the ship.

The astrolabe had long been the primary instrument for navigation, having been introduced in the eleventh century. It operated by measuring the height of the Sun and the fixed stars: by calculating the angles created by these points, it determined the degree of latitude at which one stood (The problem of determining longitude, though, was not solved until the eighteenth century.) By the early thirteenth century, Western Europeans had also developed and put into use the magnetic compass, which helped when clouds obliterated both the Sun and the stars. Also beginning in the thirteenth century, there were new maps refined by precise calculations and the reports of sailors that made it possible to trace one's path with reasonable accuracy. Certain institutional and practical norms had become established as well. A maritime code known as the Consulate of the Sea, which originated in the western Mediterranean region in the fourteenth century, won acceptance by a majority of sea goers as the normative code for maritime conduct; it defined such matters as the authority of a ship's officers, protocols of command, pay structures, the rights of sailors, and the rules of engagement when ships met one another on the sea-lanes. Thus by about 1400 the

drawn

checked

11. The word **norms** in the passage is closest in meaning to

purposes

skills

activities

rules

12. According to paragraph 4 which of the following is true of the maritime code developed in Europe in the fourteenth century?

It mapped out lanes in the seas for trading ships to follow

It defined the ways in which people should behave at sea

It replaced an earlier code that could not be adapted to the sea trade with the East.

It gave instructions on how to navigate a ship

13. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

They were highly valued for a couple of reasons.

Where would the sentence best fit?

14.

Because land routes to Asia had been cut off in the fourteenth century, Europeans had to find a new way to trade with Asia.

- Reports by travelers indicated that people in Asia were interested in renewing trade with Europeans.
- For trade in Asian goods such as spices to be profitable, these items needed to be transported in large quantities by sea
- Wind-driven caravels were developed to carry cargo across the oceans.
- Europeans wanted to import spices from Asia in order to improve the taste of food and to make perfumes and medicines
- European galleys were able to bring

key elements were in place to enable Europe to begin its seaward adventure.

The chief problem was technological: How were the Europeans to reach the East? Europe's maritime tradition had developed in the context of easily navigable seas—the Mediterranean, the Baltic, and, to a lesser extent, the North Sea between England and the Continent—not of vast oceans. New types of ships were needed, new methods of finding one's way, new techniques for financing so vast a scheme. The sheer scale of the investment it took to begin commercial expansion at sea reflects the immensity of the profits that such East-West trade could create. ■Spices were the most sought-after commodities. ■Spices not only dramatically improved the taste of the European diet but also were used to manufacture perfumes and certain medicines. ■But even high-priced

- Asian goods across the Indian Ocean and around the African coastline.
- The development of maps, navigational instruments and a maritime code of conduct provided crucial elements for longdistance navigation

commodities like spices had to be transported in large bulk in order to justify the expense and trouble of sailing around the African continent all the way to India and China. ■

1. The phrase conspicuous in the passage is closest in meaning to

common

noticeable

different

colorful

paragraph 2

2. According to paragraph 2 what is problematic about an animal's sending visual signals to members of its own species?

signs that make an animal visible to its species also make it visible to predators
an animal that changes color to avoid predators can confuse members of its species
changing light may require an animal to move beyond the visual range of other members

the animal may mistakenly signal aggression when it meant to signal readiness to mate.

3. The word signal in the passage is closest in meaning to

change

imitate

communicate

hide

4. According to paragraph 2 all of the following are reasons amphibians and reptiles change color EXCEPT

changing seasons

to signal others of their species

to match the light

Animal Signals in the Rain Forest

The daytime quality of light in forests varies with the density of the vegetation, the angle of the Sun, and the amount of cloud in the sky. Both animals and plants have different appearances in these various lighting conditions. A color or pattern that is relatively indistinct in one kind of light may be quite conspicuous in another.

In the varied and constantly changing light environment of the forest, an animal must be able to send visual signals to members of its own species and at the same time avoid being detected by predators. An animal can hide from predators by choosing the light environment in which its pattern is least visible. This may require moving to different parts of the forest at different times of the day or under different weather conditions, or it may be achieved by changing color according to the changing light conditions. Many species of amphibians (frogs and toads) and reptiles (lizards and snakes) are able to change their color patterns to camouflage themselves. Some also signal by changing color. The chameleon lizard has the most striking ability to do this. Some chameleon species can change from a rather dull appearance to a full riot of carnival colors in seconds. By this means, they signal their level of aggression or readiness to mate.

Other species take into account the

to hide from predators

paragraph 3

5. According to paragraph 3, butterflies move into spots of sunlight in order to warm their wings in order to open them compete with each other take advantage of favorable light conditions on the forest floor imitate birds of paradise

paragraph 4

6. According to paragraph 4, what is true about light that reaches ground level?
It reveals only the yellow and green colors animals use to signal each other.
It reflects the yellow and green colors to make the floor as bright as sunshine
It camouflages animals whose natural colors are yellow and green
It consists mostly of yellow-to-green wavelengths

7. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

When an animal is signaling in an area with green-to-yellow lighting conditions, its signal will not be visible if the background is brightly lit

In the lowest levels of the forest, an animal's signals are not easily seen unless there is a yellowish or greenish background

In the green-to-yellow lighting conditions at the lowest levels of the forest, only signals that are themselves green or yellow will be bright enough to be seen in most areas.

Although green and yellow would be the brightest colors near the forest floor, these colors would make poor signals whenever the forest background was also in the green-to-yellow range

8. The word inflating in the passage is closest in meaning to

changing conditions of light by performing their visual displays only when the light is favorable. A male bird of paradise may put himself in the limelight by displaying his spectacular plumage in the best stage setting to attract a female. Certain butterflies move into spots of sunlight that have penetrated to the forest floor and display by opening and closing their beautifully patterned wings in the bright spotlights. They also compete with each other for the best spot of sunlight.

Very little light filters through the canopy of leaves and branches in a rain forest to reach ground level—or close to the ground—and at those levels the yellow-to-green wavelengths predominate. A signal might be most easily seen if it is maximally bright. In the green-to-yellow lighting conditions of the lowest levels of the forest, yellow and green would be the brightest colors, but when an animal is signaling, these colors would not be very visible if the animal was sitting in an area with a yellowish or greenish background. The best signal depends not only on its brightness but also on how well it contrasts with the background against which it must be seen. In this part of the rain forest, therefore, red and orange are the best colors for signaling, and they are the colors used in signals by the ground-walking Australian brush turkey. This species, which lives in the rain forests and scrublands of the east coast of Australia, has a brown-to-black plumage with bare, bright-red skin on the head and neck and a neck collar of orange-yellow loosely hanging skin. During courtship and aggressive displays, the turkey enlarges its colored neck collar by inflating sacs in the neck region and then flings about a pendulous part of the

coloring

enlarging

loosening

heating

9. Which of the following can be inferred from paragraph 4 about yellow and green colors compared with red and orange colors at the bottom of the forest?

Yellow and green are better colors for signaling than red and orange colors.

Orange and red are brighter colors than yellow and green.

Yellow and green are likely to be more common in the background than red and orange

Orange and red colors do not contrast as well with the forest floor as yellow and green do

paragraph 5

10. What can be inferred from paragraph 5 about the less colorful birds and animals that inhabit the forest?

These species are less able to see color, and therefore they communicate with one another using nonvisual signals.

These species generally live in less densely wooded environments than more colorful birds and animals do.

The cries of these species do not carry as well over distances as the cries of more colorful birds and animals.

These species depend more on nonvisual signals for communication because they are less visible in their environment

11. The word impediment in the passage is closest in meaning to

obstruction

effort

delay

resistance

12. The word exploits in the passage is closest in meaning to

colored signaling apparatus as it utters calls designed to attract or repel. This impressive display is clearly visible in the light spectrum illuminating the forest floor.

Less colorful birds and animals that inhabit the rain forest tend to rely on forms of signaling other than the visual, particularly over long distances. The piercing cries of the rhinoceros hornbill characterize the Southeast Asian rain forest, as do the unmistakable calls of the gibbons. In densely wooded environments, sound is the best means of communication over distance because in comparison with light, it travels with little impediment from trees and other vegetation. In forests, visual signals can be seen only at short distances, where they are not obstructed by trees. The male riflebird exploits both of these modes of signaling simultaneously in his courtship display. The sounds made as each wing is opened carry extremely well over distance and advertise his presence widely. The ritualized visual display communicates in close quarters when a female has approached.

The daytime quality of light in forests varies with the density of the vegetation, the angle of the Sun, and the amount of cloud in the sky. Both animals and plants have different appearances in these various lighting conditions. A color or pattern that is relatively indistinct in one kind of light may be quite conspicuous in another.

一想到新托福，就想到咱老无。

<http://www.ibtsat.com>

- repeats
- makes use of
- increases the intensity of
- recognizes

13. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

There is also the long, rather terrifying call of the male orangutan, which carries over considerable distances to advertise his presence.

Where would the sentence best fit?

14.

In the rain forest, an animal must be able to send signals to members of its own species and at the same time avoid being detected by predators.

Less colorful birds and animals that inhabit the rain forest tend to rely on forms of signaling other than the visual, particularly over long distances.

■ The piercing cries of the rhinoceros hornbill characterize the Southeast Asian rain forest, as do the unmistakable calls of the gibbons. ■ In densely wooded environments, sound is the best means of communication over distance because in comparison with light, it travels with little impediment from trees and other vegetation. ■ In forests, visual signals can be seen only at short distances, where they are not obstructed by trees. ■ The male riflebird exploits both of these modes of signaling simultaneously in his courtship display. The sounds made as each wing is opened carry extremely well over distance and advertise his presence widely. The ritualized visual display communicates in close quarters when a female has approached.

Answer Choices

- Animals that have different predators at different times of day change color to avoid being detected
- To be noticed, an animal may draw attention to the contrast between its colors and the colors of its environment.
- Yellow and green are the most common colors found in the rainforest.
- To escape notice an animal may move or change color so that its color pattern is not visible
- Animals must have signals for aggression as well as to indicate readiness to mate
- An animal may use sound rather than color to attract attention, because sound signals are not hindered by light conditions

paragraph 1

1. Which of the following statements about commensalism can be inferred from paragraph 1?

It excludes interactions between more than two species.

It makes it less likely for species within a

Symbiotic Relationships

A symbiotic relationship is an interaction between two or more species in which one species lives in or on another species. There are three main types of symbiotic relationships: parasitism, commensalism,

community to survive.
Its significance to the organization of biological communities is small.
Its role in the structure of biological populations is a disruptive one

paragraph 2

2. The word **diverse** in the passage is closest in meaning to

- digests
- obtains
- controls
- discovers

3. According to paragraph 2 which of the following is true of the action of natural selection on hosts and parasites?

Hosts benefit more from natural selection than parasites do.

Both aggression in predators and defensive capacities in hosts are favored for species survival

The ability to make toxic chemicals enables a parasite to find and isolate its host

Larger size equips a parasite to prey on smaller host organisms.

paragraph 3

4. The word **devastated** in the passage is closest in meaning to

- influenced
- infected
- strengthened
- destroyed

5. Which of the following can be concluded from the discussion in paragraph 3 about the Australian rabbit population?

Human intervention may alter the host, the parasite, and the relationship between them
The risks of introducing outside organisms into a biological community are not worth the benefits.

Humans should not interfere in parasite relationships.

Organisms that survive a parasitic attack do so in spite of the natural selection process.

and mutualism. The first and the third can be key factors in the structure of a biological community; that is, all the populations of organisms living together and potentially interacting in a particular area.

Parasitism is a kind of predator-prey relationship in which one organism, the parasite, **derives** its food at the expense of its symbiotic associate, the host. Parasites are usually smaller than their hosts. An example of a parasite is a tapeworm that lives inside the intestines of a larger animal and absorbs nutrients from its host. Natural selection favors the parasites that are best able to find and feed on hosts. At the same time, defensive abilities of hosts are also selected for. As an example, plants make chemicals toxic to fungal and bacterial parasites, along with ones toxic to predatory animals (sometimes they are the same chemicals). In vertebrates, the immune system provides a multiple defense against internal parasites.

At times, it is actually possible to watch the effects of natural selection in host-parasite relationships. For example, Australia during the 1940 s was overrun by hundreds of millions of European rabbits. ■The rabbits destroyed huge expanses of Australia and threatened the sheep and cattle industries. In ■1950, myxoma virus, a parasite that affects rabbits, was deliberately introduced into Australia to control the rabbit population. ■Spread rapidly by mosquitoes, the virus **devastated** the rabbit population. ■The virus was less deadly to the offspring of surviving rabbits, however, and it caused less and less harm over the years. Apparently, genotypes (the genetic make-up of an organism) in the rabbit

6. According to paragraph 3, all of the following characterize the way natural selection stabilized the Australian rabbit population EXCEPT:

The most toxic viruses died with their hosts.
The surviving rabbits were increasingly immune to the virus.

The decline of the mosquito population caused the spread of the virus to decline.

Rabbits with specific genetic make-ups were favored

paragraph 4

7. The word inadvertently in the passage is closest in meaning to

indefensibly

substantially

unintentionally

partially

paragraph 5

8. According to paragraph 5, the relationship between legumes and bacteria benefits the soil by

adding enriching carbohydrates

speeding the decay of organic matter

destroying enzymes that pollute it

contributing nitrogen to it

9. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

The relationship between flowering plants and pollinators provides pollinators with food and flowers with efficient reproduction

In some cases birds obtain food from the seeds that are dispersed in the wind.

The wind not only helps the flowers distribute their seeds but enables birds to find more food.

Animals and insects are more effective in distributing pollen and seeds than the wind

population were selected that were better able to resist the parasite. Meanwhile, the deadliest strains of the virus perished with their hosts as natural selection favored strains that could infect hosts but not kill them. Thus, natural selection stabilized this host-parasite relationship.

In contrast to parasitism, in commensalism, one partner benefits without significantly affecting the other. Few cases of absolute commensalism probably exist, because it is unlikely that one of the partners will be completely unaffected. Commensal associations sometimes involve one species' obtaining food that is inadvertently exposed by another. For instance, several kinds of birds feed on insects flushed out of the grass by grazing cattle. It is difficult to imagine how this could affect the cattle, but the relationship may help or hinder them in some way not yet recognized.

The third type of symbiosis, mutualism, benefits both partners in the relationship. Legume plants and their nitrogen-fixing bacteria, and the interactions between flowering plants and their pollinators, are examples of mutualistic association. In the first case, the plants provide the bacteria with carbohydrates and other organic compounds, and the bacteria have enzymes that act as catalysts that eventually add nitrogen to the soil, enriching it. In the second case, pollinators (insects, birds) obtain food from the flowering plant, and the plant has its pollen distributed and seeds dispersed much more efficiently than they would be if they were carried by the wind only. Another example of mutualism would be the bull's horn acacia tree, which grows in Central and South America. The tree

10. According to paragraph 5, which of the following is NOT true of the relationship between the bull's horn acacia tree and the *Pseudomyrmex* ants?

Ants defend the host trees against the predatory actions of insects and animals.

The acacia trees are a valuable source of nutrition for the ants.

The ants enable the acacia tree to produce chemical defenses.

The ants protect the acacia from having to compete with surrounding vegetation

paragraph 6 The complex interplay of species in symbiotic relationships **highlights** an important point about communities: Their structure depends on a web of diverse connections among organisms.

11. The word **highlights** in the passage is closest in meaning to

defines

emphasizes

reflects

suggests

12. What is the main purpose of this passage?

To explain the concept of symbiosis by expanded descriptions of its principal types

To make a comparison between human relationships and symbiotic interactions in the natural world

To demonstrate the unforeseen benefits of natural processes that at first seem wholly destructive

To argue that parasitism is a problem that can be solved by scientific intervention

13. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

This massive population began a

provides a place to live for ants of the genus *Pseudomyrmex*. The ants live in large, hollow thorns and eat sugar secreted by the tree. The ants also eat yellow structures at the tip of leaflets: these are protein rich and seem to have no function for the tree except to attract ants. The ants benefit the host tree by attacking virtually anything that touches it. They sting other insects and large herbivores (animals that eat only plants) and even clip surrounding vegetation that grows near the tree. When the ants are removed, the trees usually die, probably because herbivores damage them so much that they are unable to compete with surrounding vegetation for light and growing space.

The complex interplay of species in symbiotic relationships **highlights** an important point about communities: Their structure depends on a web of **diverse** connections among organisms.

At times, it is actually possible to watch the effects of natural selection in host-parasite relationships. For example, Australia during the 1940's was overrun by hundreds of millions of European

century earlier as a mere twelve pairs of imported rabbits that reproduced quickly and developed into a major problem.

Where would the sentence best fit?

14.

Symbiotic relationships involve the interaction of two or more organisms acting as partner

Answer Choices

- Parasitic relationships involve the interplay of aggression by the parasite and resistance and adaptation by the host.
 - Mutualism ordinarily involves an interaction between two members of the same species
 - Mutualism is unique among symbiotic relationships in that it benefits both partners involved in the relationship.
 - Parasitic damage to Australian rabbits was never reversed because the rabbits were unable to adapt to the parasites attacks.
 - The rarity of commensal relationships stems from the difficulty of finding relationships that benefit one species without affecting the other
 - The structure of biological communities depends on the types of relationships that exist among the species within
-
-

rabbits. ■The rabbits destroyed huge expanses of Australia and threatened the sheep and cattle industries. In ■1950, myxoma virus, a parasite that affects rabbits, was deliberately introduced into Australia to control the rabbit population. ■Spread rapidly by mosquitoes, the virus devastated the rabbit population. ■The virus was less deadly to the offspring of surviving rabbits, however, and it caused less and less harm over the years. Apparently, genotypes (the genetic make-up of an organism) in the rabbit population were selected that were better able to resist the parasite. Meanwhile, the deadliest strains of the virus perished with their hosts as natural selection favored strains that could infect hosts but not kill them. Thus, natural selection stabilized this host-parasite relationship.

TPO 18

1. Paragraph 1 supports which of the following ideas about England and Germany?

- They were completely industrialized by the start of the nineteenth century.
- They possessed plentiful supplies of coal.
- They were overtaken economically by the Netherlands and Scandinavia during the early nineteenth century.
- They succeeded for the same reasons that

Industrialization in the Netherlands and Scandinavia

While some European countries, such as England and Germany, began to industrialize in the eighteenth century, the Netherlands and the Scandinavian countries of Denmark, Norway, and Sweden developed later. ■All four of these countries lagged considerably behind

the Netherlands and Scandinavia did.

2. Paragraph 2 suggests which of the following about the importance of population density in the industrialization of the Netherlands and Scandinavia?

It was a more important factor than population size.

It was more influential than the rate of population growth.

It was more important in the early stages than it was later.

It was not a significant factor.

3. According to paragraphs 2 and 3, which of the following contributed significantly to the successful economic development of the Netherlands and of Scandinavia?

The relatively small size of their populations

The rapid rate at which their populations were growing

The large amount of capital they had available for investment

The high proportion of their citizens who were educated

4. According to paragraph 4, because of their location the Netherlands and the Scandinavian countries had all of the following advantages when they began to industrialize EXCEPT

low-cost transportation of goods

access to fish

shipbuilding industrial

military control of the sea

5. The word “exceptional” in the passage is closest in meaning to

extraordinary

surprising

immediate

predictable

6. The word “abolished” in the passage is closest in meaning to

in the early nineteenth century.

■ However, they industrialized rapidly in the second half of the century, especially in the last two or three decades. ■ In view of their later start and their lack of coal—undoubtedly the main reason they were not among the early industrializers—it is important to understand the sources of their success. ■

All had small populations. At the beginning of the nineteenth century □ Denmark and Norway had fewer than 1 million people, while Sweden and the Netherlands had fewer than 2.5 million inhabitants. All exhibited moderate growth rates in the course of the century (Denmark the highest and Sweden the lowest), but all more than doubled in population by 1900. Density varied greatly. The Netherlands had one of the highest population densities in Europe, whereas Norway and Sweden had the lowest Denmark was in between but closer to the Netherlands.

Considering human capital as a characteristic of the population, however, all four countries were advantaged by the large percentages of their populations who could read and write. In both 1850 and 1914, the Scandinavian countries had the highest literacy rates in Europe, or in the world, and the Netherlands was well above the European average. This fact was of enormous value in helping the national economies find their niches in the evolving currents of the international economy.

Location was an important factor for all four countries. All had immediate access to the sea, and this had important implications for a significant international resource, fish, as well as for cheap

ended
raised
returned
lowered

7. According to paragraph 5, each of the following contributed positively to the industrialization of the Netherlands and Scandinavia EXCEPT

generally liberal trade policies
huge projects undertaken by the state
relatively uncorrupt governments
relatively little social or political disruption

8. The word “**progressive**” in the passage is closest in meaning to

rapid
partial
increasing
individual

9. The author includes the information that “a protectionist movement developed in Sweden” in order to

- support the claim that the political institutions of the four countries posed no significant barriers to industrialization or economic growth
- identify an exception to the general trend favoring liberal trade policy
- explain why Sweden industrialized less quickly than the other Scandinavian countries and the Netherlands
- provide evidence that agricultural reforms take place more quickly in countries that have a liberal trade policy than in those that do not

10. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

A. The early industrializes controlled most of

transport, merchant marines, and the shipbuilding industry. Each took advantage of these opportunities in its own way. The people of the Netherlands, with a long tradition of fisheries and mercantile shipping, had difficulty in developing good harbors suitable for steamships: eventually they did so at Rotterdam and Amsterdam, with **exceptional** results for transit trade with Germany and central Europe and for the processing of overseas foodstuffs and raw materials (sugar, tobacco, chocolate, grain, and eventually oil). Denmark also had an admirable commercial history, particularly with respect to traffic through the Sound (the strait separating Denmark and Sweden). In 1857, in return for a payment of 63 million kronor from other commercial nations, Denmark **abolished** the Sound toll dues the fees it had collected since 1497 for the use of the Sound. This, along with other policy shifts toward free trade, resulted in a significant increase in traffic through the Sound and in the port of Copenhagen.

The political institutions of the four countries posed no significant barriers to industrialization or economic growth. The nineteenth century passed relatively peacefully for these countries, with **progressive** democratization taking place in all of them. They were reasonably well governed, without notable corruption or grandiose state projects, although in all of them the government gave some aid to railways, and in Sweden the state built the main lines. As small countries dependent on foreign markets, they followed a liberal trade policy in the main, though a protectionist movement developed in Sweden. In Denmark and Sweden agricultural reforms took place gradually from the late eighteenth century through

the international economy, leaving these countries to stake out new areas of specialization along the margins.

B.Aided by their high literacy rates these countries were able to claim key areas of specialization within established international markets.

C.High literacy rates enabled these countries to take over international markets and adapt the international division of labor to suit their strengths.

D.The international division of labor established by the early industrializers was well suited to these countries, a key factor in their success.

11. According to paragraph 6, a major problem with depending heavily on international markets was that they lacked stability

were not well suited to agricultural products
were largely controlled by the early industrializers

led to slower growth of local industries

12. According to paragraph 6. what advantage could a country gain from being heavily involved in international commerce?

A steadily rising national income

Greater control over market fluctuations

High returns when things went well

A reduced need for imports

13. Look at the four squares █ that indicate where the following sentence could be added to the passage

During this period, Sweden had the highest rate of growth of output per capita of any country in Europe, and Denmark was second.

Where would the sentence best fit?

14.

Although the Netherlands and Scandinavia began to industrialize relatively late, they did so very successfully.

the first half of the nineteenth, resulting in a new class of peasant landowners with a definite market orientation.

The key factor in the success of these countries (along with high literacy, which contributed to it) was their ability to adapt to the international division of labor determined by the early industrializers and to stake out areas of specialization in international markets for which they were especially well suited. This meant a great dependence on international commerce, which had notorious fluctuations; but it also meant high returns to those factors of production that were fortunate enough to be well placed in times of prosperity. In Sweden exports accounted for 18 percent of the national income in 1870, and in 1913, 22 percent of a much larger national income. In the early twentieth century, Denmark exported 63 percent of its agricultural production: butter, pork products, and eggs. It exported 80 percent of its butter, almost all to Great Britain, where it accounted for 40 percent of British butter imports.

- Although these countries all started with small, uneducated populations, industrialization led to significant population growth and higher literacy rates.
- Because they all started with good harbors for steamships, these countries started with an important advantage **in** the competition for transit trade
- These countries were successful primarily because **their** high literacy rates helped them **fill** specialized market niches
- Thanks to their ready access to the sea, these countries enjoyed advantages in mercantile shipping, fishing, and shipbuilding
- These countries were helped by the fact that their governments were relatively stable and honest and generally supported liberal trade policies
- Because they were never fully dependent on international commerce, these countries were able to survive notorious fluctuations in international markets

-
1. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
- A. It is the conventional theory that when people are bored or sleepy, they often experience a drop in blood oxygen levels due to their shallow breathing
- B. The conventional theory is that people yawn when bored or sleepy because yawning raises blood oxygen levels, which in turn raises alertness
- C. According to conventional theory, yawning is more likely to occur when people are bored or sleepy than when they are alert and breathing deeply
- D. Yawning according to the conventional theory, is caused by boredom or lack of sleep and can be avoided through deeper breathing

The mystery of yawning

According to conventional theory, yawning takes place when people are bored or sleepy and serves the function of increasing alertness by reversing, through deeper breathing, the drop in blood oxygen levels that are caused by the shallow breathing that accompanies lack of sleep or boredom. Unfortunately, the few scientific investigations of yawning have failed to find any connection between how often someone yawns and how much sleep they have had or how tired they are. About the closest any research has come to supporting the tiredness theory is to confirm that adults yawn more often on weekdays than at weekends, and that school children yawn more frequently in their first year at primary school than they do in kindergarten.

2. In paragraph 1. what point does the author make about the evidence for the tiredness theory of yawning?

- A. There is no scientific evidence linking yawning with tiredness.
- B. The evidence is wide-ranging because it covers multiple age-groups.
- C. The evidence is reliable because it was collected over a long period of time.
- D. The evidence is questionable because the yawning patterns of children and adults should be different.

3. The word “flaw” in the passage is closest in meaning to

fault
aspect
confusion
mystery

4. In paragraph 2 why does the author note that there were physiological changes when subjects opened their mouths or breathed deeply?

- A. To present an argument in support of the tiredness theory
- B. To cast doubt on the reliability of the tests that measured heart rate, muscle tension and skin conductance
- C. To argue against the hypothesis that yawning provides a special way to improve alertness or raise physiological activity
- D. To support the idea that opening the mouth or breathing deeply can affect blood oxygen levels

5. The word “triggered” in the passage is closest in meaning to

removed
followed
increased
caused

Another flaw of the tiredness theory is that yawning does not raise alertness or physiological activity, as the theory would predict. When researchers measured the heart rate, muscle tension and skin conductance of people before, during and after yawning, they did detect some changes in skin conductance following yawning, indicating a slight increase in physiological activity. However, similar changes occurred when the subjects were asked simply to open their mouths or to breathe deeply. Yawning did nothing special to their state of physiological activity. Experiments have also cast serious doubt on the belief that yawning is triggered by a drop in blood oxygen or a rise in blood carbon dioxide. ■ Volunteers were told to think about yawning while they breathed either normal air, pure oxygen, or an air mixture with an above-normal level of carbon dioxide. ■ If the theory was correct, breathing air with extra carbon dioxide should have triggered yawning, while breathing pure oxygen should have suppressed yawning. ■ In fact, neither condition made any difference to the frequency of yawning, which remained constant at about 24 yawns per hour ■ Another experiment demonstrated that physical exercise, which was sufficiently vigorous to double the rate of breathing, had no effect on the frequency of yawning. Again the implication is that yawning has little or nothing to do with oxygen.

A completely different theory holds that yawning assists in the physical development of the lungs early in life, but has no remaining biological function in adults. It has been suggested that yawning and hiccupping might serve to clear out the fetus's airways. The lungs of a fetus secrete a liquid that mixes with its

6. Paragraph 2 answers all of the following questions about yawning EXCEPT

- A. Does yawning increase alertness or physiological activity?
- B. Does thinking about yawning increase yawning over not thinking about yawning?
- C. Does the amount of carbon dioxide and oxygen in the air affect the rate at which people yawn?
- D. Does the rate of breathing affect the rate at which people yawn?

7. The word “periodically” in the passage is closest in meaning to
continuously
quickly
regularly
carefully

8. According to the developmental theory of yawning presented in paragraph 3. what is the role of yawning?

- A. It causes hiccups which aid in the development of the lungs.
- B. It controls the amount of pressure the lungs place on other developing organs
- C. It prevents amniotic fluid from entering the lungs.
- D. It removes a potentially harmful fluid from the lungs

9. Paragraph 3 supports which of the following statements about the developmental theory of yawning?

- A. The theory is attractive because it explains yawning from the perspective of Darwinian evolution
- B. The theory is unsatisfactory because it cannot explain the lung deformities of infants
- C. The theory is questionable because it does not explain why a useless and inconvenient behavior would continue into adulthood

mother's amniotic fluid Babies with congenital blockages that prevent this fluid from escaping from their lungs are sometimes born with deformed lungs. It might be that yawning helps to clear out the lungs by periodically lowering the pressure in them. According to this theory, yawning in adults is just a developmental fossil with no biological function. But, while accepting that not everything in life can be explained by Darwinian evolution, there are sound reasons for being skeptical of theories like this one, which avoid the issue of what yawning does for adults. Yawning is distracting, consumes energy and takes time. It is almost certainly doing something significant in adults as well as in fetuses. What could it be?

The empirical evidence, such as it is, suggests an altogether different function for yawning—namely, that yawning prepares us for a change in activity level. Support for this theory came from a study of yawning behavior in everyday life. Volunteers wore wrist-mounted devices that automatically recorded their physical activity for up to two weeks: the volunteers also recorded their yawns by pressing a button on the device each time they yawned. The data showed that yawning tended to occur about 15 minutes before a period of increased behavioral activity. Yawning bore no relationship to sleep patterns, however. This accords with anecdotal evidence that people often yawn in situations where they are neither tired nor bored, but are preparing for impending mental and physical activity. Such yawning is often referred to as "incongruous" because it seems out of place, at least on the tiredness view: soldiers yawning before combat, musicians yawning before performing, and

D. The theory is incomplete because it does not explain all the evolutionary stages in the development of yawning

10. The word “empirical” in the passage is closest in meaning to

reliable

based on common sense

relevant

based on observation

11. The study of yawning behavior discussed in paragraph 4 supports which of the following conclusions?

A. Yawning is associated with an expectation of increased physical activity.

B. Yawning occurs more frequently when people are asked to record their yawning.

C. People tend to yawn about fifteen minutes before they become tired or bored

D. Mental or physical stress tends to make people yawn

12. Why does the author mention “soldiers yawning before combat, musicians yawning before performing, and athletes yawning before competing”?

A. To argue that just the expectation of physical activity can make some people feel tired

B. To explain how the view that people yawn because they are tired accounts for yawning before stressful situations

C. To support the view that yawning helps prepare a person for mental or physical exertion

D. To provide anecdotal evidence that conflicts with the experience of the volunteers in the study

13. Look at the four squares █ that indicate where the following sentence could be added to the passage

This, however, was not the case.

Where would the sentence best fit?

athletes yawning before competing. Their yawning seems to have nothing to do with sleepiness or boredom—quite the reverse—but it does precede a change in activity level.

14.

The tiredness theory of yawning does not seem to explain why yawning occurs.

Answer Choices

- Although earlier scientific studies strongly supported the tiredness theory new evidence has cast doubt on these findings.
- Some have proposed that yawning plays a role in the development of the lungs before birth but that it serves no purpose in adults
- New studies, along with anecdotal evidence, have shown that the frequency of yawning increases during extended periods of inactivity.
- Evidence has shown that yawning is almost completely unrelated to the amount of oxygen in the blood and is unrelated to sleep behavior
- Fluids in the lungs of the fetus prevent yawning from occurring which disproves the developmental theory of yawning
- There is some evidence that suggests that yawning prepares the body and mind for a change in activity level

-
1. According to paragraph 1. all of the following take place in the development of a flash of lightning EXCEPT
great tension between two oppositely charged regions
an increase in negatively charged particles over positively charged particles
oppositely charged particles coming together
the release of electrical energy in the form of visible light

无老师 网站

<http://www.ibtsat.com>

2. The word “tremendous” in the passage is closest in meaning to
distinct
growing
huge
immediate

Lightning

Lightning is a brilliant flash of light produced by an electrical discharge from a storm cloud. The electrical discharge takes place when the attractive tension between a region of negatively charged particles and a region of positively charged particles becomes so great that the charged particles suddenly rush together. The coming together of the oppositely charged particles neutralizes the electrical tension and releases a tremendous amount of energy, which we see as lightning. The separation of positively and negatively charged particles takes place during the development of the storm cloud.

The separation of charged particles that forms in a storm cloud has a sandwich-like

3. According to paragraph 2, what causes ice crystals to become positively charged?

Collisions with ice pellets

Collisions with negatively charged ice crystals at the base of the cloud

Becoming concentrated in the central region of the cloud

Forming at a temperature greater than -15°C

4. The word “acquire” in the passage is closest in meaning to

reject

obtain

need

produce

5. According to paragraph 2, why are positively charged ice pellets produced in the lower part of the cloud?

A. Collisions between ice crystals and ice pellets increase in number in the lower part of the cloud

B. The lower part of the cloud is smaller than the region above it

C. More ice pellets than ice crystals reach the lower part of the cloud

D. Temperatures in the lower part of the cloud are warmer than -15°C.

6. According to paragraph 2, the middle region of a cloud becomes negatively charged due to all of the following EXCEPT

a shift of electrical charges between ice pellets and ice crystals

negatively charged ice pellets that remain in the middle

a temperature of -15°C or less

the development of a positive charge at the base of the cloud

7. The author remarks that "Lightning that strikes the ground is the most likely to be destructive" in order to explain why

structure. Concentrations of positively charged particles develop at the top and bottom of the cloud, but the middle region becomes negatively charged. Recent measurements made in the field together with laboratory simulations offer a promising explanation of how this structure of charged particles forms. What happens is that small (millimeter-to centimeter-size) pellets of ice form in the cold upper regions of the cloud. When these ice pellets fall, some of them strike much smaller ice crystals in the center of the cloud. The temperature at the center of the cloud is about -15°C or lower. At such temperatures, the collision between the ice pellets and the ice crystals causes electrical charges to shift so that the ice pellets acquire a negative charge and the ice crystals become positively charged. Then updraft wind currents carry the light, positively charged ice crystals up to the top of the cloud. The heavier negatively charged ice pellets are left to concentrate in the center. This process explains why the top of the cloud becomes positively charged, while the center becomes negatively charged. The negatively charged region is large: several hundred meters thick and several kilometers in diameter. Below this large, cold, negatively charged region, the cloud is warmer than -15°C, and at these temperatures, collisions between ice crystals and falling ice pellets produce positively charged ice pellets that then populate a small region at the base of the cloud.

Most lightning takes place within a cloud when the charge separation within the cloud collapses. However, as the storm cloud develops, the ground beneath the cloud becomes positively charged and

- A. this form of lightning has been investigated so much
- B. this form of lightning is not as common as lightning within a cloud
- C. scientific understanding of this form of lightning is important
- D. the buildup of positive charge on the ground beneath a storm cloud can have serious consequences

8. The word “illuminates” in the passage is closest in meaning to
opens
completes
lights
electrifies

9. According to paragraph 5, which of the following is true of the stream of charged particles from the ground?

- It prevents streams of electrons from the cloud from striking the ground
- It completes a channel that connects the storm cloud with the ground
- It produces a stream of electrons from the cloud
- It widens the path made by the initial stream of electrons from the cloud

10. Which of the following claims about lightning strikes can be inferred from paragraph 5?

- A. During a lightning strike the diameter of the channel the electrons follow is considerably enlarged beyond a few centimeters
- B. A building is unlikely to be hit by lightning unless it is at least 100 meters tall
- C. A building is hit by a lightning strike because the building itself has first determined the path the lightning then takes to it
- D. The light of a lightning strike first appears at the point where the streams of negative and positive particles meet

lightning can take place in the form of an electrical discharge between the negative charge of the cloud and the positively charged ground. Lightning that strikes the ground is the most likely to be destructive, so even though it represents only 20 percent of all lightning, it has received a lot of scientific attention.

Using high-speed photography, scientists have determined that there are two steps to the occurrence of lightning from a cloud to the ground. First, a channel, or path, is formed that connects the cloud and the ground. Then a strong current of electrons follows that path from the cloud to the ground, and it is that current that illuminates the channel as the lightning we see.

The formation of the channel is initiated when electrons surge from the cloud base toward the ground. When a stream of these negatively charged electrons comes within 100 meters of the ground it is met by a stream of positively charged particles that comes up from the ground. When the negatively and positively charged streams meet, a complete channel connecting the cloud and the ground is formed. The channel is only a few centimeters in diameter, but that is wide enough for electrons to follow the channel to the ground in the visible form of a flash of lightning. The stream of positive particles that meets the surge of electrons from the cloud often arises from a tall pointed structure such as a metal flagpole or a tower. That is why the subsequent lightning that follows the completed channel often strikes a tall structure. ■

Once a channel has been formed, it is usually used by several lightning

11. It can be inferred from paragraph 2 that part of the reason that the top of a storm cloud becomes positively charged is that

- A. the top of the cloud is warmer than the middle of the cloud
- B. the middle of the cloud is already occupied by positively charged particles
- C. the negatively charged ice pellets are too heavy to be carried by the updrafts that move ice crystals
- D. collisions between ice pellets in the top of the cloud produce mainly positively charged particles

12. The word “initiated” is closest in meaning to

- started
- intensified
- finished
- expected

13. Look at the four squares █ that indicate where the following sentence could be added to the passage

The descending stream of electrons divides at the point where the new positive-stream channel intersects the established path.

Where would the sentence best fit?

14.

Lightning takes place when a separation of positive and negative electrical particles that develop in a storm cloud suddenly collapses.

- A storm cloud first develops a positively charged layer at the top then a negatively charged middle layer and finally, a positively charged layer at the bottom
- Lightning from cloud to ground follows a channel that forms when a stream of electrons moving down meets a stream of positive particles coming up from the ground
- Lightning from a cloud to the ground is more likely to be destructive than is lightning that takes place within a cloud

discharges, each of them consisting of a stream of electrons from the cloud meeting a stream of positive particles along the established path. █ Sometimes, however, a stream of electrons following an established channel is met by a positive stream making a new path up from the ground. █ The result is a forked lightning that strikes the ground in two places. █

- A separation of oppositely charged particles in clouds develops from collisions of falling ice pellets with ice crystals, from updrafts and from temperature variations
 - Field studies laboratory simulations and high-speed photography have all been used to investigate the way charge separations develop in clouds
 - Once a channel has been formed it is usually used by several successive electrical discharges that illuminate the channel as flashes of lightning
-
-

TPO 19

Paragraph 1:

1. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

○ Many Roman soldiers remained in Britain after conquering it, and their presence had a strong influence.

○ The new Roman province of Britain seemed to awaken in the first century A.D as the local economy improved.

○ Camps, fortifications, and economic change contributed to the Roman conquest of Britain.

○ With the conquest of Britain by Roman troops, the Roman Empire gained considerable economic strength.

2. According to paragraph 1, the Roman army had the most influence on those areas of Britain that were

○ conquered first

THE ROMAN ARMY'S IMPACT ON BRITAIN

In the wake of the Roman Empire's conquest of Britain in the first century A.D., a large number of troops stayed in the new province, and these troops had a considerable impact on Britain with their camps, fortifications, and participation in the local economy. Assessing the impact of the army on the civilian population starts from the realization that the soldiers were always unevenly distributed across the country. Areas rapidly incorporated into the empire were not long affected by the military. Where the army remained stationed, its presence was much more influential. The imposition of a military base involved the requisition of native lands for both the fort and the territory needed to feed and exercise the soldiers' animals. The imposition of military rule also robbed local leaders of opportunities to participate in local government, so social development was stunted and the seeds of disaffection sown. This then meant that the military had to

- near population centers
- used as military bases
- rapidly incorporated into the empire

3. According to paragraph 1, what effect did military occupation have on the local population?

- It encouraged more even distribution of the population and the settlement of previously undeveloped territory.
- It created discontent and made continuing military occupation necessary.
- It required local labor to construct forts and feed and exercise the soldiers' animals.
- It provided local leaders with opportunities to participate in governance.

4. The word “suppress” in the passage is closest in meaning to

- respond to
- warn against
- avoid the impact of
- stop by force

Paragraph 2:

5. The word “friction” in the passage is closest in meaning to

- rebellion
- conflict
- neglect
- crime

6. The author mentions “343 men at one fort engaged on tasks like shoemaking, building a bathhouse, operating kilns, digging clay, and working lead” in order to

- describe the kinds of tasks soldiers were required to perform as punishment for disloyalty or misdeeds.
- illustrate some of the duties assigned to soldiers to keep them busy and well-behaved when not involved in military campaigns.
- provide evidence that Roman soldiers had a negative effect on the local area by performing jobs that had been performed by native workers.
- argue that the soldiers would have been better employed in the construction of infrastructure such as roads.

Paragraph 3:

remain to suppress rebellion and organize government.

Economic exchange was clearly very important as the Roman army brought with it very substantial spending power. Locally a fort had two kinds of impact. Its large population needed food and other supplies. Some of these were certainly brought from long distances, but demands were inevitably placed on the local area. Although goods could be requisitioned, they were usually paid for, and this probably stimulated changes in the local economy. When not campaigning, soldiers needed to be occupied; otherwise they represented a potentially dangerous source of friction and disloyalty. Hence a writing tablet dated 25 April tells of 343 men at one fort engaged on tasks like shoemaking, building a bathhouse, operating kilns, digging clay, and working lead. Such activities had a major effect on the local area, in particular with the construction of infrastructure such as roads, which improved access to remote areas.

Each soldier received his pay, but in regions without a developed economy there was initially little on which it could be spent. The pool of excess cash rapidly stimulated a thriving economy outside fort gates. Some of the demand for the services and goods was no doubt fulfilled by people drawn from far afield, but some local people certainly became entwined in this new economy. There was informal marriage with soldiers, who until AD 197 were not legally entitled to wed, and whole new communities grew up near the forts. These settlements acted like small towns, becoming centers for the artisan and trading populations.

7. The phrase entitled to" in the passage is closest in meaning to

- given the right to
- able to afford to
- encouraged to
- required to

8. According to paragraph 3, how did the soldiers meet their needs for goods and services?

◦ Their needs were met by the army, and all of their economic transactions took place within the fort.

◦ Most of their needs were met by traveling tradespeople who visited the forts.

◦ During their days off, soldiers traveled to distant towns to make purchases.

◦ They bought what they needed from the artisans and traders in nearby towns.

Paragraph 4:

9. According to paragraph 4, which of the following is true of Britain's auxiliary regiments of the Roman army?

◦ Membership in these regiments reached its highest point during the reign of the emperor Hadrian.

◦ Most of the units recruited in Britain were sent to Morocco and other stations outside Europe.

◦ Soldiers served in the regiments for many years and after retirement generally stayed where they had been stationed.

◦ Most of the regiments stationed on the frontier were new units transferred from a neighboring province.

10. According to paragraph 4, all of the following changes could be seen in the frontier garrisons by the later Roman period EXCEPT:

◦ Membership in the units passed from father to son.

◦ Fewer soldiers were stationed at the forts.

◦ Soldiers usually were not transferred to different locations.

◦ Frontier units became more effective and proficient.

Paragraph 5:

11. Why does the author mention that some of the forts continued in occupation long after

The army also provided a means of personal advancement for auxiliary soldiers recruited from the native peoples, as a man obtained hereditary Roman citizenship on retirement after service in an auxiliary regiment. Such units recruited on an ad hoc (as needed) basis from the area in which they were stationed, and there was evidently large-scale recruitment within Britain. The total numbers were at least 12,500 men up to the reign of the emperor Hadrian (A.D. 117-138), with a peak around A.D. 80. Although a small proportion of the total population, this perhaps had a massive local impact when a large proportion of the young men were removed from an area. Newly raised regiments were normally transferred to another province from whence it was unlikely that individual recruits would ever return. Most units raised in Britain went elsewhere on the European continent, although one is recorded in Morocco. The reverse process brought young men to Britain, where many continued to live after their 20 to 25 years of service, and this added to the cosmopolitan Roman character of the frontier population. By the later Roman period, frontier garrisons (groups of soldiers) were only rarely transferred, service in units became effectively hereditary, and forts were no longer populated or maintained at full strength.

This process of settling in as a community over several generations, combined with local recruitment, presumably accounts for the apparent stability of the British northern frontier in the later Roman period. It also explains why some of the forts continued in occupation long after Rome ceased to have any formal

Rome ceased to have any formal authority in Britain"?

○To emphasize the degree to which the stability of the British northern frontier depended on firm military control

○To suggest that the Romans continued to occupy Britain even after they had formally given up the right to do so

○To support the claim that forts continued to serve an important economic function even after they ceased to be of any military use

○To describe one of the things that resulted from frontier garrisons' becoming part of the local community over a long period

authority in Britain, at the beginning of the fifth century A.D. The circumstances that had allowed natives to become Romanized also led the self-sustaining military community of the frontier area to become effectively British.

12. The word 'circumstances' in the passage is closest in meaning to

- experiences
- communities
- conditions
- laws

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

One solution was to keep them busy as sources of labor.

Where would the sentence best fit?
14.

The Roman army's occupation of Britain influenced and changed the local population.

Answer Choices

○Although the presence **of the** army in certain areas caused resentment among the local population, it provided important services such as building infrastructure.

○By recruiting unemployed young men for its auxiliary units, the army made it possible for them to stay in their home towns and provide financial support for their families.

○Large quantities **of** cash from soldiers' pay stimulated development, but also drove up prices, making **it** hard for local residents to afford goods and services.

○Though the army appropriated land and some goods, it also paid for many supplies, stimulating local economic growth.

○The forts contributed to the quality of local crafts by bringing in artisans from distant

Paragraph 2: Economic exchange
was clearly very important as the Roman army brought with it very substantial spending power. Locally a fort had two kinds of impact. Its large population needed food and other supplies. ■ Some of these were certainly brought from long distances, but demands were inevitably placed on the local area. ■ Although goods could be requisitioned, they were usually paid for, and this probably stimulated changes in the local economy. ■ When not campaigning, soldiers needed to be occupied; otherwise they represented a potentially dangerous source of friction and disloyalty. ■ Hence a writing tablet dated 25 April tells of 343 men at one fort engaged on tasks like shoemaking, building a bathhouse, operating kilns, digging clay, and working lead. Such activities had a major effect on the local area, in particular with the construction of infrastructure such as roads, which improved access to remote areas.

places who brought with them new skills and techniques.

○Roman soldiers started families with local inhabitants, and over the generations, the military community became a stable part of British society.

paragraph 2:

1. According to paragraph 2, which of the following is a criticism of Clements "view of succession"?

○The principles of succession are more lawlike than Clements thought they were.

○More evidence is needed to establish Clements' predictions about succession.

○The details of succession are affected by random processes.

○Many of the factors that determine which plants will grow in an environment, such as the nature of the soil and the exposure to sun, do not change at all.

2. The word substantiated in the passage is closest in meaning to

- confirmed
- noticed
- defined
- publicized

3. The word "trend" in the passage is closest in meaning to

- Probability
- picture
- lawlike regularity
- tendency

paragraph 3:

4. The word "likewise" in the passage is closest in meaning to

- sometimes

SUCCESSION, CLIMAX, AND ECOSYSTEMS

In the late nineteenth century, ecology began to grow into an independent science from its roots in natural history and plant geography. The emphasis of this new "community ecology" was on the composition and structure of communities consisting of different species. In the early twentieth century, the American ecologist Frederic Clements pointed out that a succession of plant communities would develop after a disturbance such as a volcanic eruption, heavy flood, or forest fire. An abandoned field, for instance, will be invaded successively by herbaceous plants (plants with little or no woody tissue), shrubs, and trees, eventually becoming a forest. Light-loving species are always among the first invaders, while shade-tolerant species appear later in the succession.

Clements and other early ecologists saw almost lawlike regularity in the order of succession, but that has not been substantiated. A general trend can be recognized, but the details are usually unpredictable. Succession

- similarly
- apparently
- consequently

paragraph 4:

5. The word "legitimately" in the passage is closest in meaning to

- commonly
- broadly
- properly
- officially

6. According to paragraph 4, why do many authors prefer the term "association" to "community" when describing a climax plant formation?

○Because the term "association" does not suggest the presence of a tight network involving interactive communication.

○Because the term "association" indicates that the grouping is not necessarily beneficial to all members.

○Because the term "community" indicates continuing dynamic development that a climax formation does not have.

○Because the term "community" suggests an organization that has been designed for a specific purpose.

paragraph 5:

7. In paragraph 5, the author challenges the idea of a 'biome' by noting that

○there are usually no very strong connections among the plants and animals living in a place

○plants and animals respond in the same way to the same circumstances

○particular combinations of flora and fauna do not generally come about purely by chance

○some animals are dependent on specific kinds of plants for food

8. Why does the author make the statement, "Indeed, there are vast areas of spruce

is influenced by many factors: the nature of the soil, exposure to sun and wind, regularity of precipitation, chance colonizations, and many other random processes.

The final stage of a succession, called the climax by Clements and early ecologists, is likewise not predictable or of uniform composition. There is usually a good deal of turnover in species composition, even in a mature community. The nature of the climax is influenced by the same factors that influenced succession. Nevertheless, mature natural environments are usually in equilibrium. They change relatively little through time unless the environment itself changes.

For Clements, the climax was a "superorganism," an organic entity. Even some authors who accepted the climax concept rejected Clements' characterization of it as a superorganism, and it is indeed a misleading metaphor. An ant colony may be legitimately called a superorganism because its communication system is so highly organized that the colony always works as a whole and appropriately according to the circumstances. But there is no evidence for such an interacting communicative network in a climax plant formation. Many authors prefer the term "association" to the term "community" in order to stress the looseness of the interaction.

Even less fortunate was the extension of this type of thinking to include animals as well as plants. This resulted in the "biome," a combination of coexisting flora and

forest without moose”?

- To highlight a fact whose significance the ecologist Herbert Gleason had missed
- To propose the idea that a spruce forest is by itself a superorganism
- To emphasize that moose are not limited to a single kind of environment
- To criticize the idea of a spruce-moose biome

9. The word “initiated” in the passage is closest in meaning to

- Approved
- identified
- started
- foreseen

10. According to paragraph 5, Gleason's opposition to the Clementsian views of plant ecology was based on the claim that plant species grow in places where

- they can enter into mutually beneficial relationships with other species
- conditions suit them, regardless of whether particular other species are present
- habitats are available for a wide variety of plant and animal species
- their requirements are met, and those of most other species are not

paragraph 6:

11. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information

- Unlike the terms "climax," "biome," and "superorganism," which refer to the particular association of plants and animals at a given location, the term 'ecosystem' refers specifically to the physical factors within an environment.
- The terms "climax," "biome," 'superorganism,' and "ecosystem" all refer to the system of plants and animals in an associated

fauna. Though it is true that many animals are strictly associated with certain plants, it is misleading to speak of a "spruce-moose biome," for example, because there is no internal cohesion to their association as in an organism. The spruce community is not substantially affected by either the presence or absence of moose. Indeed, there are vast areas of spruce forest without moose. The opposition to the Clementsian concept of plant ecology was initiated by Herbert Gleason, soon joined by various other ecologists. Their major point was that the distribution of a given species was controlled by the habitat requirements of that species and that therefore the vegetation types were a simple consequence of the ecologies of individual plant species.

With "climax," "biome," "superorganism," and various other technical terms for the association of animals and plants at a given locality being criticized, the term "ecosystem" was more and more widely adopted for the whole system of associated organisms together with the physical factors of their environment. Eventually, the energy-transforming role of such a system was emphasized. Ecosystems thus involve the circulation, transformation, and accumulation of energy and matter through the medium of living things and their activities. The ecologist is concerned primarily with the quantities of matter and energy that pass through a given ecosystem, and with the rates at which they do so.

Although the ecosystem concept was very popular in the 1950s and

environment, but some are more controversial than others.

○When the older terms of ecology became too technical, they were replaced by the more popular and more widely used term ecosystem."

○The term "ecosystem" gradually replaced discredited terms for the combination of a physical environment and the plants and animals living together in it.

12. According to paragraph 6, what did ecologists mainly study when the ecosystem concept was the dominant paradigm?

○The physical factors present in different environments.

○The typical activities of animals and the effect of those activities on plants.

○The rates at which ecosystems changed from one kind to another.

○The flow of energy and matter through ecosystems.

1960s, it is no longer the dominant paradigm. Gleason's arguments against climax and biome are largely valid against ecosystems as well. Furthermore, the number of interactions is so great that they are difficult to analyze, even with the help of large computers. Finally, younger ecologists have found ecological problems involving behavior and life-history adaptations more attractive than measuring physical constants. Nevertheless, one still speaks of the ecosystem when referring to a local association of animals and plants, usually without paying much attention to the energy aspects.

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage

They may be more interested in researching, for example, the adaptations that some aquatic animals undergo to survive in dry desert environments.

Where would the sentence best fit?

14.

The study of the combination of plant

Paragraph 7: Although the ecosystem concept was very popular in the 1950s and 1960s, it is no longer the dominant paradigm. ■ Gleason's arguments against climax and biome are largely valid against ecosystems as well. ■ Furthermore, the number of interactions is so great that they are difficult to analyze, even with the help of large computers. Finally, younger ecologists have found ecological problems involving behavior and life-history adaptations more attractive than measuring physical constants. ■ Nevertheless, one still speaks of the ecosystem when referring to a local association of animals and plants, usually without paying much attention to the energy aspects.■

species that inhabit a particular locality became a scientific discipline toward the end of the nineteenth century.

Answer Choices

○Areas that are recovering from serious disturbances like volcanic eruptions and heavy floods provide special opportunities to observe the development of plant communities.

○Whether a given species will be found in a given ecosystem strongly depends on what other species it would interact with in that ecosystem.

○Computer-aided studies of entire systems of associated organisms together with their environment provide a solid basis for current studies of specific ecological problems.

○According to the earliest theories of ecology, the development of plant communities proceeds in lawlike fashion and results in stable climax communities.

○The idea of associations of plants and animals that function as “superorganisms” was later rejected by biologists who saw no strong evidence in support of that idea.

○The once popular idea of communities as integrated ecosystems has been largely rejected by modern ecologists, who are more interested in problems involving behavior and adaptations.

Paragraph 1:

15. The word "accumulations" in the passage is closest in meaning to

- Signs
- Pieces
- Types
- Deposits

16. The word “heterogeneous” in the passage is closest in meaning to

- Remaining
- Varied
- Familiar
- Layered

17. According to paragraph 1, what persuaded Louis Agassiz that glaciation in the

Discovering the Ice Ages

In the middle of the nineteenth century, Louis Agassiz, one of the first scientists to study glaciers, immigrated to the United States from Switzerland and became a professor at Harvard University, where he continued his studies in geology and other sciences. For his research, Agassiz visited many places in the northern parts of Europe and North America, from the mountains of Scandinavia and New England to the rolling hills of the American Midwest. In all these diverse regions, Agassiz saw signs of glacial erosion

past had been widespread?

- Geologic differences between mountain valleys and flat plains
- The presence of similar glacial material in many different regions
- Geologic research on mountain glaciers in the Alps
- Evidence of regional differences in the drift caused by glacial erosion

Paragraph 2:

18. The word “enjoy” in the passage is closest in meaning to

- experience
- resemble
- expect
- dominate

19. It can be inferred from paragraph 2 that Agassiz and other geologists of his time were not able to determine

- which geographic regions had been covered with ice sheets in the last ice age
- the exact dates at which drifts had been deposited during the last ice age
- the exact composition of the drifts laid down during the last ice age
- how far south along the east coast of the United States the ice had advanced during the last ice age

Paragraph 3-4:

20. According to paragraph 3, what did geologists conclude as a result of finding well-developed soils containing warm-climate plant fossils between layers of glacial drift?

There had been only one warm period before the Pleistocene epoch

There had been multiple periods of mild weather between ice ages

Several glacial periods occurred after the Pleistocene epoch

Some earlier epochs were warmer than the Pleistocene

and sedimentation. In flat plains country, he saw moraines (accumulations of earth and loose rock that form at the edges of glaciers) that reminded him of the terminal moraines found at the end of valley glaciers in the Alps. The heterogeneous material of the drift (sand, clay, and rocks deposited there) convinced him of its glacial origin.

The areas covered by this material were so vast that the ice that deposited it must have been a continental glacier larger than Greenland or Antarctica. Eventually, Agassiz and others convinced geologists and the general public that a great continental glaciation had extended the polar ice caps far into regions that now enjoy temperate climates. For the first time, people began to talk about ice ages. It was also apparent that the glaciation occurred in the relatively recent past because the drift was soft, like freshly deposited sediment. We now know the age of the glaciation accurately from radiometric dating of the carbon-14 in logs buried in the drift. The drift of the last glaciation was deposited during one of the most recent epochs of geologic time, the Pleistocene, which lasted from 1.8 million to 10,000 years ago. Along the east coast of the United States, the southernmost advance of this ice is recorded by the enormous sand and drift deposits of the terminal moraines that form Long Island and Cape Cod.

It soon became clear that there

21. According to paragraphs 3 and 4, scientists modified their theory about the exact number of glaciations because of evidence obtained from

- ocean sediments
- interglacial soils
- glacial deposits
- air samples

22. The word "reveal" in the passage is closest in meaning to

- result from
- vary with
- show
- preserve

Paragraph 5:

24. It can be inferred from paragraph 5 that foraminifera fossil shells containing calcite with high percentages of oxygen-16 were deposited at times when

- polar ice extended as far as equatorial regions of land and sea
- extensive glaciation was not occurring
- there were no great increases in ocean temperature
- there was heavy snowfall on continental glaciers

25. In paragraph 5, why does the author include the information that the "oxygen isotope ratio of the ocean changes as a great deal of water is withdrawn from it by evaporation and is precipitated as snow to form glacial ice"?

To explain how scientists were able to calculate how frequently the continental ice sheets expanded and contracted

To explain how scientists have determined that there was no great change in ocean temperatures at the equator during past glaciations

To provide evidence that oxygen-16 has a greater tendency to evaporate than does

were multiple glacial ages during the Pleistocene, with warmer interglacial intervals between them. As geologists mapped glacial deposits in the late nineteenth century, they became aware that there were several layers of drift, the lower ones corresponding to earlier ice ages. Between the older layers of glacial material were well-developed soils containing fossils of warm-climate plants. These soils were evidence that the glaciers retreated as the climate warmed. By the early part of the twentieth century, scientists believed that four distinct glaciations had affected North America and Europe during the Pleistocene epoch.

This idea was modified in the late twentieth century, when geologists and oceanographers examining oceanic sediment found fossil evidence of warming and cooling of the oceans. Ocean sediments presented a much more complete geologic record of the Pleistocene than continental glacial deposits did. The fossils buried in Pleistocene and earlier ocean sediments were of foraminifera—small, single-celled marine organisms that secrete shells of calcium carbonate, or calcite. These shells differ in their proportion of ordinary oxygen (oxygen-16) and the heavy oxygen isotope (oxygen-18). The ratio of oxygen-16 to oxygen-18 found in the calcite of a foraminifer's shell depends on the temperature of the water in which the organism lived. Different ratios in the shells preserved in various layers of sediment reveal the temperature

oxygen-18

○To suggest that equatorial marine organisms absorb more heavy isotopes than do marine organisms elsewhere

26. According to the passage, when did scientists begin to realize that more than one ice age had occurred?

- In the mid nineteenth century
- In the late nineteenth century
- In the early twentieth century
- In the late twentieth century

changes in the oceans during the Pleistocene epoch.

Isotopic analysis of shells allowed geologists to measure another glacial effect. They could trace the growth and shrinkage of continental glaciers, even in parts of the ocean where there may have been no great change in temperature—around the equator, for example. The oxygen isotope ratio of the ocean changes as a great deal of water is withdrawn from it by evaporation and is precipitated as snow to form glacial ice. During glaciations, the lighter oxygen-16 has a greater tendency to evaporate from the ocean surface than the heavier oxygen-18 does. Thus, more of the heavy isotope is left behind in the ocean and absorbed by marine organisms. From this analysis of marine sediments, geologists have learned that there were many shorter, more regular cycles of glaciation and deglaciation than geologists had recognized from the glacial drift of the continents alone.

Look at the four squares (HI that indicate where the following sentence could be added to the passage

In his view, there could be no other explanation for the composition of such drift

Where would the sentence best fit?

28.

Louis Agassiz was the first to note signs of glacial erosion and sedimentation in diverse regions of Europe and North America.

Answer Choices

- Evidence of a pattern of glacier-like

Paragraph 1: In the middle of the nineteenth century, Louis Agassiz, one of the first scientists to study glaciers, immigrated to the United States from Switzerland and became a professor at Harvard University, where he continued his studies in geology and other sciences. For his research, Agassiz visited many places in the northern parts of Europe and North America, from the mountains of Scandinavia and New England to the rolling hills of the American Midwest. ■ In all these diverse

deposits eventually convinced most geologists that an enormous continental glacier had extended into the temperate zone

○Glacial research showed that many layers of ice were deposited, with each new period of glaciation extending farther south than the one before

○Isotopic analysis of marine sediments showed that periods of r glaciation and deglaciation were more frequent, shorter, and more cyclic than previously thought

○Nineteenth-century geologists came to accept the idea that the areas covered by polar ice had reached as far as the equator, a far larger area than Agassiz had thought

○Nineteenth-century geologists studying the layers of drift concluded that during the Pleistocene epoch, several glaciations had occurred with warm periods between them

○Research involving foraminifera fossil shells shows that ocean temperatures in the Northern Hemisphere varied greatly during the most extensive periods of glaciation

regions, Agassiz saw signs of glacial erosion and sedimentation. ■ In flat plains country, he saw moraines (accumulations of earth and loose rock that form at the edges of glaciers) that reminded him of the terminal moraines found at the end of valley glaciers in the Alps. ■ The heterogeneous material of the drift (sand, clay, and rocks deposited there) convinced him of its glacial origin. ■

一想到新托福，就想到咱老无。

TPO 20

Q1 What can be inferred from **paragraph 1** about western farmers prior to 1815?

- They had limited their crop production to wheat, corn, tobacco, and cotton.
- They were able to sell their produce at high prices.
- They had not been successful in raising cattle.
- They did not operate in a national market economy.

Q2 What is the purpose of the statement, “whereas in 1810 only a **seventy** of the American people lived west of Appalachian Mountains, by 1840 more than a third lived there”?

Westward migration

The story of the westward movement of population in the united states is, in the main, the story of the expansion of American agriculture-of the development of new areas for the raising of livestock and the cultivation of wheat, corn, tobacco, and cotton. After 1815 improved transportation enabled more and more western farmers to escape a self-sufficient way of life and enter a national market economy during periods when commodity prices were high, the rate of westward migration increased spectacularly. “old America seemed to be

- To illustrate that generally population shifts occur rapidly
- To correct a mistaken impression of American agriculture from 1810 to 1840
- To emphasize the range and speed with which the westward migration occurred
- To demonstrate how attractive the Appalachian Mountains were to Americans

Q3 The word ‘fringes’ in the passage is closest in meaning to

- Borders
- Groups
- Types
- Directions

Q4 According to paragraph 2, all of the following are reasons why Americans migrated westward EXCEPT

- The desire to move from one place to the next
- The hope of improving their socioeconomic status
- The opportunity to change jobs
- The need to escape religious or political crises

Q5 Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- Because the West had more rivers and forests than the East, its soil was more productive.
- The fertile soils of the West drew farmers from regions with barren soils.
- Farmers living in western areas of the United States were more affected by soil erosion than farmers living in eastern areas.
- The soil in western areas of the United States was richer than soil in eastern areas.

Q6 According to **paragraph 3**, what was the significance of the land law passed in 1820?

- It granted government-supported loans to farmers.
- It provided farmland at an affordable price.

breaking up and moving westward,” observed an English visitor in 1817, during the first great wave of migration. Emigration to the west reached a peak in the 1830’s. whereas in 1810 only a **seventy** of the American people lived west of the Appalachian mountains, by 1840 more than a third lived there.

=>Why were these hundreds of thousands of settlers-most of them farmers some of them artisans-drawn away from the cleared fields and established cities and villages of the East? Certain characteristics of American society help to explain this remarkable migration. The European ancestors of some Americans had for centuries lived rooted to the same village or piece of land until some religious, political, or economic crisis uprooted them and drove them across the Atlantic. Many of those who experienced this sharp break thereafter lacked the ties that had bound them and their ancestors to a single place. Moreover, European society was relatively stratified; occupation and social status were inherited. In American society, however, the class structure was less rigid; some people changed occupations easily and believed it was their duty to improve their social and economic position. As a result, many Americans were an inveterately restless, rootless, and ambitious people. Therefore, these social and economic position. As a result, many Americans were an inveterately restless, rootless, and ambitious people. Therefore, these social traits helped to produce the nomadic and daring settlers who kept pushing westward beyond the **fringes** of settlement. In addition, there were other immigrants who migrated west in search of new homes, material success, and

- It required banks to offer loans to farmers.
- It enabled farmers to sell their land for a profit.

Q7 The word “proliferation” in the passage is closest in meaning to

- Growth
- Cooperation
- Importance
- Success

Q8 Paragraph 4 suggests that turnpikes affected farmers by

- Making the price of grain uniform for both eastern and western farmers
- Making western farm products more profitable than eastern farm products.
- Allowing farmers to drive their livestock across mountain trails
- Allowing a greater number of farmers to sell their farm products in a commercial market

Q9 The word “superseded” in the passage is closest in meaning to

- Replaced
- Reformed
- Equalled
- Increased

Q10 The word “diverted” in the passage is closest in meaning to

- Collected shifted
- Shifted
- Transported
- Sold

Q11 Which of the following can be inferred from paragraph 5 about flatboats and keelboats?

- They ceased to be used as soon as the first turnpikes were built.
- They were slower and more expensive to operate than steamboats.
- They were used for long distance but not for regional transportation.

better lives.

=>The west had plenty of attractions: the alluvial river bottoms, the fecund soils of the rolling forest lands, the black loams of the prairies were tempting to New England farmers working their rock, sterile land and to southeastern farmers plagued with soil depletion and erosion. In 1820 under a new land law, a farm could be bought for 100. The continued proliferation of banks made it easier for those without cash to negotiate loans in paper money. Western farmers borrowed with the confident expectation that the exploding economy would keep farm prices high, thus making it easy to repay loans when they fell due.

Transportation was becoming less of a problem of those who wished to move west and for those who wished to move west and for those who had far surpluses to send to market. ■ Prior to 1815, western farmers who did not live on navigable waterways were connected to them only by dirt roads and mountain trails. ■ Livestock could be driven across the mountains, but the cost of transporting bulky grains in this fashion was several times greater than their value in eastern markets. ■ The first step toward an improvement of western transportation was the construction of turnpikes. ■ These roads made possible a reduction in transportation costs and thus agriculture along their routes.

Two other developments presaged the end of the era of turnpikes and started a transportation revolution that resulted in increased regional specialization and the growth of a national market economy. First came the steamboat; although flatboats and keelboats continued to be important until the 1850's, steamboats eventually superseded all other craft in

- They were used primarily on the Erie Canal.

Q12 Paragraph 5 mentions that the Erie Canal led to a reduction in all of the following EXCEPT

- The length of the route that goods from the West traveled across to reach eastern markets
- The cost of transporting freight
- The price of produce from western states
- The amount of produce from western states that was shipped on rivers

Q13 In fact, goods could be shipped more cheaply across the much greater distance of the Atlantic Ocean than they could from western New York to coastal cities.

Where would the sentence best fit?

Click on a square(■)to insert the sentence in the passage.

Q14 The westward movement of population across the United States led to expanded agricultural production.

Answer Choices

- A The desire to improve their livelihood often inspired people to move west.
- B Among the people who moved to the western United States were a number of artisans.
- C The fertility of western farmland as well as favorable government policies supported agricultural gains.
- D Steamboats were originally used to transport passengers rather than freight.
- E Commercial farming in the West was greatly enhanced by improvements in land and water transportation.
- F The transportation revolution resulted in regional economies that operated independently of a national market economy.

the carrying of passengers and freight. Steamboats were not only faster but also transported upriver freight for about one tenth of what it had previously cost on hand-propelled keelboats. Next came the Erie canal, an enormous project in its day, spanning about 350 miles. After the canal went into operation, the cost per mile of transporting a ton of freight from Buffalo to New York City declined from nearly 20 cents to less than 1 cent. Eventually, the western states diverted much of their produce from the rivers to the Erie Canal, a shorter route to eastern markets.

Q1 The word “momentous” in the passage is closest in meaning to

- Numerous

Early settlements in southwest Asia

The universal global warming at the end of the ice age had dramatic effects on

- Regular
- Very important
- Very positive

Q2 Major climatic changes occurred by the end of the Ice Age in all of the following geographic areas EXCEPT

- temperate regions of Asia
- southwestern Asia
- North America
- Europe

Q3 The phrase “this remarkable change” in the passage refers to

- warming at the end of the Ice Age
- shifts in mountain snow lines
- the movement of people from farms to villages
- a dramatic increase in the population

Q4 The word ‘exploited’ in the passage is closest in meaning to

- explored
- utilized
- inhabited
- improved

Q5 Why does the author mention “seashells, stone bowls, and artifacts made of obsidian”?

- to give examples of objects obtained through trade with other societies.
- to illustrate the kinds of objects that are preserved in a cool climate
- to provide evidence that the organization of work was specialized
- to give examples of the artistic ability of local populations.

Q6 The word “cramped” in the passage is closest in meaning to

- primitive
- secure
- extended
- confined

temperate regions of Asia, Europe, and North America. Ice sheets retreated and sea level rose. ■ The climatic changes in southwestern Asia were more subtle, in that they involved shifts in mountain snow lines, rainfall patterns, and vegetation cover. ■ However, these same cycles of change had momentous impacts on the sparse human populations of the region. ■ At the end of the Ice Age, no more than a few thousand foragers lived along the eastern Mediterranean coast, in the Jordan and Euphrates valleys. Within 2,000 years, the human population of the region numbered in the tens of thousands, all as a result of village life and farming. ■ Thanks to new environmental and archaeological discoveries, we now know something about this remarkable change in local life.

Pollen samples from freshwater lakes in Syria and elsewhere tell us forest cover expanded rapidly at the end of the Ice Age, for the southwestern Asian climate was still cooler and considerably wetter than today. Many areas were richer in animal and plant species than they are now, making them highly favorable for human occupation. About 9000 B.C., most human settlements lay in the area along the Mediterranean coast and in the Zagros Mountains of Iran and their foothills. Some local areas, like the Jordan River valley, the middle Euphrates valley, and some Zagros valleys, were more densely populated than elsewhere. Here more sedentary and more complex societies flourished. These people exploited the landscape intensively, foraging on hill slopes for wild cereal grasses and nuts, while hunting gazelle and other game on grassy lowlands and in river valleys. Their

Q7 **Paragraph 3** suggests which of the following about the settlement of Abu Hureyra?

- The settlement was inhabited by small groups of people from nearby areas.
- Small bands of people migrated in and out of the settlement.
- The location of the settlement made permanent development difficult.
- The easy availability of food led to the growth of the settlement.

Q8 The word “shifts” in the passage is closest in meaning to

- Effects
- Similarities
- Changes
- Exceptions

Q9 **Paragraph 4** suggests that the people of Abu Hureyra abandoned their long-established settlement because

- The inhabitants had cleared all the trees from the forests
- Wild cereal grasses took over pistachio and oak forests
- People wanted to explore new areas
- Lack of rain caused food shortages

Q10 According to **paragraph 5**, after 7000B.C. the settlement of Abu Hureyra differed from earlier settlements at that location in all of the following EXCEPT

- The domestication of animals
- The intensive hunting of gazelle
- The size of the settlement
- The design of the dwellings

Q11 The word ”abruptly” in the passage is closest in meaning to

- Informally
- Briefly
- Suddenly
- Surprisingly

settlements contain exotic objects such as seashells, stone bowls, and artifacts made of obsidian (volcanic glass), all traded from afar. This considerable volume of intercommunity exchange brought a degree of social complexity in its wake.

=>Thanks to extremely fine-grained excavation and extensive use of flotation methods (through which seeds are recovered from soil samples), we know a great deal about the foraging practices of the inhabitants of Abu Hureyra in Syria's Euphrates valley. Abu Hureyra was founded about 9500B.C., a small village settlement of cramped pit dwellings (houses dug partially in the soil) with reed roofs supported by wooden uprights. For the next 1,500 years, its inhabitants enjoyed a somewhat warmer and damper climate than today, living in a well-wooded steppe area where wild cereal grasses were abundant. They subsisted off spring migrations of Persian gazelles from the south. With such a favorable location, about 300 to 400 people lived in a sizable, permanent settlement. They were no longer a series of small bands but lived in a large community with more elaborate social organization, probably grouped into clans of people of common descent.

=>The flotation samples from the excavations allowed botanists to study shifts in plant-collection habits as if they were looking through a telescope at a changing landscape. Hundreds of tiny plant remains show how the inhabitants exploited nut harvests in nearby pistachio and oak forests. However, as the climate dried up, the forests retreated from the vicinity of the settlement. The inhabitants turned to wild cereal grasses instead, collecting them by the thousands, while the percentage of nuts in the diet fell. By

Q12 Which of the sentences below best expresses the essential information in the highlighted sentence in the passage?

Incorrect choices change the meaning in important ways or leave out essential information.

- In many areas besides Abu Hureyra, complex factors led to new economies including the herding of domestic stock.
- In Ain Ghazal and Syria domestic stock was more important than it was at Abu Hureyra.
- Once early methods of herding animals improved, new economies were adopted.
- Many complex theories attempt to explain the early domestication of animals.

Q13 Look at the four squares (■) that indicate where the following sentence can be added to the passage.

One of the major effects was the rapid growth of the human population itself.

Where would the sentence best fit?

Click on a square (■) to insert the sentence in the passage.

Q14 At the end of the Ice Age, patterns of human settlement changed in southwestern Asia.

Answer Choices

A Wild cereals, grasses, and nuts were changed for exotic objects.

B Changes in climatic conditions made southwestern Asia highly beneficial to human occupants.

C Social organization in Abu Hureyra decreased as the population grew.

D The favorable location of Abu Hureyra kept the city from experiencing hardship during drought years.

E Within 2,000 years, populations in southwestern Asia greatly increased in number.

F In rich, fertile areas permanent societies evolved to a high level of complexity.

8200B.C., drought conditions were so severe that the people abandoned their long-established settlement, perhaps dispersing into smaller camps.

=> Five centuries later, about 7700B.C., a new village rose on the mound. At first the inhabitants still hunted gazelle intensively. Then, about 7000 B.C., within the space of a few generations, they switched abruptly to herding domesticated goats and sheep and to growing einkorn, pulses, and other cereal grasses. Abu Hureyra grew rapidly until it covered nearly 30 acres. It was a close-knit community of rectangular, one-story mud-brick houses, joined by narrow lanes and courtyards, finally abandoned about 5000 B.C.. Many complex factors led to the adoption of the new economies, not only at Abu Hureyra, but at many other locations such as 'Ain Ghazal, also in Syria, where goat toe bones showing the telltale marks of abrasion caused by foot tethering (binding)' testify to early herding of domestic stock.

Q1 The word “agencies” in the passage is closest in meaning to

- Combinations
- Problems
- Forces
- Changes

Q2 In paragraph 1, what is the author’s purpose in providing examples of how organisms are destroyed?

- To emphasize how surprising it is that so many fossils exist
- To introduce a new geologic theory of fossil preservation
- To explain why the fossil record until now has remained incomplete
- To compare how fossils form on land and in water

Q3 The word “terrestrial” in the passage is closest in meaning to

- Land
- Protected
- Alternative
- Similar

Q4 Which of the sentences below best expresses the essential information in the highlighted sentence in the passage?

Incorrect choices change in the meaning in important ways or leave out essential information.

A When snail or clam shells are left behind, they must be empty in order to remain durable and resist dissolution.

B Although snail and clam shells are durable and resist dissolving, over time they slowly begin to change.

C Although the soft parts of snails or clams dissolve quickly, their hard shells resist dissolution for a long time.

D Empty snail or clam shells that are strong enough not to dissolve may stay in their original

Fossil preservation

When one considers the many ways by which organisms are completely destroyed after death, it is remarkable that fossils are as common as they are. Attack by scavengers and bacteria, chemical decay, and destruction by erosion and other geologic agencies make the odds against preservation very high. However, the chances of escaping complete destruction are vastly improved if the organism happens to have a mineralized skeleton and dies in a place where it can be quickly buried by sediment. Both of these conditions are often found on the ocean floors, where shelled invertebrates (organisms without spines) flourish and are covered by the continuous rain of sedimentary particles. Although most fossils are found in marine sedimentary rocks, they also are found in terrestrial deposits left by streams and lakes. On occasion, animals and plants have been preserved after becoming immersed in tar or quicksand, trapped in ice or lava flows, or engulfed by rapid falls of volcanic ash.

The term “fossil” often implies petrifaction, literally a transformation into stone. After the death of an organism, the soft tissue is ordinarily consumed by scavengers and bacteria. They empty shell of a snail or clam may be left behind, and if it is sufficiently durable and resistant to dissolution, it may remain basically unchanged for a long period of time. Indeed, unaltered shells of marine invertebrates are known from deposits over 100 million years old. In many marine creatures, however, the skeleton is composed of mineral variety of calcium carbonate called aragonite. Although aragonite has the same composition as the more familiar mineral

state for a long time.

Q5 Why does the author mention “**aragonite**” in the passage?

- To emphasize that some fossils remain unaltered for millions of years.
- To contrast fossil formation in organisms with soft tissue and in organisms with hard shells
- To explain that some marine organisms must undergo chemical changes in order to fossilize
- To explain why fossil shells are more likely to survive than are fossil skeletons.

Q6 The word “enhance” in the passage is closest in meaning to

- Control
- Limit
- Combine
- Increase

Q7 Which of the following best explains the process of permineralization mentioned in paragraph 3?

- Water containing calcium carbonate circulates through a shell and deposits sediment.
- Liquid containing chemicals hardens an already existing fossil structure.
- Water passes through sediment surrounding a fossil and removes its chemical content.
- A chemical substance enters a fossil and changes its shape.

Q8 The word “precise” in the passage is closest in meaning to

- Complex
- Quick
- Exact
- Reliable

<http://www.ibtsat.com>

Q9 Paragraph 5 suggests which of the following about the carbonization process?

- It is completed soon after an organism dies.
- It does not occur in hard-shell organisms.

known as calcite, it has a different crystal form, is relatively unstable, and in time changes to the more stable calcite.

=>Many other processes may affect the shell of the clam or snail and enhance its chances for preservation. Water containing dissolved silica, calcium carbonate, or iron may circulate through the enclosing sediment and be deposited in cavities such as narrow cavities and canals in bone once occupied by blood vessels and nerves. In such cases, the original composition of the bone or shell remains, but the fossil is made harder and more durable. This addition of a chemically precipitated substance into precipitated is termed “permineralization.”

Petrification may also involve a simultaneous exchange of the original substance of a dead plant or animal with mineral matter of a different composition. This process is termed “replacement” because solutions have dissolved the original material and replaced it with an equal volume of the new substance. Replacement can be a marvelously precise process, so that details of shell ornamentation, tree rings in wood, and delicate structures in bone are accurately preserved.

=>■ Another type of fossilization, known as carbonization, occurs when soft tissues are preserved as thin film of carbon.■ Leaves and tissue of soft-bodied organisms such as jellyfish or worms may accumulate, become buried and compressed, and lose their volatile constituents.■ The carbon often remains behind as a blackened silhouette.■

Although it is certainly true that the possession of hard parts enhances the prospect of preservation, organisms

- It sometimes allows soft-tissued organisms to be preserved with all their parts.
- It is a more precise process of preservation than is replacement.

Q10 The word “prospect” in the passage is closest in meaning to

- Completion
- Variety
- Possibility
- Speed

Q11 According to paragraph 7, how do environments containing oxygen affect fossil preservation?

- They increase the probability that soft-tissued organisms will become fossils.
- They lead to more bacteria production.
- They slow the rate at which clay and silt are deposited.
- They reduce the chance that animal remains will be preserved.

Q12 According to the passage, all of the following assist preservation EXCEPT

- The presence of calcite in an organism's skeleton
- The presence of large open areas along an ocean floor
- The deposition of a fossil in sticky substances such as sap or tar
- The rapid burial of an organism under layers of silt

Q13 Look at the four squares that indicate where the following sentence can be added to the passage. But the evidence of past organic life is not limited to petrifaction.

Where would the sentence best fit?

Click on a square■ to insert the sentence in the passage.

Q14 The remains of ancient life are amazingly well preserved in the form of

having soft tissues and organs are also occasionally preserved. Insects and even small invertebrates have been found preserved in the hardened resins of conifers and certain other trees. X-ray examination of thin slabs of rock sometimes reveals the ghostly outlines of tentacles, digestive tracts, and visual organs of a variety of marine creatures. Soft parts, including skin, hair, and viscera of ice age mammoths, have been preserved in frozen soil or in the oozing tar of oil seeps.

=>The probability that actual remains of soft tissue will be preserved is improved if the organism dies in an environment of rapid deposition and oxygen deprivation. Under such conditions, the destructive effects of bacteria are diminished. The middle Eocene Messel shale (from about 48 million years ago) of German accumulated in such an environment. The shale was deposited in an oxygen-deficient lake where lethal gases sometimes bubbled up and killed animals. Their remains accumulated on the floor of the lake and were then covered by clay and silt. Among the superbly preserved Messel fossils are insects with iridescent exoskeletons (hard outer coverings), frogs with skin and blood vessels intact, and even entire small mammals with preserved fur and soft tissue.

fossils.

Answer choices

- A Environmental characteristics like those present on ocean floors increase the likelihood that plant and animal fossils will occur.
 - B Fossils are more likely to be preserved in shale deposits than in deposits of clay and silt.
 - C The shells of organisms can be preserved by processes of chemical precipitation or mineral exchange.
 - D Freezing enables the soft parts of organisms to survive longer than the hard parts.
 - E Comparatively few fossils are found in the terrestrial deposits of streams and lakes.
 - F Thin films of carbon may remain as an indication of soft tissue or actual tissue may be preserved if exposure to bacteria is limited.
-
-

TPO 21

Q1 According to the processes described in paragraph 1, what is the relationship between radioactivity and the steam produced by geothermal heat?

- A Geothermally heated steam is produced when water is exposed to radioactivity deep underground.
- B When water is introduced into holes drilled thousands of feet in the ground, it becomes radioactive and turns to steam.
- C Radioactivity heats Earth's interior rock, which in turn can heat water to the point it becomes steam.
- D When a reservoir of steam in subsurface rock is produced by radioactivity, it is said to be geothermally heated.

Q2 The word “practical” in the passage is closest in meaning to

- A usable
- B plentiful
- C economical

Geothermal Energy

Earth's internal heat, fueled by radioactivity, provides the energy for plate tectonics and continental drift, mountain building, and earthquakes. It can also become available in a practical form when underground heat is transferred by water that is heated as it passes through a subsurface region of hot rocks (a heat reservoir) that may be hundreds or thousands of feet deep. The water is usually naturally occurring groundwater that seeps down along fractures in the rock; less typically, the water is artificially introduced by being pumped down from the surface. The water is brought to the surface, as a liquid or steam, through holes drilled for the purpose.

By far the most abundant form of geothermal energy occurs at the relatively low temperatures of 80° to

D familiar

Paragraph 2

Q3 The word “**abundant**” in the passage is closest in meaning to

- A economical
- B familiar
- C plentiful
- D useful

Q4 According to paragraph 2, which of the following is true about heat reservoirs with a temperature in the range of 80° to 180° centigrade?

- A They are under international control.
- B They are more common than reservoirs that have a higher temperature.
- C Few of them produce enough heat to warm large industrial spaces.
- D They are used to generate electricity.

Paragraph 3

Q5

According to paragraph 3, what is the connection between underground faults and naturally occurring steam?

- A Underground faults enable the heat from molten-rock material to escape upward to regions where it can heat surface water enough to produce steam.
- B Underground faults are created by steam that is produced in geothermal reservoirs deep inside Earth.
- C Underground faults create spaces in which natural steam is sometimes trapped.
- D Underground faults allow surface water to reach deep rocks that are hot enough to turn it into steam.

Q6

In paragraph 3, why does the author mention that in the 1990s the Geysers was in its third decade of production?

- A To provide the historical context of the

180° centigrade. Water circulated through heat reservoirs in this temperature range is able to extract enough heat to warm residential, commercial, and industrial spaces. More than 20,000 apartments in France are now heated by warm underground water drawn from a heat reservoir in a geologic structure near Paris called the Paris Basin. Iceland sits on a volcanic structure known as the Mid-Atlantic Ridge. Reykjavik, the capital of Iceland, is entirely heated by geothermal energy derived from volcanic heat.

Geothermal reservoirs with temperatures above 180° centigrade are useful for generating electricity. They occur primarily in regions of recent volcanic activity as hot, dry rock; natural hot water; or natural steam. The latter two sources are limited to those few areas where surface water seeps down through underground faults or fractures to reach deep rocks heated by the recent activity of molten rock material. The world's largest supply of natural steam occurs at the Geysers, 120 kilometers north of San Francisco, California. In the 1990s enough electricity to meet about half the needs of San Francisco was being generated there. This facility was then in its third decade of production and was beginning to show signs of decline, perhaps because of over development. By the late 1990s some 70 geothermal electric-generating plants were in operation in California, Utah, Nevada, and Hawaii, generating enough power to supply about a million people. Eighteen countries now generate electricity using geothermal heat.

Extracting heat from very hot, dry rocks presents a more difficult problem: the rocks must be fractured to permit the

geothermal production of electricity in the United States

B To imply that the Geysers was the first geothermal site to be put into production in California

C To help explain the signs of decline shown by the Geysers

D To explain why 70 new geothermal sites were put into electricity production in the late 1990s

Q7

Which of the following can be inferred from paragraphs 2 and 3 about geothermal reservoirs?

A Volcanic heat is associated only with geothermal reservoirs that have a temperature over 180°centigrade.

B More countries produce power from geothermal reservoirs than use them for heating buildings.

C Most geothermal reservoirs are suitable for producing electricity.

D A higher geothermal reservoir temperature is needed to generate electricity than is needed to heat homes.

Q8

According to paragraph 4, extracting heat from very hot, dry rocks is difficult in part because

A The underground rock must be fractured before heat can be removed from it.

B The water above the rock is under very high pressure

C The rock breaks apart when water is pumped into it

D The water circulated through the rock must be much cooler than the rock itself

Q9

The word “exploiting” in the passage is closest in meaning to

A locating
B increasing
C making use of

circulation of water, and the water must be provided artificially. The rocks are fractured by water pumped down at very high pressures. Experiments are under way to develop technologies for exploiting this resource.

Like most other energy sources, geothermal energy presents some environmental problems. The surface of the ground can sink if hot groundwater is withdrawn without being replaced. In addition, water heated geothermally can contain salts and toxic materials dissolved from the hot rock. These waters present a disposal problem if they are not returned to the ground from which they were removed.

The contribution of geothermal energy to the world's energy future is difficult to estimate. Geothermal energy is in a sense not renewable, because in most cases the heat would be drawn out of a reservoir much more rapidly than it would be replaced by the very slow geological processes by which heat flows through solid rock into a heat reservoir. However, in many places (for example, California, Hawaii, the Philippines, Japan, Mexico, the rift valleys of Africa) the resource is potentially so large that its future will depend on the economics of production. At present, we can make efficient use of only naturally occurring hot water or steam deposits. Although the potential is enormous, it is likely that in the near future geothermal energy can make important local contributions only where the resource is close to the user and the economics are favorable, as they are in California, New Zealand, and Iceland. Geothermal energy probably will not make large-scale contributions to the world energy budget until well into the twenty-first century, if ever.

D estimating the size of

Q10

How is the problem that the surface man sink related to the problem that water heated geothermally may contain toxic materials?

A Both problems could be solved by returning groundwater that is removed from an underground heat reservoir back to the reservoir after heat is extracted from it.

B The problem of sinking is more difficult to solve than is the problem of toxic materials.

C Land at the surface sinks because the rock beneath the surface is weakened when salts and toxic materials are removed from it in the process of extracting geothermal energy.

D Both problems are caused by the fact that the hot groundwater in a heat reservoir dissolves the rock, which weakens the rock and makes the water toxic with salt.

Q11

Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

A Heat flows through solid rock very slowly, so it takes a very long time for geological processes to produce a reservoir of geothermal energy.

B Geothermal energy is not renewable because heat flows very slowly through solid rock into of our of a heat reservoir.

C The heat quickly removed from a heat reservoir is replaced so slowly by geological processes that geothermal energy is not, practically speaking, renewable.

D In most cases, heat travels into a heat reservoir so slowly that it is a much quicker process to remove the heat from a reservoir than to replace it.

Q12

Paragraph 1

Earth's internal heat, fueled by radioactivity, provides the energy for plate tectonics and continental drift, mountain building, and earthquakes. It can also be harnessed to drive electric generators and heat homes. Geothermal energy becomes available in a practical form when underground heat is transferred by water that is heated as it passed through a subsurface region of hot rocks (a heat reservoir) that may be hundreds or thousands of feet deep. The water is usually naturally occurring groundwater that seeps down along fractures in the rock; less typically, the water is artificially introduced by being pumped down from the surface. The water is brought to the surface, as a liquid or steam, through holes drilled fro the purpose.

In paragraph 6, the author implies that in California, Hawaii, the Philippines, Japan, Mexico, and the rift valleys of Africa the potential size of the geothermal resource is so large that

A It might be economically worth developing these sites even though geothermal energy is not renewable

B These sites will be the first geothermal energy sites to be developed with new technology.

C These sites are likely to make a large-scale contribution to the world energy budget in the twenty-first century

D It does not matter whether they have naturally occurring deposits of hot water or steam.

Q13

Look at the four squares[■]that indicate where the following sentence could be added to the passage.

In either case, the heated water will usually be under considerable pressure, and so may have a temperature that is well above its sea-level boiling point of 100°centigrade.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

Q14

Heat reservoirs in the form of hot rock far beneath Earth's surface are a potential source of usable geothermal energy.

-
-
-

Answer choices

A Heat reservoirs with a temperature from 80°to 180 °centigrade can be used, as in France and Iceland, to heat buildings.

B Most heat reservoirs with a temperature above 180° Centigrade cannot be used for

Earth's internal heat, fueled by radioactivity, provides the energy for plate tectonics and continental drift, mountain building, and earthquakes. It can also be harnessed to drive electric generators and heat homes. Geothermal energy becomes available in a practical form when underground heat is transferred by water that is heated as it passes through a subsurface region of hot rocks (a heat reservoir) that may be hundreds or thousands of feet deep. ■ The water is usually naturally occurring groundwater that seeps down along fractures in the rock; less typically, the water is artificially introduced by being pumped down from the surface. ■ The water is brought to the surface, as a liquid or steam, through holes drilled for the purpose. ■

By far the most abundant form of geothermal energy occurs at the relatively low temperatures of 80°to 180°centigrade.■ Water circulated through heat reservoirs in this temperature range is able to extract enough heat to warm residential, commercial, and industrial spaces. More than 20,000 apartments in France are now heated by warm underground water drawn from a heat reservoir in a geologic structure near Paris called the Paris Basin. Iceland sits on a volcanic structure known as the Mid-Atlantic Ridge.

energy because they are usually too close to recent volcanic activity.

C Experiments are under way to determine if geothermally heated waters could be used as a source of certain minerals that have been dissolved out of hot rocks deep within Earth.

D A number of countries now use geothermal reservoirs that contain water or steam above 180°centigrade to generate electricity.

E The sinking of land above heat reservoirs and water is pumped into a heat reservoir under high pressure.

F A number of issues, including how to extract heat from reservoirs that do not have a natural supply of water , will significantly limit the use of geothermal energy for the foreseeable future.

Reykjavik, the capital of Iceland, is entirely heated by geothermal energy derived from volcanic heat.

一想到新托福，就想到咱老无。

<http://www.ibtsat.com>

Q1 The word “option” in the passage is closest in meaning to

- A Choice
- B Benefit
- C Idea
- D Experience

Q2 According to paragraph 1, all of the following are advantages of hunting and gathering over agriculture EXCEPT:

- A It is healthier lifestyle.
- B It requires less knowledge of plants and animals.
- C It does not need storage capabilities.
- D It is not tied to any specific location.

Q3 The word “therefore” in the passage is closest in meaning to

- A In theory
- B Obviously
- C Frequently

The Origins of Agriculture

How did it come about that farming developed independently in a number of world centers (the southeast Asian mainland, Southwest Asia, Central America, lowland and highland South America, and equatorial Africa) at more or less the same time? Agriculture developed slowly among populations that had an extensive knowledge of plants and animals. Changing from hunting and gathering to agriculture had no immediate advantages. To start with, it forced the population to abandon the nomad's life and become sedentary, to develop methods of storage and, often, systems of irrigation. While hunter-gatherers always had the option of moving elsewhere when the resources were exhausted, this became more difficult with farming. Furthermore, as the archaeological record shows, the state

D As a result

Q4 Which of the following best describes the way paragraph 2 is organized?

- A A possible explanation for a phenomenon is presented and then criticized.
- B Two similar ways of accounting for a puzzling fact are considered.
- C Early societies' response to a problem is contrasted with contemporary societies' response.
- D A prehistoric development is first explained in traditional terms and then in contemporary terms.

Q5 Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A The resources needed by the growing hunting and gathering population increased rapidly once temperatures rose.
- B Dramatic temperature increases and the simultaneous growth of the hunting and gathering population led to the need for more resources.
- C Higher temperatures led to the existence of increased resources, thus enabling the hunting and gathering population to grow.
- D The dramatic temperature increase occurred during the few years when abundant resources allowed the hunting and gathering population to grow.

Q6 According to **paragraph 3**, the abundance of resources fluctuated sharply after the end of the glacial period because

- A Locally abundant resources were quickly exhausted by hunter-gatherers
- B The temperature became much higher in some areas over others
- C Different types of plants and animals became available as the climate changed

of health of agriculturalists was worse than that of their contemporary hunter-gatherers.

Traditionally, it was believed that the transition to agriculture was the result of a worldwide population crisis. It was argued that once hunter-gatherers had occupied the whole world, the population started to grow everywhere and food became scarce; agriculture would have been a solution to this problem. We know, however, that contemporary hunter-gatherer societies control their population in a variety of ways. The idea of a world population crisis is therefore unlikely, although population pressure might have arisen in some areas.

Climatic changes at the end of the glacial period 13, 000 years ago have been proposed to account for the emergence of farming. The temperature increased dramatically in a short period of time (years rather than centuries), allowing for a growth of the hunting-gathering population due to the abundance of resources. There were, however, fluctuations in the climatic conditions, with the consequences that wet conditions were followed by dry ones, so that the availability of plants and animals oscillated brusquely.

It would appear that the instability of the climatic conditions led populations that had originally been nomadic to settle down and develop a sedentary style of life, which led in turn to population growth and to the need to increase the amount of food available. Farming originated in these conditions. Later on, it became very difficult to change because of the significant expansion of these populations. It could be argued, however, that these conditions are not sufficient to explain the origins of

D The amount of rainfall varied radically from one period to the next.

Q7 It can be inferred from **paragraph 4** that it was difficult for people to change from farming back to hunting and gathering because

A People had become more used to different types of food

B Climatic conditions were no longer favorable for hunting and gathering

C Populations had become too large to be supported by hunting and gathering

D The farmer's sedentary life was easier than the hunter-gatherer's nomadic life

Q8 Why does the author state that "earth had experienced previous periods of climatic change, and yet agriculture had not been developed."?

A To suggest that climate change had occurred long before the development of agriculture

B To argue that climate change does not properly explain why agriculture developed

C To challenge the assumption that agriculture developed only in some parts of the world

D To question the claim that climate change occurred at the time when agriculture developed

Q9 The word "imaginative" in the passage is closest in meaning to

A Complex

B Creative

C Immediate

D Reliable

Q10 According to **paragraph 5**, Steven Mithen believes that all of the following contributed to the emergence of farming EXCEPT

A The development of a mind flexible enough to come up with solutions to complex problems

B The tendency to use plants and animals to acquire power

C The tendency to emphasize the differences between animals and people

D The ability to make tools that could be used

agriculture. Earth had experienced previous periods of climatic change, and yet agriculture had not been developed.

It is archaeologist Steven Mithen's thesis, brilliantly developed in his book *The prehistory of the Mind* (1996), that approximately 40,000 years ago the specializations of the mind: technical, natural history (geared to understanding the behavior and distribution of natural resources), social intelligence, and the linguistic capacity. Cognitive fluidity explains the appearance of art, religion, and sophisticated speech. Once humans possessed such a mind, they were able to find an imaginative solution to a situation of severe economic crisis such as the farming dilemma described earlier. Mithen proposes the existence of four mental elements to account for the emergence of farming (1) the ability to develop tools that could be used intensively to harvest and process plant resources; (2) the tendency to use plants and animals as the medium to acquire social prestige and power; (3) the tendency to develop "social relationships" with animals structurally similar to those developed with people—specifically, the ability to think of animals as people (anthropomorphism) and of people as animals (totemism); and (4) the tendency to manipulate plants and animals.

The fact that some societies domesticated animals and plants, discovered the use of metal tools, became literate, and developed a state should not make us forget that others developed pastoralism or horticulture (vegetable gardening) but remained illiterate and at low levels of productivity; a few entered the modern

for the large-scale harvesting of plants

Q11 The word “contention” in the passage is closest in meaning to

- A Investigation
- B Improvement
- C Debate
- D Interpretation

Q12 According to paragraph 6, which of the following is a weakness of Mithen’s explanation?

- A It does not clearly distinguish agriculture from pastoralism and horticulture.
- B It fails to explain why some societies adopted agriculture while others did not.
- C It explains the domestication of plants and animals but not the development of metal tools.
- D It overlooks the fact that illiteracy and low productivity remain problems even today.

Q13 Look at the four squared █ that indicate where the following sentence could be added to the passage.

Because humans had built up this knowledge as hunter-gatherers, it is logical to conclude that over time they would have become extremely efficient.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

Q14 It is unclear why hunter-gatherers in different parts of the world independently developed agriculture at roughly the same time.

Answer choices

A One obstacle to the transition from a nomadic life style to the sedentary lifestyle required by agriculture was that hunter-gatherers had not developed storage techniques.

B It seems unlikely that agriculture emerged in response to a food shortage brought on by a worldwide population crisis that developed once the whole world was occupied.

C The origins of agriculture may be linked to

period as hunting and gathering societies. It is anthropologically important to inquire into the conditions that made some societies adopt agriculture while others remained hunter-gatherers or horticulturalists. However, it should be kept in mind that many societies that knew of agriculture more or less consciously avoided it. Whether Mithen’s explanation is satisfactory is open to contention, and some authors have recently emphasized the importance of other factors.

How did it come about that farming developed independently in a number of world centers (the southeast Asian mainland, Southwest Asia, Central America, lowland and highland South America, and equatorial Africa) at more or less the same time? Agriculture developed slowly among populations that had an extensive knowledge of plants and animals. █ Changing from hunting and gathering to agriculture had no immediate advantages. █ To start with, it forced the population to abandon the nomad’s life and become sedentary, to develop methods of storage and, often, systems of irrigation. █ While hunter-gatherers always had the option of moving elsewhere when the resources were exhausted, this became more difficult with farming. █ Furthermore, as the archaeological record shows, the state of health of agriculturalists was worse than that of their contemporary hunter-gatherers.

climate change at the end of the last ice age, but this does not explain why earlier climatic instability had not led to agriculture.

D The only available means of understanding the social organization and technical abilities of ancient hunter-gatherer societies is the study of contemporary hunter-gatherers.

E One recent theory suggests that the invention of agriculture was made possible by the integration of various mental capacities in the human mind.

F Little is known about why only some societies that adopted agriculture rapidly progressed to using metal tools, becoming literate, and developing a state.

Q1 The word “ample” in the passage is closest in meaning to

- A Surprising
- B Convincing
- C Plentiful
- D Questionable

Q2 According to paragraph 1, infantile amnesia has intrigued psychologists because

- A The ability to recount memories prior to three years of age seems to be connected to intelligence in adulthood
- B Psychologists do not understand why some people are able to recount memories from before the age of three years, while others are not able to do so
- C Psychologists do not understand the connection between infantile amnesia and autobiographical memory
- D Although psychologists have evidence that infants have memory abilities, most people cannot remember life events that happened before the age of three years.

Q3 According to **paragraph 1**, what is the evidence that a child has developed autobiographical memory?

- A The child is able to remember past events

Autobiographical memory

Think back to your childhood and try to identify your earliest memory. How old were you? Most people are not able to recount memories for experiences prior to the age of three years, a phenomenon called infantile amnesia. The question of why infantile amnesia occurs has intrigued psychologists for decades, especially in light of ample evidence that infants and young children can display impressive memory capabilities. Many find that understanding the general nature of autobiographical memory, that is, memory for events that have occurred in one's own life, can provide some important clues to this mystery. Between ages three and four, children begin to give fairly lengthy and cohesive descriptions of events in their past. What factors are responsible for this developmental turning point?

Perhaps the explanation goes back to some ideas raised by influential Swiss psychologist Jean Piaget----namely, that children under age two years represent events in a qualitatively different form

from before the age of three years.

- B The child is able to describe past events in a sufficiently lengthy and cohesive manner.
- C The child is aware that he or she does not remember experiences from before the age of three years.
- D The child is able to give a basic description of the nature of autobiographical memory.

Q4

In **paragraph 2**, why does the author provide the information that children with low verbal skills showed evidence of remembering a past event?

- A To provide evidence that memories do not depend only upon verbal skills
- B To challenge the idea that one year olds are too young to form memories
- C To argue that the memory of one year olds depends only on action-based codes
- D To suggest that Piaget later revised his findings on the correlation between memory and verbal ability.

Q5 The word “reasonable” in the passage is closest in meaning to

- A Consistent
- B Sufficient
- C Apparent
- D Deep

Q6 The word “elaboration” in the passage is closest in meaning to

- A Development
- B Specialization
- C Use
- D Transformation

Q7 According to **paragraph 3**, what is the relationship between autobiographical memory and the development of an understanding of the self?

- A Autobiographical memory aids in the development of an understanding of the self.

than older children do. According to this line of thought, the verbal abilities that blossom in the two year old allow events to be coded in a form radically different from the action-based codes of the infant. Verbal abilities of one year olds are, in fact, related to their memories for events one year later. When researchers had one year olds imitate an action sequence one year after they first saw it, there was correlation between the children’s verbal skills at the time they first saw the event and their success on the later memory task. However, even children with low verbal skills showed evidence of remembering the event; thus, memories may be facilitated by but are not dependent on those verbal skills.

Another suggestion is that before children can talk about past events in their lives, they need to have a reasonable understanding of the self as a psychological entity. The development of an understanding of the self becomes evident between the first and second years of life and shows rapid elaboration in subsequent years. The realization that the physical self has continuity in time, according to this hypothesis, lays the foundation for the emergence of autobiographical memory.

A third possibility is that children will not be able to tell their own “life story” until they understand something about the general form stories take, that is , the structure of narratives. Knowledge about narratives arises from social interactions, particularly the storytelling that children experience from parents and the attempts parents make to talk with children about past events in their lives. When parents talk with children about “what we did today ”or “last week ”or “last year”, they guide the children’s formation of a

B Children possess an understanding of the self when they can talk about past events in their lives.

C The realization that the self continues through time may aid in the onset of autobiographical memory.

D The development of autobiographical memory helps children gain an understanding of their roles in their social relationships.

Q8 All of the following are mentioned in **paragraph 4** as ways in which parents help their children understand the structure of narratives EXCEPT

A Talking with their children about past events

B Telling stories to their children

C Having their children repeat stories back to them

D Showing their children that they think memories are important

Q9 According to paragraph 4, the studies of Caucasian American and Korean children suggest which of the following?

A Autobiographical memories develop similarly across all cultures.

B Parents from different cultures tell their children different kinds of stories about the past.

C Children's pleasure in hearing stories varies from culture to culture.

D The kinds of interactions children have with their parents affect the development of autobiographical memories.

Q10 According to **paragraph 5**, what evidence is there that a “theory of mind” is a factor in the development of autobiographical memory?

A Even children who are not aware of their mental states are still able to talk about past events.

B Autobiographical memory decreases when a child's feelings and mental state are upset.

C Older children who are unable to achieve

framework for talking about the past. They also provide children with reminders about the memory and relay the message that memories are valued as part of the cultural experience. It is interesting to note that some studies show Caucasian American children have earlier childhood memories than Korean children do. Furthermore, other studies show that Caucasian American mother-child pairs talk about past events three times more often than do Korean mother-child pairs. Thus, the types of social experiences children have do factor into the development of autobiographical memories.

A final suggestion is that children must begin to develop a “theory of mind”----an awareness of the concept of mental states (feelings, desires, beliefs, and thoughts), their own and those of others----before they can talk about their own past memories. Once children become capable of answering such questions as “what does it mean to remember?” and “what does it mean to know something?” improvements in memory seem to occur.

It may be that the developments just described are intertwined with and influence one another. Talking with parents about the past may enhance the development of the self-concept, for example, as well as help the child understand what it means to “remember”. No doubt the ability to talk about one's past represents memory of a different level of complexity than simple recognition of recall.

Think back to your childhood and try to identify your earliest memory. How old were you? Most people are not able to recount memories for experiences prior to the age of three years, a phenomenon

awareness of mental states lack autobiographical memory.

D Children's memory of past events grows once children can answer questions about what it means to know and remember.

Q11 The organization of the passage can best be described as

A The presentation of an argument followed by the evidence for and against it

B A description of a phenomenon followed by several possible theories about how it develops

C The definition of a psychological term followed by a history of its usage

D An explanation of a process followed by a discussion of its practical applications.

called infantile amnesia. The question of why infantile amnesia occurs has intrigued psychologists for decades, especially in light of ample evidence that infants and young children can display impressive memory capabilities. Many find that understanding the general nature of autobiographical memory, that is, memory for events that have occurred in one's own life, can provide some important clues to this mystery. Between ages three and four, children begin to give fairly lengthy and cohesive descriptions of events in their past. What factors are responsible for this developmental turning point?

Q12 The passage supports which of the following statements about the development of autobiographical memory?

A It is unlikely that a single factor is responsible for the development of autobiographical memory.

B Jean Piaget was the first psychologist to understand the development of autobiographical memory.

C Understanding the development of autobiographical memory will help psychologists eliminate infant amnesia.

D Understanding what it means to remember is the most important factor in the development of autobiographical memory.

Q13 Look at the four squares■ that indicate where the following sentence could be added to the passage.

It is unlikely that this memory will be from the first two years of life.

Where would the sentence best fit? Click on a square to add the sentence to the passage.

Q14 The ability to construct autobiographical memories—coherent narratives about events from one's past---is probably the joint product

Think back to your childhood and try to identify your earliest memory. How old were you? ■ Most people are not able to recount memories for experiences prior to the age of three years, a phenomenon called infantile amnesia. The question of why infantile amnesia■ occurs has intrigued psychologists for decades, especially in light of ample evidence that infants and young children can display impressive memory capabilities. ■ Many find that understanding the general nature of autobiographical memory, that is, memory for events that have occurred in one's own life, can provide some important clues to this mystery. ■ Between ages three and four, children begin to give fairly lengthy and cohesive

of several social and intellectual developments.

Answer choices

- A Although children are capable of simple recognition and recall very early in life, they do not develop the capacity for autobiographical memory until the age of three or four years.
- B Verbal skills and familiarity with narrative structures probably aid in the construction of autobiographical memories.
- C Children's earliest autobiographical memories are usually about social interactions with parents.
- D Research suggests that infantile amnesia occurs in some cultures but not in others and may be linked to children's social experiences.
- E The development of autobiographical memory allows children to appreciate the fact that memories are an important part of their cultural experience.
- F Children who have acquired a concept of the self and of various mental states are generally able to talk about their own past memories.

descriptions of events in their past. What factors are responsible for this developmental turning point?

TPO22

1. According to paragraph 1, each of the following is true of *Spartina alterniflora* EXCEPT:
- A. It rarely flowers in salt marshes.
 - B. It grows well in intertidal zones.
 - C. It is commonly referred to as cordgrass.
 - D. It occurs naturally along the Gulf Coast and the Atlantic coast of the United States.
2. According to paragraph 2, a major reason why natural salt marshes are so productive is that they are
- A. inhabited by long-lived seaweed and marsh grasses that reproduce gradually

Spartina

Spartina alterniflora, known as cordgrass, is a deciduous, perennial flowering plant native to the Atlantic coast and the Gulf Coast of the United States. It is the dominant native species of the lower salt marshes along these coasts, where it grows in the intertidal zone (the area covered by water some parts of the day and exposed others).

These natural salt marshes are among the most productive habitats in the marine environment. Nutrient-rich water is

- B. kept clear of excess plant material by the tides
- C. regularly supplied with high levels of nutrients
- D. home to a wide variety of different species of grasses

3. Which of the sentences below best express the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Insects feed only on dead cordgrass, while most other marsh inhabitants feed on live cordgrass.
- B. The marsh is a good habitat for insects, but a relatively poor one for birds and animals.
- C. Although cordgrass provides food for birds and animals, it gives insects both food and a place to live.
- D. Cordgrass provides food for numerous insects, birds, and other animals.

4. What is the organizational structure of paragraph 3?

- A. It makes a general claim about *Spartina* and then provides specific evidence to defend that claim against objections to the claim.
- B. It presents a general characterization of *Spartina* and then describes particular features on which this characterization is based.
- C. It reports a widely held view about *Spartina* and then considers evidence both for and against that view.
- D. It presents a general hypothesis about *Spartina* and then lists specific evidence that disputes that hypothesis.

5. The word "exceedingly" in the passage is closest in meaning to

- A. unusually
- B. dangerously
- C. surprisingly

brought to the wetlands during each high tide, making a high rate of food production possible. As the seaweed and marsh grass leaves die, bacteria break down the plant material, and insects, small shrimplike organisms, fiddler crabs, and marsh snails eat the decaying plant tissue, digest it, and excrete wastes high in nutrients. Numerous insects occupy the marsh, feeding on living or dead cordgrass tissue, and redwing blackbirds, sparrows, rodents, rabbits, and deer feed directly on the cordgrass. Each tidal cycle carries plant material into the offshore water to be used by the subtidal organisms.

Spartina is an exceedingly competitive plant. It spreads primarily by underground stems; colonies form when pieces of the root system or whole plants float into an area and take root or when seeds float into a suitable area and germinate. *Spartina* establishes itself on substrates ranging from sand and silt to gravel and cobble and is tolerant of salinities ranging from that of near freshwater (0.05 percent) to that of salt water (3.5 percent). Because they lack oxygen, marsh sediments are high in sulfides that are toxic to most plants. *Spartina* has the ability to take up sulfides and convert them to sulfate, a form of sulfur that the plant can use; this ability makes it easier for the grass to colonize marsh environments. Another adaptive advantage is *Spartina*'s ability to use carbon dioxide more efficiently than most other plants.

These characteristics make *Spartina* a valuable component of the estuaries where it occurs naturally. The plant functions as a stabilizer and a sediment

- D. highly
6. According to paragraph 3, one reason that *Spanina* is able to compete in marsh environments so successfully is its ability to
- A. alter the substrate in which it grows
 - B. convert sulfides into a usable form of sulfur
 - C. grow and produce seeds while floating on the surface of the water
 - D. produce carbon dioxide with great efficiency
7. Paragraph 4 suggests that where *Spanina* occurs naturally, an established stand of it will eventually
- A. create conditions in which it can no longer survive
 - B. get washed away by water flowing through the deep channels that form around it
 - C. become adapted to brackish water
 - D. take over other grass species growing in the area
8. According to paragraph 4, in its natural habitats, *Spanina* helps estuaries by
- A. controlling marshland decline
 - B. decreasing the substrate elevation
 - C. reducing the brackishness of the water
 - D. increasing the flow of water into the estuary
9. The word "modifies" in the passage is closest in meaning to
- A. creates
 - B. changes
 - C. grows on
 - D. breaks down
10. The word "Efforts" in the passage is closest in meaning to
- A. Laws
 - B. Suggestions
 - C. Attempts
 - D. Failures

trap and as a nursery area for estuarine fish and shellfish. Once established, a stand of *Spartina* begins to trap sediment, changing the substrate elevation, and eventually the stand evolves into a high marsh system where *Spartina* is gradually displaced by higher-elevation, brackish-water species. As elevation increases, narrow, deep channels of water form throughout the marsh. Along the east coast *Spartina* is considered valuable for its ability to prevent erosion and marshland deterioration; it is also used for coastal restoration projects and the creation of new wetland sites.

Spartina was transported to Washington State in packing materials for oysters transplanted from the east coast in 1894. Leaving its insect predators behind, the cordgrass has been spreading slowly and steadily along Washington's tidal estuaries on the west coast, crowding out the native plants and drastically altering the landscape by trapping sediment. *Spartina* modifies tidal mudflats, turning them into high marshes inhospitable to the many fish and waterfowl that depend on the mudflats. It is already hampering the oyster harvest and the Dungeness crab fishery, and it interferes with the recreational use of beaches and waterfronts. *Spartina* has been transplanted to England and to New Zealand for land reclamation and shoreline stabilization. In New Zealand the plant has spread rapidly, changing mudflats with marshy fringes to extensive salt meadows and reducing the number and kinds of birds and animals that use the marsh.

Efforts to control *Spartina* outside its

11. According to paragraph 5, *Spanina* negatively affects wildlife in estuaries by
- A. trapping fish and waterfowl in sediment
 - B. preventing oysters from transplanting successfully
 - C. turning mudflats into high marshes and salt meadows
 - D. expanding the marshy fringes of salt meadows

12. According to paragraph 6, each of the following methods has been used in attempts to control *Spanina* EXCEPT

- A. flooding plants
- B. cutting plants down repeatedly
- C. applying herbicides
- D. introducing predatory insects

13. Look at the four squares [Ⓐ] [Ⓑ] [Ⓒ] and [Ⓓ] that indicate where the following sentence could be added to the passage.

***Spartina* is particularly able to tolerate high salinities because salt glands on the surface of the leaves remove the salt from the plant sap.**

Where would the sentence best fit?

14.

***Spanina alrerniflora*, or cordgrass, is the dominant native species in salt marshes along the Atlantic coast and the Gulf Coast of the United States.**

Click on 3 answers.

- A. *Spartina* is very well adapted to conditions in salt marshes, where it plays a valuable role in stabilizing them and making them highly productive marine habitats.
- B. *Spartina* expands by growing root systems that float on the water's surface and descend underground, where it finds the nutrients that it needs to germinate.
- C. As a result of its spread in Washington State over the past hundred years, *Spartina* has now become a threat to native oysters by

natural environment have included burning, flooding, shading plants with black canvas or plastic, smothering the plants with dredged materials or clay, applying herbicide, and mowing repeatedly. Little success has been reported in New Zealand and England; Washington State's management program has tried many of these methods and is presently using the herbicide glyphosphate to control its spread. Work has begun to determine the feasibility of using insects as biological controls, but effective biological controls are considered years away. Even with a massive effort, it is doubtful that complete eradication of *Spartina* from nonnative habitats is possible, for it has become an integral part of these shorelines and estuaries during the last 100 to 200 years.

Spartina is an exceedingly competitive plant. Ⓢ It spreads primarily by underground stems; colonies form when pieces of the root system or whole plants float into an area and take root or when seeds float into a suitable area and germinate. Ⓣ *Spartina* establishes itself on substrates ranging from sand and silt to gravel and cobble and is tolerant of salinities ranging from that of near freshwater (0.05 percent) to that of salt water (3.5 percent). Ⓤ Because they lack oxygen, marsh sediments are high in sulfides that are toxic to most plants. Ⓥ *Spartina* has the ability to take up sulfides and convert them to sulfate, a form of sulfur that the plant can use; this ability makes it easier for the grass to colonize marsh environments. Another adaptive advantage is *Spartina*'s ability

- releasing sediments that contain sulfides into the waters.
- D. The dead leaves of *Spartina* become food for a wide variety of marine organisms.
- E. Outside its native regions, *Spartina* can pose serious problems by turning mudflats into high marshes that are inhospitable to many native fish and birds.
- F. *Spartina* has physiological adaptations that allow it to grow in environments where other plants cannot, making it a very strong competitor that is difficult to control once it is established.
-

1. What can be inferred from paragraphs 1 and 2 about the effect of photography on nineteenth-century painting?
 - A. Photography did not significantly change the way people looked at reality.
 - B. Most painters used the images of the camera obscura in preference to those of the daguerreotype.
 - C. Painters who were concerned with realistic or naturalistic representation were particularly influenced by photography.
 - D. Artists used the long-awaited invention of photography in just the ways they had expected to.
2. The word "duplicated" in the passage is closest in meaning to
 - A. copied
 - B. replaced
 - C. handled
 - D. clarified
3. The phrase "Its general effect" in the passage refers to
 - A. the camera lens
 - B. the calotype
 - C. the etching

to use carbon dioxide more efficiently than most other plants.

The Birth of Photography

Perceptions of the visible world were greatly altered by the invention of photography in the middle of the nineteenth century. In particular, and quite logically, the art of painting was forever changed, though not always in the ways one might have expected. The realistic and naturalistic painters of the mid- and late-nineteenth century were all intently aware of photography—as a thing to use, to learn from, and react to.

Unlike most major inventions, photography had been long and impatiently awaited. The images produced by the camera obscura, a boxlike device that used a pinhole or lens to throw an image onto a ground-glass screen or a piece of white paper, were already familiar—the device had been much employed by topographical artists like the Italian painter Canaletto in his detailed views of the city of Venice. What was lacking was a way of giving such images permanent form. This was finally achieved by Louis Daguerre

D. the engraving

4. According to paragraphs 2 and 3 which of the following did the daguerreotype and the calotype have in common?

- A. They were equally useful for artists.
- B. They could be reproduced.
- C. They produced a permanent image
- D. They were produced on treated paper.

5. The word "authenticity" in the passage is closest in meaning to

- A. improvement
- B. practicality
- C. genuineness
- D. repetition

6. What point does the author make in paragraph 6?

- A. Paintings became less expensive because of competition with photography.
- B. Photography, unlike painting, was a type of portraiture that even ordinary people could afford.
- C. Every style of painting was influenced by the invention of photography.
- D. The daguerreotype was more popular than the calotype.

7. The word "reluctant" in the passage is closest in meaning to

- A. unable
- B. embarrassed
- C. unlikely
- D. unwilling

8. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Photography did not replace other fine arts because people felt the image looked cheap in relation to the other arts.

(1787-1851), who perfected a way of fixing them on a silvered copper plate. His discovery, the "daguerreotype," was announced in 1839.

A second and very different process was patented by the British inventor William Henry Talbot (1800-1877) in 1841. Talbot's "calotype" was the first negative-to-positive process and the direct ancestor of the modern photograph. The calotype was revolutionary in its use of chemically treated paper in which areas hit by light became dark in tone, producing a negative image. This "negative," as Talbot called it, could then be used to print multiple positive images on another piece of treated paper.

The two processes produced very different results. The daguerreotype was a unique image that reproduced what was in front of the camera lens in minute, unselective detail and could not be duplicated. The calotype could be made in series, and was thus the equivalent of an etching or an engraving. Its general effect was soft edged and tonal.

One of the things that most impressed the original audience for photography was the idea of authenticity. Nature now seemed able to speak for itself, with a minimum of interference. The title Talbot chose for his book, *The Pencil of Nature* (the first part of which was published in 1844), reflected this feeling. Artists were fascinated by photography because it offered a way of examining the world in much greater detail. They were also afraid of it, because it seemed likely to make their own efforts unnecessary.

- B. Photography was not considered a true art because people could use it to create many images cheaply.
- C. Photography was so cheap and readily available that it could be purchased by people who were too poor to purchase fine art.
- D. Photography not only spread quickly but also was a cheap art form and so became true successor of fine arts rather than its poor relation.

9. The word "unanticipated" in the passage is closest in meaning to

- A. indirect
- B. not expected
- C. unquestionable
- D. beneficial

10. The word "accidental" in the passage is closest in meaning to

- A. surprising
- B. unintentional
- C. realistic
- D. unusual

11. Which of the following is mentioned in paragraph 8 as a benefit that artists derived from photography?

- A. It inspired artists to use technological themes in their painting.
- B. It lent prestige to those artists who used photographs as models for paintings
- C. It provided artists with new types of equipment to speed up the painting process.
- D. It motivated artists to think about new ways to compose images in their paintings.

12. It can be inferred from paragraph 8 that one effect that photography had on painting was that it

- A. provided painters with new insights into how humans and animals actually move
- B. showed that representing movement could

Photography did indeed make certain kinds of painting obsolete—the daguerreotype virtually did away with the portrait miniature. It also made the whole business of making and owning images democratic. Portraiture, once a luxury for the privileged few, was suddenly well within the reach of many more people.

In the long term, photography's impact on the visual arts was far from simple. Because the medium was so prolific, in the sense that it was possible to produce a multitude of images very cheaply, it was soon treated as the poor relation of fine art, rather than its destined successor. Even those artists who were most dependent on photography became reluctant to admit that they made use of it, in case this compromised their professional standing.

The rapid technical development of photography—the introduction of lighter and simpler equipment, and of new emulsions that coated photographic plates, film, and paper and enabled images to be made at much faster speeds—had some unanticipated consequences. Scientific experiments made by photographers such as Eadweard Muybridge (1830-1904) and Etienne-Jules Marey (1830-1904) demonstrated that the movements of both humans and animals differed widely from the way they had been traditionally represented in art. Artists, often reluctantly, were forced to accept the evidence provided by the camera. The new candid photography—unposed pictures that were made when the subjects were unaware that their pictures were being taken—confirmed these scientific results, and at the same time,

- be as interesting as portrait art
- C. increased the appeal of painted portraiture among the wealthy
- D. influenced artists to improve techniques for painting faster

13. Look at the four squares HI that indicate where the following sentence could be added to the passage

Although his process produced permanent images, each was unique and no reproduction of the picture was possible.

Where would the sentence best fit?

Click on a square [■] to add the sentence to the passage.

14.

The invention of photography had a significant impact on the art of painting in the nineteenth century.

Answer Choices

- A. For a brief time, artists preferred not to paint natural or realistic images that would have to compete with photographs.
- B. Before photography, Canaletto had used the camera obscura to project scenes onto a paper or glass plate.
- C. The photographic processes of Louis Daguerre and William Henry Talbot both made permanent images, but only Talbot's process allowed making multiple copies.
- D. The work of Eadweard Muybridge and Etienne-Jules Marey established photography both as a science and as an art.
- E. Photography made accurate images widely and inexpensively available, but this popular success also had the effect of lowering its perceived value in relation to the fine arts.
- F. Photography eliminated the painted portrait miniature, led artists to accurately represent movement, and affected pictorial composition, but did not replace traditional visual arts.

thanks to the radical cropping (trimming) of images that the camera often imposed, suggested new compositional formats. The accidental effects obtained by candid photographers were soon being copied by artists such as the French painter Degas.

Unlike most major inventions, photography had been long and impatiently awaited. The images produced by the camera obscura, a boxlike device that used a pinhole or lens to throw an image onto a ground-glass screen or a piece of white paper, were already familiar—the device had been much employed by topographical artists like the Italian painter Canaletto in his detailed views of the city of Venice. What was lacking was a way of giving such images permanent form. This was finally achieved by Louis Daguerre (1787-1851), who perfected a way of fixing them on a silvered copper plate. His discovery, the "daguerreotype," was announced in 1839.■

A second and very different process was patented by the British inventor William Henry Talbot (1800-1877) in 1841.■ Talbot's "calotype" was the first negative-to-positive process and the direct ancestor of the modern photograph. The calotype was revolutionary in its use of chemically treated paper in which areas hit by light became dark in tone, producing a negative image.■ This "negative," as Talbot called it, could then be used to print multiple positive images on another piece of treated paper.■

15. The word "location" in the passage is closest in meaning to

- A. sight
- B. sake
- C. success
- D. place

16. Which of the following can be inferred from paragraph 1 about the large meteor that entered Earth's atmosphere on February 8, 1969?

- A. It was almost ten miles wide.
- B. It was the biggest meteor ever to hit Mexico.
- C. It weighed more than two tons.
- D. It broke into more pieces than most meteors do.

17. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Allende meteorites were formed when constituents of the interstellar cloud of gas and dust got trapped inside small, roughly spherical objects and these objects became bound together in a dark gray matrix.
- B. Inside Allende meteorites is a dark gray matrix that binds together small spherical or irregular objects formed from the interstellar cloud of gas and dust out of which the solar system was made.
- C. By breaking open Allende meteorites, scientists were able to find out what the solar nebula was made of.
- D. Allende meteorites were filled with material formed almost entirely from interstellar gas and dust.

18. The word "allusion" in the passage is closest in meaning to

The Allende Meteorite

Sometime after midnight on February 8, 1969, a large, bright meteor entered Earth's atmosphere and broke into thousands of pieces, plummeted to the ground, and scattered over an area 50 miles long and 10 miles wide in the state of Chihuahua in Mexico. The first meteorite from this fall was found in the village of Pueblito de Allende. Altogether, roughly two tons of meteorite fragments were recovered, all of which bear the name Allende for the location of the first discovery.

Individual specimens of Allende are covered with a black, glassy crust that formed when their exteriors melted as they were slowed by Earth's atmosphere. When broken open, Allende stones are revealed to contain an assortment of small, distinctive objects, spherical or irregular in shape and embedded in a dark gray matrix (binding material), which were once constituents of the solar nebula—the interstellar cloud of gas and dust out of which our solar system was formed.

The Allende meteorite is classified as a chondrite. Chondrites take their name from the Greek word *chondros*—meaning "seed"—an allusion to their appearance as rocks containing tiny seeds. These seeds are actually chondrules: millimeter-sized melted droplets of silicate material that were cooled into spheres of glass and crystal. A few chondrules contain grains that survived the melting event, so these enigmatic chondrules must have formed

- A. addition
- B. modification
- C. resemblance
- D. reference

19. The word "enigmatic" in the passage is closest in meaning to

- A. dangerous
- B. mysterious
- C. interesting
- D. surprising

20. According to paragraph 3, what does the presence of grains inside some of the chondrules indicate?

- A. The chondrules were formed of silicate material.
- B. The chondrules were formed at high temperatures and then cooled rapidly.
- C. The grains were formed in huge areas of the solar nebula
- D. The grains were formed after the chondrules were fused together into chondrites.

21. According to paragraph 4, all of the following are true about the minerals found in the refractory inclusions EXCEPT:

- A. These minerals are among the most resistant to melting of all the major elements in the solar nebula.
- B. These minerals are believed to be some of the first elements to have condensed out of the solar nebula.
- C. These minerals are among the least commonly found elements on Earth.
- D. These elements occur in the order that scientists would have predicted.

22. The word "pristine" in the passage is closest in meaning to

- A. pure
- B. solid
- C. ordinary
- D. trapped

when compact masses of nebular dust were fused at high temperatures—approaching 1,700 degrees Celsius—and then cooled before these surviving grains could melt. Study of the textures of chondrules confirms that they cooled rather quickly, in times measured in minutes or hours, so the heating events that formed them must have been localized. It seems very unlikely that large portions of the nebula were heated to such extreme temperatures, and huge nebula areas could not possibly have lost heat so fast. Chondrules must have been melted in small pockets of the nebula that were able to lose heat rapidly. The origin of these peculiar glassy spheres remains an enigma.

Equally perplexing constituents of Allende are the refractory inclusions: irregular white masses that tend to be larger than chondrules. They are composed of minerals uncommon on Earth, all rich in calcium, aluminum, and titanium, the most refractory (resistant to melting) of the major elements in the nebula. The same minerals that occur in refractory inclusions are believed to be the earliest-formed substances to have condensed out of the solar nebula. However, studies of the textures of inclusions reveal that the order in which the minerals appeared in the inclusions varies from inclusion to inclusion, and often does not match the theoretical condensation sequence for those metals.

Chondrules and inclusions in Allende are held together by the chondrite matrix, a mixture of fine-grained, mostly silicate minerals that also includes grains of iron metal and iron sulfide. At one time it was

23. According to paragraph 5, which of the following is indicated by studies of the mixture holding the inclusions together?

- A. Large amounts of this material were formed by condensation or melting in the nebula.
- B. This material contains more iron and iron sulfide than had previously been thought.
- C. This material is very similar to the material from which the refractory inclusions are made
- D. The grains in this material are made from the same elements as chondrules are.

24. In paragraph 6, why does the author mention that "the Sun has many more atoms of any element, say iron, than does a meteorite specimen"?

- A. To show how difficult it is to compare the composition of a meteorite with that of the Sun
- B. To explain why a comparison of the compositions of a meteorite and of the Sun has to be done in terms of ratios of elements
- C. To identify the most common element in both the Sun and meteorite specimens
- D. To emphasize how much larger the Sun is than any meteorite specimen

25. According to paragraph 6, the composition of chondritic meteorites differs from the composition of the Sun primarily in

- A. containing nebular matter
- B. containing many fewer atoms of iron
- C. the relative amount of volatile elements
- D. the ratio of iron to silicon

26. According to paragraph 6, what is the significance of the similarity in composition between chondrites and the Sun?

- A. It indicates what the matter from which planets were formed was probably like.
- B. It may explain how the Sun originally developed.

thought that these matrix grains might be pristine nebular dust, the sort of stuff from which chondrules and inclusions were made. However, detailed studies of the chondrite matrix suggest that much of it, too, has been formed by condensation or melting in the nebula, although minute amounts of surviving interstellar dust are mixed with the processed materials.

All these diverse constituents are aggregated together to form chondritic meteorites, like Allende, that have chemical compositions much like that of the Sun. To compare the compositions of a meteorite and the Sun, it is necessary that we use ratios of elements rather than simply the abundances of atoms. After all, the Sun has many more atoms of any element, say iron, than does a meteorite specimen, but the ratios of iron to silicon in the two kinds of matter might be comparable. The compositional similarity is striking. The major difference is that Allende is depleted in the most volatile elements, like hydrogen, carbon, oxygen, nitrogen, and the noble gases, relative to the Sun. These are the elements that tend to form gases even at very low temperatures. We might think of chondrites as samples of distilled Sun, a sort of solar sludge from which only gases have been removed. Since practically all the solar system's mass resides in the Sun, this similarity in chemistry means that chondrites have average solar system composition, except for the most volatile elements; they are truly lumps of nebular matter, probably similar in composition to the matter from which planets were assembled.

- C. It helps scientists estimate the variations in the chemical composition of different meteoroids.
- D. It suggests that most meteorites may contain large quantities of volatile elements.

27. Look at the four squares [■] that indicate where the following sentence could be added to the passage

It is therefore still unclear if all inclusions were formed in the same way.

Where would the sentence best fit?

28.

Studies of the Allende meteorite provided information about the composition of chondritic meteorites and their possible origin.

Answer Choices

- A. When Allende entered Earth's atmosphere, it broke into thousands of pieces called chondrites because they look like glassy, black seeds.
- B. The mineral content of chondrules suggests that they were probably formed in isolated regions of the nebula that remained much hotter than the rest.
- C. Chondrules are tiny, millimeter-sized drops of silicate materials that probably formed when lumps of nebular dust were fused at extremely high temperatures and then quickly cooled.
- D. Irregularly shaped inclusions in Allende are composed of minerals that are resistant to melting and are believed to be the earliest minerals to have condensed out of the nebula.
- E. The matrix that holds the chondrules and inclusions together in Allende consists mainly of grains of nebular dust that were trapped inside the meteor before they could be melted.
- F. Except for being depleted in volatile elements, chondritic meteorites are probably

Equally perplexing constituents of Allende are the refractory inclusions: irregular white masses that tend to be larger than chondrules. ■ They are composed of minerals uncommon on Earth, all rich in calcium, aluminum, and titanium, the most refractory (resistant to melting) of the major elements in the nebula. ■ The same minerals that occur in refractory inclusions are believed to be the earliest-formed substances to have condensed out of the solar nebula. ■ However, studies of the textures of inclusions reveal that the order in which the minerals appeared in the inclusions varies from inclusion to inclusion, and often does not match the theoretical condensation sequence for those metals.

■

very similar in composition to the matter from which planets were assembled.

TPO 23

1. The word “enormous” in the passage is closest in meaning to
 - A. growing
 - B. frightening
 - C. very large
 - D. strictly controlled

2. The word “surpass” in the passage is closest in meaning to
 - A. remain below
 - B. be higher than
 - C. add to
 - D. come close to

3. According to paragraph 2, how soon heat from a warmed house reaches the outside air greatly affected by
 - A. how well the house is heated
 - B. how well the house is insulated
 - C. how many adults live in the house
 - D. how much sunshine the house receives

4. According to paragraph 3, each of the following contributes to making urban areas warmer than the surrounding countryside EXCEPT
 - A. the fuel burned by motor vehicles
 - B. the capacity to store heat of the materials used in building a city
 - C. the easy flow of heat into the ground in city areas covered by vegetation
 - D. the repeated reflection of solar radiation back and forth among buildings

5. According to paragraph 3, why do materials in the countryside have a lower heat capacity

Urban Climates

The city is an extraordinary processor of mass and energy and has its own metabolism. A daily input of water, food, and energy of various kinds is matched by an output of sewage, solid waste, air pollutants, energy, and materials that have been transformed in some way. The quantities involved are enormous. Many aspects of this energy use affect the atmosphere of a city, particularly in the production of heat.

In winter the heat produced by a city can equal or surpass the amount of heat available from the Sun. All the heat that warms a building eventually transfers to the surrounding air, a process that is quickest where houses are poorly insulated. But an automobile produces enough heat to warm an average house in winter, and if a house were perfectly insulated, one adult could also produce more than enough heat to warm it. Therefore, even without any industrial production of heat, an urban area tends to be warmer than the countryside that surrounds it.

The burning of fuel, such as by cars, is not the only source of this increased heat. Two other factors contribute to the higher overall temperature in cities. The first is the heat capacity of the materials that constitute the city, which is typically dominated by concrete and asphalt.

than materials in cities do?

- A. In the countryside in the Sun is the only important source of heat.
- B. Construction materials in the city are not as good at keeping buildings warm as they are in the countryside.
- C. In the countryside the solar heat that flows into the ground flows out again quickly.
- D. Countryside vegetation prevents heat from being trapped in the ground.

6. How is paragraph 3 organized?

- A. It describes two factors that contribute to the increased heat of cities and then provides two causes for the second factor.
- B. It describes two causes discovered in an early analysis of the increased heat of cities.
- C. It describes two factors that contribute to the increased heat of cities and two other factors that work against it.
- D. It describes two well-established causes of the increased heat of cities and other two whose roles are less well understood.

7. The word “configuration” in the passage is closest in meaning to

- A. location
- B. history
- C. temperature
- D. shape

8. According to paragraph 4, what can explain the substantial differences in temperature between one area and other within a well-developed heat island?

- A. The overall size of the heat island that includes the two reasons
- B. The intensify of the heat island that includes the two areas
- C. Differences between the two areas in the general level of activity, including traffic
- D. Differences between the two areas in the insulation materials used in construction

During the day, heat from the Sun can be conducted into these materials and stored—to be released at night. But in the countryside materials have a significantly lower heat capacity because a vegetative blanket prevents heat from easily flowing into and out of the ground. The second factor is that radiant heat coming into the city from the Sun is trapped in two ways: (1) by a continuing series of reflection among the numerous vertical surfaces that buildings present and (2) by the dust dome, the cloudlike layer of polluted air that most cities produce. Shortwave radiation from the Sun passes through the pollution dome more easily than outgoing longwave radiation does; the latter is absorbed by the gaseous pollutants of the dome and reradiated back to the urban surface.

Cities, then, are warmer than the surrounding rural areas, and together they produce a phenomenon known as the urban heat island. Heat islands develop best under particular conditions associated with light winds, but they can form almost any time. The precise configuration of a heat island depends on several factors. For example, the wind can make a heat island stretch in the direction it blows. When a heat island is well developed, variations can be extreme; in winter, busy streets in cities can be 1.7°C warmer than the side streets. Areas near traffic lights can be similarly warmer than the areas between them because of the effect of cars standing in traffic instead of moving. The maximum differences in temperature between neighboring urban and rural environments is called the heat-island intensity for that region. In general, the larger the city, the greater its heat-island

9. Paragraph 4 supports the idea that a city's heat-island intensity would increase if
- A. the city went into an economic decline and lost population
 - B. the city's economy shifted from heavy industry to health care and education
 - C. there was an upward trend in the average age of the city's residents
 - D. repair work on the streets slowed traffic throughout the city
10. According to paragraph 5, surfaces in the city are generally drier than surfaces in the countryside between periods of rainfall because
- A. in the city gentle rain is much more common than heavy rain
 - B. high temperatures in the city speed up the process of evaporation
 - C. in the city there are longer periods of dry weather between episodes of rain
 - D. rainwater in the city cannot soak into most surfaces and quickly runs off
11. The word “modified” in the passage is closest in meaning to
- A. changed
 - B. blocked
 - C. increased
 - D. weakened
12. According to paragraph 5, which of the following is a factor responsible for the greater air turbulence in urban environments?
- A. The high speed of the winds travelling above cities
 - B. The greater rainfall totals recorded in cities
 - C. Attempts to reduce urban air pollution
 - D. The effects of tall buildings on airflow
13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

Another possibility is for the heat island to be stretched along the course of major

intensity. The actual level of intensity depends on such factors as the physical layout, population density, and productive activities of a metropolis.

The surface-atmosphere relationships inside metropolitan areas produce a number of climatic peculiarities. For one thing, the presence or absence of moisture is affected by the special qualities of the urban surface. With much of the built-up landscape impenetrable by water, even gentle rain runs off almost immediately from rooftops, streets, and parking lots. Thus, city surfaces, as well as the air above them, tend to be drier between episodes of rain; with little water available for the cooling process of evaporation, relative humidities are usually lower. Wind movements are also modified in cities because buildings increase the friction on air flowing around them. This friction tends to slow the speed of winds, making them far less efficient at dispersing pollutants. On the other hand, air turbulence increases because of the effect of skyscrapers on airflow. Rainfall is also increased in cities. The cause appears to be in part greater turbulence in the urban atmosphere as hot air rises from the built-up surface.

Cities, then, are warmer than the surrounding rural areas, and together they produce a phenomenon known as the

rivers, since large waterways typically have a warming effect on the air directly above them.

Where would the sentence best fit?

14. Cities create climatic conditions of their own through their physical structure and urban activities.

Answer Choices

- A. The amount of heat produced in a city will be reduced when cities use the heat from cars to warm homes.
- B. The built-up landscape of the city readily becomes a heat island, with greater water runoff and special climatic conditions such as low relative humidity and increased air turbulence.
- C. The materials from which cities are built and the effects of pollution domes help make urban areas warmer than rural areas.
- D. Cities tend to be warmer than their surrounding areas, in part because they produce heat by burning fuel for heating, powering vehicles, and industrial production.
- E. In most cities, the heating that results from solar radiation is intensified by carbon dioxide, a gas that is present at very high concentrations in cities' atmospheres.
- F. During periods without rainfall, the air in cities heats up and causes winds to slow down, with the result that pollutants are not dispersed.

urban heat island. Heat islands develop best under particular conditions associated with light winds, but they can form almost any time. ■The precise configuration of a heat island depends on several factors. ■For example, the wind can make a heat island stretch in the direction it blows. ■When a heat island is well developed, variations can be extreme; in winter, busy streets in cities can be 1.7°C warmer than the side streets. ■Areas near traffic lights can be similarly warmer than the areas between them because of the effect of cars standing in traffic instead of moving. The maximum differences in temperature between neighboring urban and rural environments is called the heat-island intensity for that region. In general, the larger the city, the greater its heat-island intensity. The actual level of intensity depends on such factors as the physical layout, population density, and productive activities of a metropolis.

1. By indicating that production was in line with market demands the author means that Dutch farmers were able to

- A. exceed other European countries in agricultural production
- B. produce crops that were similar to those popular in other European countries
- C. supply sufficient quantities of the

Seventeenth-Century Dutch Agriculture

Agriculture and fishing formed the primary sector of the economy in the Netherlands in the seventeenth century. Dutch agriculture was modernized and commercialized new crops and agricultural techniques raised levels of

- agricultural products that the Dutch population wanted to buy
- D. satisfy the demand for high quality agricultural products from the Baltic region

2. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Buying imported grain led to the Dutch demanding that other foodstuffs and consumer goods be imported.
- B. Because the Dutch were able to import inexpensive grain, they had money available to create a demand for other food products and consumer goods.
- C. Keeping the price of grain low was a primary goal of the Dutch at a time when they could not produce enough grain to provide for all their needs.
- D. The demand for other foodstuffs and consumer goods forced the Dutch to import grain and other products at a time when maintaining low prices was especially important.

3. The phrase “Apart from” in the passage is closest in meaning to

- A. Besides
B. Despite
C. As a result of
D. Instead of

4. According to paragraph 2, the increases demands on Dutch agriculture made by urban consumers had which of the following results?

- A. Seasonal shortages of the products consumers most wanted
- B. Increased production of high-quality grain products
- C. Raised prices charged by peasants to urban consumers
- D. Different ways of caring for

production so that they were in line with market demands, and cheap grain was imported annually from the Baltic region in large quantities. According to estimates, about 120,000 tons of imported grain fed about 600,000 people: that is about a third of the Dutch population. Importing the grain, which would have been expensive and time consuming for the Dutch to have produced themselves, kept the price of grain low and thus stimulated individual demand for other foodstuffs and consumer goods.

Apart from this, being able to give up labor-intensive grain production freed both the land and the workforce for more productive agricultural divisions. The peasants specialized in livestock husbandry and dairy farming as well as in cultivating industrial crops and fodder crops: flax, madder, and rape were grown, as were tobacco, hops, and turnips. These products were bought mostly by urban businesses. There was also a demand among urban consumers for dairy products such as butter and cheese, which, in the sixteenth century, had become more expensive than grain. The high prices encouraged the peasants to improve their animal husbandry techniques; for example, they began feeding their animals indoors in order to raise the milk yield of their cows.

In addition to dairy farming and cultivating industrial crops, a third sector of the Dutch economy reflected the way in which agriculture was being modernized-horticulture. In the sixteenth century, fruit and vegetables were to be found only in gardens belonging to wealthy people. This changed in the

- dairy-producing animals
5. The word “consumption” in the passage is closest in meaning to
- A. sale
 - B. storage
 - C. exportation
 - D. utilization
6. According to paragraph 3, the modernization of agriculture in the Netherlands was evident in all of the following ways EXCEPT:
- A. The production of fruits and vegetables became a commercial venture.
 - B. The wealthy stopped growing fruits and vegetables in their gardens and grew flowers instead.
 - C. Horticultural produce was transported to city markets by water.
 - D. Many more people were able to afford to eat fresh fruits and vegetables.
7. Select the TWO answer choices that, according to paragraph 4, indicate two methods people used to increase the productivity of their land. To receive credit you must select TWO answers
- A. They planted different crops in different sections of the farm each year.
 - B. They used improved irrigation methods to increase the yield of crops.
 - C. They increased the use of fertilizers to supply more nutrients to plants.
 - D. They used new horticultural practices to produce different varieties of plants in the same section of the farm.
8. The word “they” in the passage refers to
- A. merchants
 - B. hectares
 - C. windmills
 - D. drainage pumps
9. According to paragraph 5, which of the

early part of the seventeenth century when horticulture became accepted as an agricultural sector. Whole villages began to cultivate fruit and vegetables. The produce was then transported by water to markets in the cities, where the consumption of fruit and vegetables was no longer restricted to the wealthy.

As the demand for agricultural produce from both consumers and industry increased, agricultural land became more valuable and people tried to work the available land more intensively and to reclaim more land from wetlands and lakes. In order to increase production on existing land, the peasants made more use of crop rotation and, in particular, began to apply animal waste to the soil regularly, rather than leaving the fertilization process up to the grazing livestock. For the first time industrial waste, such as ash from the soap-boilers, was collected in the cities and sold in the country as artificial fertilizer. The increased yield and price of land justified reclaiming and draining even more land.

The Dutch battle against the sea is legendary. Noorderkwartier in Holland, with its numerous lakes and stretches of water, was particularly suitable for land reclamation and one of the biggest projects undertaken there was the draining of the Beemster lake which began in 1608. The richest merchants in Amsterdam contributed money to reclaim a good 7,100 hectares of land. Forty-three windmills powered the drainage pumps so that they were able to lease the reclamation to farmers as early as 1612, with the investors receiving annual leasing payments at an interest rate of 17 percent. Land reclamation

following was an important reason why land-reclamation projects in the first half of the seventeenth century proceeded rapidly?

- A. Windmills became powerful enough to run drainage pumps efficiently.
- B. Merchants invested large amounts of money in reclamation.
- C. High interest rates discouraged people from buying land already available.
- D. Reclaimed land was much more suitable for agriculture than the existing land.

10. The word “legendary” in the passage is closest in meaning to

- A. continuous
- B. well documented
- C. famous
- D. expensive

11. The word “astonishing” in the passage is closest in meaning to

- A. incredible
- B. unfortunate
- C. predicted
- D. evident

12. Which of the following best describes the organization of the passage?

- A. A presentation of a theory and the evidence in favor of it
- B. A general statement followed by examples and relevant details
- C. A analysis of a problem and its solution
- D. A series of statements leading to a conclusion

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage

Some villages specialized in growing cabbages and carrots; others grew onions, mustard, and coriander; and still others produced fruit and cultivated trees in nurseries.

Where would the sentence best fit?

continued, and between 1590 and 1665, almost 100,000 hectares were reclaimed from the wetland areas of Holland, Zeeland, and Friesland. However, land reclamation decreased significantly after the middle of the seventeenth century because the price of agricultural products began to fall, making land reclamation far less profitable in the second part of the century.

Dutch agriculture was finally affected by the general agricultural crisis in Europe during the last two decades of the seventeenth century. However, what is **astonishing** about this is not that Dutch agriculture was affected by critical phenomena such as a decrease in sales and production, but the fact that the crisis appeared only relatively late in Dutch agriculture. In Europe as a whole, the exceptional reduction in the population and the related fall in demand for grain since the beginning of the seventeenth century had caused the price of agricultural products to fall. Dutch peasants were able to remain unaffected by this crisis for a long time because they had specialized in dairy farming industrial crops, and horticulture. However, toward the end of the seventeenth century, they too were overtaken by the general agricultural crisis.

In addition to dairy farming and cultivating industrial crops, a third sector of the Dutch economy reflected the way in which agriculture was being modernized-horticulture. ■In the sixteenth century, fruit and vegetables

14. Agriculture formed one of the primary sectors of the economy in seventeenth-century Netherlands.

- A. The Baltic region produced large quantities of grain for export to other regions, including the Netherlands.
- B. The richest people grew enough fruits and vegetables to supply the entire country with fresh produce.
- C. An agricultural crisis that began in Europe did not affect Dutch land-reclamation projects.
- D. Specialization in dairy farming, industrial crops, and horticulture allowed the Dutch to be more productive than some other regions in Europe.
- E. Land reclamation and improvement allowed the Dutch to meet demands for their agricultural products.
- F. Because the Dutch had specialized their agricultural output they were less susceptible to the crisis that Europe experienced from the beginning of the century.

were to be found only in gardens belonging to wealthy people. ■ This changed in the early part of the seventeenth century when horticulture became accepted as an agricultural sector. ■ Whole villages began to cultivate fruit and vegetables. ■ The produce was then transported by water to markets in the cities, where the consumption of fruit and vegetables was no longer restricted to the wealthy.

1. The word “infrequent” in the passage is closest in meaning to

- A. puzzling
- B. uncommon
- C. questionable
- D. undocumented

2. According to paragraph 1, the twentieth-century approach to studying Australian rock art was different from earlier approaches because the twentieth-century approach

- A. recognized that many different groups of Aborigines created Australian rock art
- B. concentrated on a limited range of

Rock Art of the Australia Aborigines

Ever since European first explored Australia, people have been trying to understand the ancient rock drawings and carvings created by the Aborigines, the original inhabitants of the continent. Early in the nineteenth century, encounters with Aboriginal rock art tended to be infrequent and open to speculative interpretation, but since the late nineteenth century, awareness of the extent and variety of Australian rock art has been growing. In the latter decades of the twentieth century there were

- Aboriginal rock art
- C. examined Aboriginal art from an Aboriginal rather than from a European perspective
 - D. focused more intensely on understanding and documenting rock art
3. The word “relatively” in the passage is closest in meaning to
- A. completely
 - B. comparatively
 - C. apparently
 - D. particularly
4. The word “discern” in the passage is closest in meaning to
- A. indicate
 - B. apply
 - C. identify
 - D. repeat
5. The word “revised” in the passage is closest in meaning to
- A. discussed
 - B. raised
 - C. challenged
 - D. changed
6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave ways or leave out essential information
- A. The oldest rock art sites have simpler motifs than the best known sites of Panaramitee North.
 - B. Because motifs primarily associated with the Panaramitee region are common in the oldest sites the term Panaramitee style has become the general term for rock art of this type.
 - C. Because the Panaramitee style is so common in the older sites, researchers have described it most extensively.
 - D. The motifs carved in the rocky surface of

intensified efforts to understand and record the abundance of Australian rock art.

The systematic study of this art is a relatively new discipline in Australia. Over the past four decades new discoveries have steadily added to the body of knowledge. The most significant data have come from a concentration on three major questions. First, what is the age of Australian rock art? Second, what is its stylistic organization and is it possible to discern a sequence or a pattern of development between styles? Third, is it possible to interpret accurately the subject matter of ancient rock art, bring to bear all available archaeological techniques and the knowledge of present-day Aboriginal informants?

The age of Australia's rock art is constantly being revised, and earlier datings have been proposed as the result of new discoveries. Currently, reliable scientific evidence dates the earliest creation of art on rock surfaces in Australia to somewhere between 30,000 and 50,000 years ago. This in itself is an almost incomprehensible span of generations, and one that makes Australia's rock art the oldest continuous art tradition in the world.

Although the remarkable antiquity of Australia's rock art is now established, the sequences and meanings of its images have been widely debated. Since the mid-1970s, a reasonably stable picture has formed of the organization of Australian rock art. In order to create a sense of structure to this picture, researchers have relied on a distinction

- the Panaramitee region make up the oldest form of rock art discovered in Australia.
7. According to paragraph 4, researchers have organized and structured Australian rock art by distinguishing between which of the following?
- A. Images found at Panaramitee North and images found in other parts of Australia
 - B. Images found in a particular type of rock layer and images found in other types of rock layers
 - C. Images that have geometric elements and images that have figurative elements
 - D. Images that are typically found and images that are rarely found
8. According to paragraph 4, all of the following are signs of the great age of the Panaramitee engravings EXCEPT:
- A. The engravings consisted of simple animal drawings.
 - B. The engravings were covered with a layer of a substance known as “desert varnish”.
 - C. Local Aborigines who were asked knew nothing about the origin of the engravings.
 - D. Geologic changes had occurred after the engravings were made.
9. Why does the author include information about Tasmania in paragraph 4?
- A. To provide evidence that the Panaramitee style is widespread and of great age
 - B. To prove that Aboriginal Australians could not have made the carvings in Tasmania
 - C. To indicate how researchers have determined how long ago Tasmania separated from the mainland
 - D. To illustrate the importance of geometric rock art to tourism in Tasmania
10. According to paragraph 5, the complex figurative style differs from the geometric style in that the complex figurative style
- A. varies significantly from region to region

that still underlies the forms of much indigenous visual culture—a distinction between geometric and figurative elements. Simple geometric repeated patterns—circles, concentric circles, and lines—constitute the iconography (characteristic images) of the earliest rock-art sites found across Australia. The frequency with which certain simple motifs appear in these oldest sites has led rock-art researchers to adopt a descriptive term—the Panaramitee style—a label which takes its name from the extensive rock pavements at Panaramitee North in desert South Australia, which are covered with motifs pecked into the surface. Certain features of these engravings lead to the conclusion that they are of great age—geological changes had clearly happened after the designs had been made and local Aboriginal informants, when first questioned about them, seemed to know nothing of their origins. Furthermore, the designs were covered with “desert varnish,” a glaze that develops on rock surfaces over thousands of years of exposure to the elements. The simple motifs found at Panaramitee are common to many rock-art sites across Australia. Indeed, sites with engravings of geometric shapes are also to be found on the island of Tasmania, which was separated from the mainland of the continent some 10,000 years ago.

In the 1970s when the study of Australian archaeology was in an exciting phase of development, with the great antiquity of rock art becoming clear. Lesley Maynard, the archaeologist who coined the phrase “Panaramitee style,” suggested that a sequence could be determined for Australian rock art, in

- B. is more meaningful
- C. appears on only a few types of rocks
- D. has changed little overtime

11. According to paragraph 5, Lesley Maynard made which of the following suggestions about Australian rock art?

- A. There were a pattern of human figures being represented in a more complex style than animal figures.
- B. Australian archaeology should concentrate on determining the sequence of styles that led up to the Panaramitee style.
- C. The great antiquity of Australian rock art would probably make it impossible to determine the ages of the various styles found in rock art.
- D. The geometric style of Australian rock art was replaced by increasingly complex figurative styles.

12. In paragraph 5, the author indicates that twentieth century art has shown that naturalism does not necessarily follow abstraction in some kind of predetermined sequence in order to

- A. emphasize that it may not be possible to determine what the figures in ancient rock art represent
- B. suggest a reply to those who have questioned Maynard's interpretation of the sequence of Australian rock art
- C. provide a counterexample to Maynard's interpretation of the sequence of Australian rock art
- D. indicate that twentieth century art is more advanced than ancient rock art

13. Look at the four squares [■] that indicate where the following sentence could be added to the passage

While a great deal of information exists, the answers to these questions are not yet definitive.

Where would the sentence best fit?

which a geometric style gave way to a simple figurative style (outlines of figures and animals), followed by a range of complex figurative styles that, unlike the pan-Australian geometric tradition tended to much greater regional diversity. While accepting that this sequence fits the archaeological profile of those sites, which were occupied continuously over many thousands of years a number of writers have warned that the underlying assumption of such a sequence—a development from the simple and the geometric to the complex and naturalistic—obscures the cultural continuities in Aboriginal Australia, in which geometric symbolism remains fundamentally important. In this context the simplicity of a geometric motif may be more apparent than real. Motifs of seeming simplicity can encode complex meanings in Aboriginal Australia. And has not twentieth-century art shown that naturalism does not necessarily follow abstraction in some kind of predetermined sequence?

Paragraph 2: Third, is it possible to interpret accurately the subject matter of ancient rock art, bring to bear all available archaeological techniques and the knowledge of present-day Aboriginal

14. Interest in the rock art of the original inhabitants of Australia has grown over the last two centuries.
- A. Late nineteenth century studies of Aboriginal rock art failed to recognize that a variety of styles existed.
 - B. The extreme age of the earliest Aboriginal rock art has been established but the interpretation of rock art images is still debated.
 - C. A sequence from geometric to more representative art fits many sites but does not necessarily indicate a progression from simple to complex meaning.
 - D. In determining the way in which Australian rock art was organized, archaeologists have made little distinction between geometric and figurative elements.
 - E. Older examples of rock art consist of simple, repeated geometric patterns while later rock art includes figures and animals.
 - F. Aboriginal informants were able to explain the meanings of ancient rock art symbols.
- ~~~~~
~~~~~

informants? ■

Paragraph 3: The age of Australia's rock art is constantly being revised, and earlier datings have been proposed as the result of new discoveries. ■ Currently, reliable scientific evidence dates the earliest creation of art on rock surfaces in Australia to somewhere between 30,000 and 50,000 years ago. ■ This in itself is an almost incomprehensible span of generations, and one that makes Australia's rock art the oldest continuous art tradition in the world. ■

## TPO 24

### Lake Water

1. The phrase **So much** in the passage refers to
  - A. the negative effects of overland flow, rain, and evaporation on river water levels
  - B. water that a lake loses to outflowing rivers, to the lake bed, and to evaporation
  - C. the importance of rivers to the maintenance of lake water levels
  - D. the information given about ways that water can enter or exit a lake
2. The word **gains** in the passage is closest in meaning to

Where does the water in a lake come from, and how does water leave it? Water enters a lake from inflowing rivers, from underwater seeps and springs, from overland flow off the surrounding land, and from rain falling directly on the lake surface. Water leaves a lake via outflowing rivers, by soaking into the bed of the lake, and by evaporation. **So much** is obvious.

The questions become more complicated when actual volumes of water are

- A. results
  - B. increases
  - C. resources
  - D. savings
3. Which of the following can be inferred from paragraph 2 about the movement of water into a lake?
- A. Heavy rain accounts for most of the water that enters into lakes.
  - B. Rainfall replaces approximately the amount of water lost through evaporation.
  - C. Overland flow into lakes is reduced by the presence of forests.
  - D. Seepage has a smaller effect on water level than any other input.
4. Why does the author use the phrase Note the word "net" in the passage?
- A. To emphasize the impact of seepage on water levels
  - B. To point out that seepage is calculated differently from river flows and atmospheric exchanges
  - C. To compare the different methods of calculating seepage
  - D. To emphasize the difficulty of obtaining specific values for seepage inputs and outputs
5. The word **Conversely** meaning to
- A. on the other hand
  - B. in the same way
  - C. in other words
  - D. on average
6. According to paragraph 3, which of the following best describes a seepage-dominated lake?
- A. A lake that is fed by streams but still has fluctuating water levels
  - B. A lake with a constant water level that has no streams or rivers as inputs
  - C. A lake with a stream flowing into it and a

considered: how much water enters and leaves by each route? Discovering the inputs and outputs of rivers is a matter of measuring the discharges of every inflowing and outflowing stream and river. Then exchanges with the atmosphere are calculated by finding the difference between the gains from rain, as measured (rather roughly) by rain gauges, and the losses by evaporation, measured with models that correct for the other sources of water loss. For the majority of lakes, certainly those surrounded by forests, input from overland flow is too small to have a noticeable effect. Changes in lake level not explained by river flows plus exchanges with the atmosphere must be due to the net difference between what seeps into the lake from the groundwater and what leaks into the groundwater. Note the word "net": measuring the actual amounts of groundwater seepage into the lake and out of the lake is a much more complicated matter than merely inferring their difference.

Once all this information has been gathered, it becomes possible to judge whether a lake's flow is mainly due to its surface inputs and outputs or to its underground inputs and outputs. If the former are greater, the lake is a surface-water-dominated lake; if the latter, it is a seepage-dominated lake. Occasionally, common sense tells you which of these two possibilities applies. For example, a pond in hilly country that maintains a steady water level all through a dry summer in spite of having no streams flowing into it must obviously be seepage dominated. Conversely, a pond with a stream flowing in one end and out the other, which dries up when the stream dries up, is clearly surface water dominated.

- stream flowing out of it
- D. A lake that has surface and underground inputs but loses water during dry seasons
7. It can be inferred from paragraph 4 that the length of time a given molecule of water remains in a lake
- A. depends entirely upon the average speed of a lake's currents
  - B. can be measured by the volume of the lake alone
  - C. can be greater or lesser than the residence time
  - D. is similar to the length of time all other molecules remain in that lake
8. According to paragraph 5, Lake Erie's residence time is lower than Lake Ontario's for which of the following reasons?
- A. Lake Erie has a larger area than Lake Ontario.
  - B. Lake Ontario is shallower than Lake Erie.
  - C. Lake Ontario has a greater volume than Lake Erie.
  - D. Lake Erie receives less rainfall than Lake Ontario.
9. Why does the author discuss the Great Lakes in paragraph 5?
- A. To demonstrate the extent to which residence times vary from lake to lake
  - B. To illustrate how residence times are calculated for specific lakes
  - C. To argue that the residence time of a lake increases with area
  - D. To emphasize that Lake Tahoe's residence time is unusually long
10. According to paragraph 5, major ceremonial events were occasions for
- A. leaders to persuade people from the countryside to move into a pueblo
  - B. farmers to collect information about where

By whatever means, a lake is constantly gaining water and losing water: its water does not just sit there, or, anyway, not for long. This raises the matter of a lake's residence time. The residence time is the average length of time that any particular molecule of water remains in the lake, and it is calculated by dividing the volume of water in the lake by the rate at which water leaves the lake. The residence time is an average; the time spent in the lake by a given molecule (if we could follow its fate) would depend on the route it took: it might flow through as part of the fastest, most direct current, or it might circle in a backwater for an indefinitely long time. Residence times vary enormously. They range from a few days for small lakes up to several hundred years for large ones; Lake Tahoe, in California, has a residence time of 700 years. The residence times for the Great Lakes of North America, namely, Lakes Superior, Michigan, Huron, Erie, and Ontario, are, respectively, 190, 100, 22, 2.5, and 6 years. Lake Erie's is the lowest: although its area is larger than Lake Ontario's, its volume is less than one-third as great because it is so shallow-less than 20 meters on average. A given lake's residence time is by no means a fixed quantity. It depends on the rate at which water enters the lake, and that depends on the rainfall and the evaporation rate. Climatic change (the result of global warming?) is dramatically affecting the residence times of some lakes in northwestern Ontario, Canada. In the period 1970 to 1986, rainfall in the area decreased from 1,000 millimeters to 650 millimeters per annum, while above-average temperatures speeded up the evapotranspiration rate (the rate at which water is lost to the atmosphere through evaporation and the processes of

- crops could be reliably grown
- C. people to develop better techniques for producing pottery and crafts
- D. people in the early Puebloan era to share farm and craft products

11. According to paragraph 6, which of the following explains the increase in residence time of lakes in northwestern Ontario?

- A. The amount of water flowing into the lakes has increased.
- B. The rate of evaporation has decreased more sharply than the amount of rainfall.
- C. The renewal of the lakes' water has slowed due to changes in climate.
- D. Plants have required less water from the lakes.

12. According to paragraph 6, residence time is affected by all of the following EXCEPT

- A. amount of rainfall
- B. rate of evaporation
- C. temperature of surrounding air
- D. concentration of chemicals in lake water

13. Look at the four squares III that indicate where the following sentence could be added to the passage.

**Of course, a lake may be neither surface-water-nor seepage-dominated if, for example, its inputs are predominantly surface and its outputs are predominantly seepage.**

Where would the sentence best fit? Click on a square to add the sentence to the passage.

#### 14. Water enters, remains, and eventually leaves a lake in a variety of ways.

- A. By measuring the water quantities at each of a lake's inputs and outputs, it can be determined whether water enters the lake mainly from surface or groundwater sources.
- B. Changes in lake level and volume are caused principally by the amount of

plant life).

The result has been that the residence time of one of the lakes increased from 5 to 18 years during the study period. The slowing down of water renewal leads to a chain of further consequences; it causes dissolved chemicals to become increasingly concentrated, and this, in turn, has a marked effect on all living things in the lake.

---

Once all this information has been gathered, it becomes possible to judge whether a lake's flow is mainly due to its surface inputs and outputs or to its underground inputs and outputs. [■] If the former are greater, the lake is a surface-water-dominated lake; if the latter, it is a seepage-dominated lake. [■] Occasionally, common sense tells you which of these two possibilities applies. [■] For example, a pond in hilly country that maintains a steady water level all through a dry summer in spite of having no streams flowing into it must obviously be seepage dominated. Conversely, a pond with a stream flowing in one end and out the other, which dries up when

- evaporation of water into the atmosphere.
- C. It is sometimes possible to decide whether a lake is surface water dominated or seepage dominated by simple observation at different seasons.
  - D. The average period of time that molecules of water spend in a lake—the residence time—varies from lake to lake and overtime within a particular lake.
  - E. The residence times of surface-water-dominated lakes are usually longer than those of seepage-dominated lakes.
  - F. The residence time of a lake frequently depends on the kinds of organisms to be found in the lake.

the stream dries up, is clearly surface water dominated. [■]

1. According to paragraph 1, which of the following can be inferred about the diaphragm during sleep?
  - A. During sleep the diaphragm requires increased movement of the rib cage.
  - B. The diaphragm helps with breathing as movements of the rib cage decrease during sleep.
  - C. The diaphragm requires a great amount of pressure to function properly.
  - D. The diaphragm contributes to the effective functioning of the rib cage.
2. According to paragraph 2, all of the following are true of the voluntary breathing system EXCEPT:
  - A. It has its control center in the brain stem.
  - B. It controls breathing for a number of activities during wakefulness.
  - C. It is able to bypass the automatic system.
  - D. It produces an irregular breathing pattern.
3. The word **exclusive** in the passage is closest in meaning to
  - A. consistent

### Breathing During Sleep

Of all the physiological differences in human sleep compared with wakefulness that have been discovered in the last decade, changes in respiratory control are most dramatic. Not only are there differences in the level of the functioning of respiratory systems, there are even changes in how they function. Movements of the rib cage for breathing are reduced during sleep, making the contractions of the diaphragm more important. Yet because of the physics of lying down, the stomach applies weight against the diaphragm and makes it more difficult for the diaphragm to do its job. However, there are many other changes that affect respiration when asleep.

During wakefulness, breathing is controlled by two interacting systems. The first is an automatic, metabolic system whose control is centered in the brain stem. It subconsciously adjusts breathing rate and depth in order to regulate the levels of carbon dioxide ( $\text{CO}_2$ ) and oxygen ( $\text{O}_2$ ),

- B. perfect
- C. partial
- D. sole

4. According to paragraph 3, which of the following may occur just before NREM sleep begins?

- A. The automatic, metabolic system may increase its dependence on air exchanges.
- B. Breathing can stop for a short time as a person falls asleep.
- C. An increase in the oxygen level in the blood can occur as sleep becomes fully obtained.
- D. The level of carbon dioxide in the blood may drop suddenly.

5. What is the author's purpose in stating that inhaling is like sucking air out of a balloon?

- A. To refute the argument that additional effort is necessary for breathing during sleep
- B. To argue that REM sleep is more important than NREM sleep
- C. To illustrate the difficulty of breathing during sleep
- D. To illustrate how blockage of narrow passages can be prevented during sleep

6. All of the following are mentioned in paragraph 4 as being characteristic of breathing during sleep EXCEPT

- A. relaxation of the muscles involved in the respiratory system
- B. changes in resistance between the two sides of the nose
- C. easier airflow in the passages of the upper airway
- D. absence of certain complex muscle interactions

7. According to paragraph 5, what happens during NREM sleep when inhaling is difficult?

- A. There is an immediate, automatic, adaptive increase in breathing effort.
- B. The sleeping person takes several

and the acid-base ratio in the blood. The second system is the voluntary, behavioral system. Its control center is based in the forebrain, and it regulates breathing for use in speech, singing, sighing, and so on. It is capable of ignoring or overriding the automatic, metabolic system and produces an irregular pattern of breathing.

During NREM (the phase of sleep in which there is no rapid eye movement) breathing becomes deeper and more regular, but there is also a decrease in the breathing rate, resulting in less air being exchanged overall. This occurs because during NREM sleep the automatic, metabolic system has **exclusive** control over breathing and the body uses less oxygen and produces less carbon dioxide. Also, during sleep the automatic metabolic system is less responsive to carbon dioxide levels and oxygen levels in the blood. Two things result from these changes in breathing control that occur during sleep. First, there may be a brief cessation or reduction of breathing when falling asleep as the sleeper waxes and wanes between sleep and wakefulness and their differing control mechanisms. Second, once sleep is fully obtained, there is an increase of carbon dioxide and a decrease of oxygen in the blood that persists during NREM.

But that is not all that changes. During all phases of sleep, several changes in the air passages have been observed. It takes twice as much effort to breathe during sleep because of greater resistance to airflow in the airways and changes in the efficiency of the muscles used for breathing. Some of the muscles that help keep the upper airway open when breathing tend to become more relaxed during sleep, especially during REM (the phase of sleep

- inadequate breaths before the breathing effort is adjusted.
- C. The coughing reflex causes the breathing effort to adjust.
  - D. The airways become cleared as the blood removes irritants.

8. It can be inferred from paragraph 5 that a very mild irritation during sleep will likely cause the sleeping person to

- A. increase the breathing effort
- B. wake up and remove the source of irritation
- C. cough while still sleeping
- D. stop breathing temporarily while still sleeping

9. The word **considerable** meaning to

- A. significant
- B. Steady
- C. Usual
- D. necessary

10. The word **resume** in the passage is closest in meaning to

- A. reduce
- B. stop
- C. Readjust
- D. restart

11. Which of the sentences below best expresses the essential information in the **highlighted sentence** in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Because breathing is more shallow and irregular in REM than in NREM, less air is exchanged in REM.
- B. Breathing in NREM is less effective than breathing in REM because of irregular episodes of rapid breathing during NREM.
- C. Because breathing is more rapid in NREM sleep than in REM sleep, breathing often becomes shallow.
- D. Although REM has brief episodes of

in which there is rapid eye movement). Without this muscular action, **inhaling** is like sucking air out of a balloon—the narrow passages tend to collapse. Also there is a regular cycle of change in resistance between the two sides of the nose. If something blocks the "good" side, such as congestion from allergies or a cold, then resistance increases dramatically. Coupled with these factors is the loss of the complex interactions among the muscles that can change the route of airflow from nose to mouth.

Other respiratory regulating mechanisms apparently cease functioning during sleep. For example, during wakefulness there is an immediate, automatic, adaptive increase in breathing effort when inhaling is made more difficult (such as breathing through a restrictive face mask). This reflexive adjustment is totally absent during NREM sleep. Only after several inadequate breaths under such conditions, resulting in the **considerable** elevation of carbon dioxide and reduction of oxygen in the blood, is breathing effort adjusted. Finally, the coughing reflex in reaction to irritants in the airway produces not a cough during sleep but a cessation of breathing. If the irritation is severe enough, a sleeping person will arouse, clear the airway, then **resume** breathing and likely return to sleep.

Additional breathing changes occur during REM sleep that are even more dramatic than the changes that occur during NREM. The amount of air exchanged is even lower in REM than NREM because, although breathing is more rapid in REM, it is also more irregular, with brief episodes of shallow breathing or absence of breathing. In addition, breathing during REM depends much more on the action of the diaphragm and much less on rib

shallow breathing or lack of breathing, breathing is more rapid than in NREM.

12. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

**To better understand breathing during sleep, it is, however, helpful to first understand how respiration works in general.**

Where would the sentence best fit? Click on a square to add the sentence to the passage

13. **Directions:** From the seven statements below, select the statements that correctly characterize breathing during

wakefulness and those statements that correctly characterize breathing during sleep. Drag each answer choice you select

into the appropriate box of the table. Two of the answer choices will NOT be used. **This question is worth 3 points.**

- Wakefulness
- Sleep

#### Answer Choices

- A. The role of the rib cage increases and the role of the diaphragm decreases.
- B. Carbon dioxide in blood rises and oxygen drops.
- C. The coughing reflex is extremely complex.
- D. A great deal of effort is used for breathing.
- E. Upper airways are resistant to colds and allergies.
- F. There is a drop in the volume of air that is exchanged.
- G. Automatic and voluntary respiratory systems are both involved.

cage action.

---

paragraph1: Movements of the rib cage for breathing are reduced during sleep, making the contractions of the diaphragm more important. [■] Yet because of the physics of lying down, the stomach applies weight against the diaphragm and makes it more difficult for the diaphragm to do its job. [■] However, there are many other changes that affect respiration when asleep.

paragraph2: [■] During wakefulness, breathing is controlled by two interacting systems. [■] The first is an automatic, metabolic system whose control is centered in the brain stem. It subconsciously adjusts breathing rate and depth in order to regulate the levels of carbon dioxide (CO<sub>2</sub>) and oxygen (O<sub>2</sub>), and the acid-base ratio in the blood. The second system is the voluntary, behavioral system. Its control center is based in the forebrain, and it regulates breathing for use in speech, singing, sighing, and so on. It is capable of ignoring or overriding the automatic, metabolic system and produces an irregular pattern of breathing.

---

#### Moving into Pueblos

In the Mesa Verde area of the ancient North American Southwest, living patterns changed in the thirteenth

1. The word **traumatic** meaning to
- A. Essential
  - B. highly stressful

- C. highly unusual  
D. unwise
2. The word **intense** in the passage is closest in meaning to  
A. strong  
B. questionable  
C. obvious  
D. deliberate
3. According to paragraph 1, before the thirteenth century the people of southwestern North America lived in  
A. households that  
B. occupied dwellings that were built into the sides of cliffs  
C. were largely free to conduct their lives as they pleased  
D. enforced common standards of behavior and cooperative conduct within their communities
4. Which of the following best indicates the organization of paragraph 1?  
A. It presents the conditions that caused a change in a population's living patterns and then explains why those conditions got worse.  
B. It identifies certain present-day cultural traditions and rules and then traces them to their roots in the thirteenth century.  
C. It casts doubt on one explanation of the move to pueblos and then introduces an alternative explanation that the passage will defend.  
D. It describes a major change in a population's living patterns and then presents a number of problems that resulted from that change.
5. According to paragraph 3, which of the following was one of the consequences of increasing population densities?  
A. People were increasingly crowded into collections of large housing units.

century, with large numbers of people moving into large communal dwellings called pueblos, often constructed at the edges of canyons, especially on the sides of cliffs. Abandoning small extended-family households to move into these large pueblos with dozens if not hundreds of other people was probably **traumatic**. Few of the cultural traditions and rules that today allow us to deal with dense populations existed for these people accustomed to household autonomy and the ability to move around the landscape almost at will. And besides the awkwardness of having to share walls with neighbors, living in aggregated pueblos introduced other problems. For people in cliff dwellings, hauling water, wood, and food to their homes was a major chore. The stress on local resources, especially in the firewood needed for daily cooking and warmth, was particularly **intense**, and conditions in aggregated pueblos were not very hygienic.

Given all the disadvantages of living in aggregated towns, why did people in the thirteenth century move into these closely packed quarters? For transitions of such suddenness, archaeologists consider either pull factors (benefits that drew families together) or push factors (some external threat or crisis that forced people to aggregate). In this case, push explanations dominate.

Population growth is considered a particularly influential push. After several generations of population growth, people packed the landscape in densities so high that communal pueblos may have been a necessary outcome. Around Sand Canyon, for example, populations grew from 5 -12 people per square kilometer in the tenth century to as many as 30 - 50 by

- B. People stopped planting crops that have relatively low yields.
- C. Domestic buildings were pushed beyond the canyon limits.
- D. The natural landscape was destroyed.

6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A. Some scholars even claim that the intensification of farmers' various efforts during the 1200s led to further population growth and the consequent need for more arable land.
- B. Evidence of intensifying agriculture in the 1200s indicates a need to feed a larger population and so extends the argument that a growing population was the cause of the move to pueblos.
- C. ◦ During the 1200s, farmers met the demand for more arable land, but they also succeeded in cultivating existing land more intensively with the help of agricultural construction projects.
- D. ◦ Some scholars feel strongly that the construction of small dams, reservoirs, terraces, and field houses in the thirteenth century is independent evidence for growth in the number of people.

7. The word transition in the passage is closest in meaning to

- A. change
- B. climate
- C. decline
- D. problem

8. Why does the author state that "Growing food at these elevations is always difficult because of the short growing season"?

- A. To explain why the higher elevations were always relatively sparsely populated

the 1200s. As densities increased, domestic architecture became larger, culminating in crowded pueblos. Some scholars expand on this idea by emphasizing a corresponding need for arable land to feed growing numbers of people: construction of small dams, reservoirs, terraces, and field houses indicates that farmers were intensifying their efforts during the 1200s. Competition for good farmland may also have prompted people to bond together to assert rights over the best fields.

Another important push was the onset of the Little Ice Age, a climatic phenomenon that led to cooler temperatures in the Northern Hemisphere. Although the height of the Little Ice Age was still around the corner, some evidence suggests that temperatures were falling during the thirteenth century. The environmental changes associated with this transition are not fully understood, but people living closest to the San Juan Mountains, to the northeast of Mesa Verde, were affected first. Growing food at these elevations is always difficult because of the short growing season. As the Little Ice Age progressed, farmers probably moved their fields to lower elevations, infringing on the lands of other farmers and pushing people together, thus contributing to the aggregations. Archaeologists identify a corresponding shift in populations toward the south and west toward Mesa Verde and away from higher elevations.

In the face of all these pushes, people in the Mesa Verde area had yet another reason to move into communal villages: the need for greater cooperation. Sharing and cooperation were almost certainly part of early Puebloan life, even for people living in largely independent

- B. To suggest that any worsening of conditions would have significant consequences
- C. To emphasize how resourceful the people growing food at these elevations were
- D. To argue that farming was not the primary source of food at high elevations

9. According to paragraph 4, what did farmers do in response to falling temperatures during the Little Ice Age?

- A. Moved to areas away from Mesa Verde
- B. Moved closer to the northeastern part of Mesa Verde
- C. Began to cultivate crops adapted to a short growing season
- D. Gave up the cultivation of the highest-lying lands

10. According to paragraph 5, major ceremonial events were occasions for

- A. leaders to persuade people from the countryside to move into a pueblo
- B. farmers to collect information about where crops could be reliably grown
- C. people to develop better techniques for producing pottery and crafts
- D. people in the early Puebloan era to share farm and craft products

11. According to paragraph 5, which of the following was a reason people in the Mesa Verde area formed communal villages in the thirteenth century?

- A. The climate in the Mesa Verde area became more locally diverse.
- B. Individuals were no longer interested in exchanging pottery and food.
- C. Cooperation between people became more important for survival.
- D. Bad years of farming began to occur more frequently.

12. Paragraph 5 supports which of the following statements about cooperation among the people

single-household residences scattered across the landscape. Archaeologists find that even the most isolated residences during the eleventh and twelfth centuries obtained some pottery, and probably food, from some distance away, while major ceremonial events were opportunities for sharing food and crafts. Scholars believe that this cooperation allowed people to contend with a patchy environment in which precipitation and other resources varied across the landscape: if you produce a lot of food one year, you might trade it for pottery made by a distant ally who is having difficulty with crops—and the next year, the flow of goods might go in the opposite direction. But all of this appears to have changed thirteenth century. Although the climate remained as unpredictable as ever between one year and the next, it became much less locally diverse. In a bad year for farming, everyone was equally affected. No longer was it helpful to share widely. Instead, the most sensible thing would be for neighbors to combine efforts to produce as much food as possible, and thus aggregated towns were a sensible arrangement.

---

in the Mesa Verde area from the eleventh through the thirteenth century?

- A. Cooperation allowed many households to give up farming and to specialize in making pottery and crafts.
  - B. People went from exchanging food and crafts they individually produced to sharing in a cooperative effort to produce as much food as possible.
  - C. Overtime there was less cooperation as farmers competed with each other for trade with distant areas.
  - D. Individuals stopped cooperating with each other because they did not have enough food for themselves.
13. Look at the four squares [■] that indicate where the following sentence could be added to the passage.

**Performing everyday household tasks required more effort.**

Where would the sentence best fit? Click on a square to add the sentence to the passage.

**14. In the thirteenth century, the people in the Mesa Verde area went from living in scattered independent households to living in large pueblos.**

Answer Choices

- A. Because the thirteenth-century inhabitants of the Mesa Verde area did not have the cultural expectations of today's city dwellers, they easily adapted to communal life.
- B. Even though living in pueblos had disadvantages, the population of the area had grown so large that there may have been no other arrangement that would have met its needs.
- C. From the eleventh century onward, farmers began to increase food production on existing farmland and started bringing more land under cultivation.
- D. A development that contributed to increasing population densities was a cooling climate

---

In the Mesa Verde area of the ancient North American Southwest, living patterns changed in the thirteenth century, with large numbers of people moving into large communal dwellings called pueblos, often constructed at the edges of canyons, especially on the sides of cliffs. Abandoning small extended-family households to move into these large pueblos with dozens if not hundreds of other people was probably traumatic. Few of the cultural traditions and rules that today allow us to deal with dense populations existed for these people accustomed to household autonomy and the ability to move around the landscape almost at will. [■] And besides the awkwardness of having to share walls with neighbors, living in aggregated pueblos introduced other problems. [■] For people in cliff dwellings, hauling water, wood, and food to their homes was a major chore. [■] The stress on local resources, especially in the firewood needed for daily cooking and warmth, was particularly intense,

that led many people to leave the coldest areas and crowd into climatically more favorable areas.

- E. The primary reason for moving to pueblos was the social benefits associated with communal life.
- F. People were brought together by the need to produce food cooperatively, as the use of food surpluses in one place to relieve shortages in another ended due to a change in climate.

and conditions in aggregated pueblos were not very hygienic. [■]

参考答案

## TPO 01

|         |         |         |             |         |
|---------|---------|---------|-------------|---------|
| 1. ○ 3  | 2. ○ 3  | 3. ○ 2  | 4. ○ 4      | 5. ○ 4  |
| 6. ○ 1  | 7. ○ 1  | 8. ○ 1  | 9. ○ 3      | 10. ○ 2 |
| 11. ○ 4 | 12. ○ 1 | 13. ○ 4 | 14. ○ 1 2 3 |         |

|         |         |         |             |         |
|---------|---------|---------|-------------|---------|
| 1. ○ 4  | 2. ○ 1  | 3. ○ 1  | 4. ○ 4      | 5. ○ 3  |
| 6. ○ 3  | 7. ○ 2  | 8. ○ 4  | 9. ○ 1      | 10. ○ 2 |
| 11. ○ 3 | 12. ○ 4 | 13. ○ 4 | 14. ○ 2 5 6 |         |

|         |         |             |        |         |
|---------|---------|-------------|--------|---------|
| 1. ○ 4  | 2. ○ 1  | 3. ○ 2      | 4. ○ 3 | 5. ○ 3  |
| 6. ○ 2  | 7. ○ 2  | 8. ○ 1      | 9. ○ 3 | 10. ○ 4 |
| 11. ○ 3 | 12. ○ 4 | 13. ○ 2 4 6 |        |         |

## TPO 02

|         |         |                |        |         |
|---------|---------|----------------|--------|---------|
| 1. ○ 2  | 2. ○ 1  | 3. ○ 3         | 4. ○ 3 | 5. ○ 1  |
| 6. ○ 2  | 7. ○ 4  | 8. ○ 4         | 9. ○ 2 | 10. ○ 3 |
| 11. ○ 4 | 12. ○ 2 | 13-14. ○ 1 2 5 |        |         |

|         |         |                |        |         |
|---------|---------|----------------|--------|---------|
| 1. ○ 2  | 2. ○ 2  | 3. ○ 1         | 4. ○ 1 | 5. ○ 4  |
| 6. ○ 3  | 7. ○ 4  | 8. ○ 4         | 9. ○ 3 | 10. ○ 1 |
| 11. ○ 3 | 12. ○ 2 | 13-14. ○ 1 3 4 |        |         |

|         |         |             |        |         |
|---------|---------|-------------|--------|---------|
| 1. ○ 3  | 2. ○ 2  | 3. ○ 3      | 4. ○ 2 | 5. ○ 3  |
| 6. ○ 4  | 7. ○ 1  | 8. ○ 4      | 9. ○ 2 | 10. ○ 1 |
| 11. ○ 1 | 12. ○ 4 | 13. ○ 3 5 6 |        |         |

## TPO 03

|         |         |             |        |         |
|---------|---------|-------------|--------|---------|
| 1. ○ 4  | 2. ○ 3  | 3. ○ 4      | 4. ○ 2 | 5. ○ 1  |
| 6. ○ 2  | 7. ○ 3  | 8. ○ 4      | 9. ○ 1 | 10. ○ 3 |
| 11. ○ 2 | 12. ○ 4 | 13. ○ 1 2 6 |        |         |

|        |        |        |        |        |
|--------|--------|--------|--------|--------|
| 1. ○ 4 | 2. ○ 2 | 3. ○ 1 | 4. ○ 4 | 5. ○ 3 |
|--------|--------|--------|--------|--------|

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 6. o3  | 7. o4  | 8. o1  | 9. o3      | 10. o3 |
| 11. o2 | 12. o2 | 13. o3 | 14. o1 2 6 |        |
| 1. o3  | 2. o3  | 3. o1  | 4. o2      | 5. o3  |
| 6. o2  | 7. o3  | 8. o2  | 9. o1      | 10. o3 |
| 11. o4 | 12. o4 | 13. o2 | 14. o2 3 5 |        |

## TPO 04

|        |        |        |            |         |
|--------|--------|--------|------------|---------|
| 1. o4  | 2. o3  | 3. o 3 | 4. o4      | 5. o1   |
| 6. o3  | 7. o1  | 8. o 1 | 9. o2      | 10. o 2 |
| 11. o2 | 12. o4 | 13. o2 | 14. o2 3 5 |         |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o1  | 2. o2  | 3. o1  | 4. o4      | 5. o4  |
| 6. o3  | 7. o4  | 8. o2  | 9. o3      | 10. o1 |
| 11. o3 | 12. o2 | 13. o3 | 14. o1 5 6 |        |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o2  | 2. o4  | 3. o1  | 4. o3      | 5. o1  |
| 6. o4  | 7. o1  | 8. o2  | 9. o2      | 10. o4 |
| 11. o3 | 12. o1 | 13. o4 | 14. o1 2 3 |        |

## TPO 05

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o2  | 2. o2  | 3. o2  | 4. o2      | 5. o3  |
| 6. o1  | 7. o4  | 8. o4  | 9. o1      | 10. o3 |
| 11. o4 | 12. o2 | 13. o1 | 14. o1 2 3 |        |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o4  | 2. o1  | 3. o1  | 4. o2      | 5. o3  |
| 6. o2  | 7. o1  | 8. o4  | 9. o4      | 10. o3 |
| 11. o2 | 12. o3 | 13. o4 | 14. o1、2、3 |        |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o2  | 2. o3  | 3. o1  | 4. o2      | 5. o1  |
| 6. o2  | 7. o3  | 8. o3  | 9. o2      | 10. o4 |
| 11. o3 | 12. o2 | 13. o2 | 14. o1 2 6 |        |

## TPO 06

|        |       |       |        |        |
|--------|-------|-------|--------|--------|
| 1. o 4 | 2. o2 | 3. o1 | 4. o 3 | 5. o 2 |
|--------|-------|-------|--------|--------|

6. o 1      7. o 1.      8. o 3      9. o 4      10. o 3  
11. o 2      12. o 3      13. o 2 4 6

1. o 3      2. o 3      3. o 2      4. o 3      5. o 1  
6. o 2      7. o 4      8. o 1      9. o 4      10. o 4  
11. o 2 3      12. o 2      13. o 3      14. o 2 3 6

1. o 3      2. o 2      3. o 3      4. o 4      5. o 2  
6. o 4      7. o 1      8. o 4      9. o 1      10. o 2  
11. o 1      12. o 3      13. o 4      14. o 2 4 6

## TPO 07

1. o 3      2. o 2      3. o 1      4. o 1      5. o 2 4  
6. o 1      7. o 1      8. o 2      9. o 4      10. o 2  
11. o 3      12. o 3      13. o 1 4 5

1. o 3      2. o 3      3. o 2      4. o 1      5. o 1  
6. o 4      7. o 3      8. o 2      9. o 4      10. o 3  
11. o 2      12. o 1      13. o 2      14. o 1 4 5

1. o 3      2. o 2      3. o 4      4. o 4      5. o 1  
6. o 2      7. o 2      8. o 3      9. o 1      10. o 2  
11. o 3      12. o 2      13. o 2      14. o 3 5 6

## TPO 08

1. o 3      2. o 2      3. o 1      4. o 4      5. o 3  
6. o 3      7. o 4      8. o 3      9. o 1      10. o 4  
11. o 1 4      12. o 3      13. o 4      14. o 1 4 5

1. o 4      2. o 3      3. o 2      4. o 1      5. o 1  
6. o 4      7. o 1      8. o 1      9. o 2      10. o 4  
11. o 2      12. o 3      13. o 3      14. o 1 3 5

1. o 4      2. o 2      3. o 1      4. o 2      5. o 1  
6. o 3      7. o 3      8. o 2      9. o 2      10. o 2  
11. o 1      12. o 1      13. o 1 2 5

## TPO 09

1. o 2      2. o 3      3. o 4      4. o 1      5. o 1  
6. o 3      7. o 1      8. o 4      9. o 3      10. o 2

11. o2      12. o4      13. o4      14. o235

1.o 1      2.o 2      3.o 3      4.o 4      5.o 2  
6.o 1      7.o 3      8.o 1      9.o 2      10.o 2  
11.o 3      12.o 3      13.o 245

1. o4      2. o1      3. o3      4. o2      5. o1  
6. o1      7. o4      8.o23      9. o4      10. o2  
11. o2      12. o3      13. o2      14. o236

## TPO 10

1. o2      2. o4      3. o3      4. o2      5. o1  
6. o4      7. o3      8.o1      9. o2      10. o1  
11. o2      12. o2      13. o2      14. o135

1. o2      2. o3      3. o4      4. o2      5. o1  
6. o3      7. o3      8.o2      9. o1      10. o2  
11. o2      12. o2      13. o4      14. o135

1. o2      2. o3      3. o4      4. o1      5. o1  
6. o2      7. o2      8.o3      9. o3      10. o3  
11. o1      12. o2      13. o3      14. o136

## TPO 11

1. o2      2. o4      3. o3      4. o2      5. o3  
6. o2      7. o1      8.o1      9. o3      10. o4  
11. o4      12. o2      13. o4      14. o235

1. o3      2. o3      3. o4      4. o1      5. o2  
6. o3      7. o2      8.o1      9. o1      10. o3  
11. o1      12. o2      13. o1      14. o136

1. o3      2. o1      3. o2      4. o2      5. o3  
6. o4      7. o2      8.o2      9. o3      10. o1  
11. o3      12. o4      13. o2      14. o123

## TPO 12

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o3  | 2. o2  | 3. o3  | 4. o3      | 5. o2  |
| 6. o2  | 7. o3  | 8. o4  | 9. o4      | 10. o1 |
| 11. o4 | 12. o4 | 13. o2 | 14. o2 3 4 |        |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o2  | 2. o1  | 3. o4  | 4. o3      | 5. o1  |
| 6. o1  | 7. o1  | 8. o2  | 9. o1      | 10. o4 |
| 11. o2 | 12. o2 | 13. o2 | 14. o1 2 3 |        |

|        |        |                            |                         |        |
|--------|--------|----------------------------|-------------------------|--------|
| 1. o2  | 2. o4  | 3. o4                      | 4. o3                   | 5. o4  |
| 6. o1  | 7. o2  | 8. o2                      | 9. o3                   | 10. o3 |
| 11. o1 | 12. o3 | 13. oEndogenous Rivers 1 5 | oExogenous Rivers 3 4 7 |        |

## TPO 13

|        |        |                           |                       |        |
|--------|--------|---------------------------|-----------------------|--------|
| 1. o2  | 2. o4  | 3. o3                     | 4. o1                 | 5. o3  |
| 6. o4  | 7. o2  | 8. o3                     | 9. o3                 | 10. o4 |
| 11. o1 | 12. o2 | 13. oPrimary Groups 1 6 7 | oSecondary Groups 4 5 |        |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o1  | 2. o2  | 3. o4  | 4. o3      | 5. o2  |
| 6. o3  | 7. o1  | 8. o3  | 9. o1      | 10. o1 |
| 11. o1 | 12. o2 | 13. o2 | 14. o1 2 6 |        |

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o3  | 2. o3  | 3. o1  | 4. o3      | 5. o2  |
| 6. o1  | 7. o2  | 8. o4  | 9. o4      | 10. o1 |
| 11. o3 | 12. o4 | 13. o2 | 14. o1 2 6 |        |

## TPO 14

|        |        |        |            |        |
|--------|--------|--------|------------|--------|
| 1. o2  | 2. o1  | 3. o4  | 4. o1      | 5. o3  |
| 6. o2  | 7. o1  | 8. o3  | 9. o4      | 10. o1 |
| 11. o2 | 12. o4 | 13. o1 | 14. o1 2 4 |        |

|       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1. o4 | 2. o4 | 3. o2 | 4. o2 | 5. o3 |
|-------|-------|-------|-------|-------|

6. ○2      7. ○3      8. ○1      9. ○1      10. ○3  
11. ○1     12. ○4     13. ○1 3 4; 5 7

1. ○2      2. ○2      3. ○4      4. ○1      5. ○4  
6. ○4      7. ○2      8. ○1      9. ○2      10. ○3  
11. ○4     12. ○1     13. ○1 3 4

## TPO 15

1. ○2      2. ○2      3. ○1      4. ○3      5. ○4  
6. ○2      7. ○2      8. ○1      9. ○2      10. ○3  
11. ○3     12. ○4     13. ○1     14. ○2 4 5

1. ○3      2. ○1      3. ○4      4. ○3      5. ○4  
6. ○1      7. ○2      8. ○3      9. ○2      10. ○1  
11. ○4     12. ○2     13. ○4     14. ○1 2 4

1. ○2      2. ○1      3. ○4      4. ○3      5. ○4  
6. ○2      7. ○4      8. ○2      9. ○3      10. ○1  
11. ○2     12. ○1     13. ○3     14. ○1 2 4

## TPO 16

1. ○C      2. ○B      3. ○D      4. ○C      5. ○B  
6. ○D      7. ○C      8. ○B      9. ○A      10. ○D  
11. ○A     12. ○B

13. 1st square 14. Crafts were... Qualities that... The stability of...

1. ○D      2. ○C      3. ○A      4. ○B      5. ○A  
6. ○D      7. ○C      8. ○C      9. ○B      10. ○C  
11. ○D     12. ○A

13. 3rd square 14. Mendenleyev and Meyer... Mendeleyev's successful... In the 1890's...

1. ○D      2. ○D      3. ○B      4. ○B      5. ○B  
6. ○C      7. ○B      8. ○B      9. ○C      10. ○A  
11. ○A  
12. 4th square

13. Terrestrial:

Have relatively small sizes  
Have relatively high temperatures

Jovian:

Contain relatively high...  
Have relatively high escape...  
Have a composition...

## TPO 17

- |                             |                             |                             |                            |                             |
|-----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|
| 1. <input type="radio"/> C  | 2. <input type="radio"/> D  | 3. <input type="radio"/> B  | 4. <input type="radio"/> A | 5. <input type="radio"/> B  |
| 6. <input type="radio"/> B  | 7. <input type="radio"/> A  | 8. <input type="radio"/> D  | 9. <input type="radio"/> C | 10. <input type="radio"/> B |
| 11. <input type="radio"/> D | 12. <input type="radio"/> B | 13. <input type="radio"/> B |                            |                             |

14. For trade...

Wind-driven...  
The development...

- |                             |                             |                             |                            |                             |
|-----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|
| 1. <input type="radio"/> B  | 2. <input type="radio"/> A  | 3. <input type="radio"/> C  | 4. <input type="radio"/> A | 5. <input type="radio"/> C  |
| 6. <input type="radio"/> D  | 7. <input type="radio"/> D  | 8. <input type="radio"/> B  | 9. <input type="radio"/> C | 10. <input type="radio"/> D |
| 11. <input type="radio"/> A | 12. <input type="radio"/> B | 13. <input type="radio"/> B |                            |                             |

14. To escape...

To be noticed...  
An animal may...

- |                             |                             |                             |                            |                             |
|-----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|
| 1. <input type="radio"/> C  | 2. <input type="radio"/> B  | 3. <input type="radio"/> B  | 4. <input type="radio"/> D | 5. <input type="radio"/> A  |
| 6. <input type="radio"/> C  | 7. <input type="radio"/> C  | 8. <input type="radio"/> D  | 9. <input type="radio"/> A | 10. <input type="radio"/> C |
| 11. <input type="radio"/> B | 12. <input type="radio"/> A | 13. <input type="radio"/> A |                            |                             |

28. Parasitic relationships...

The rarity of...  
Mutualism is unique...

## TPO 18

- |       |       |       |      |       |
|-------|-------|-------|------|-------|
| 1. B  | 2. D  | 3. D  | 4. D | 5. A  |
| 6. A  | 7. B  | 8. C  | 9. B | 10. B |
| 11. A | 12. C | 13. C |      |       |

14. Thanks to their...

These countries were helped by...  
These countries were successful...

The Mystery of Yawning

1. B    2. A    3. A    4. C    5. D  
6. B    7. C    8. D    9. C    10. D  
11. A   12. C   13. C  
14. Evidence has shown that...

Some have proposed that...

There is some evidence...

Lightning

15. B    16. C    17. A    18. B    19. D  
20. D    21. A    22. C    23. B    24. C  
25. C    26. A    27. C  
28. A separation of...

Lightning from cloud to ground...

Once a channel has...

## TPO 19

1. A    2. C    3. B    4. D    5. B  
6. B    7. A    8. D    9. C    10. D  
11. D   12. C  
13. 4th square  
14. Although the presence...

Though the army...

Roman soldiers started...

Succession, Climax, and Ecosystems

1. C    2. A    3. D    4. B    5. C  
6. A    7. A    8. D    9. C    10. B  
11. D   12. D   13. 3rd square  
14. According to the...  
The idea of....  
The once popular...

Discovering the ice ages

15. D    16. B    17. B    18. A    19. B  
16. B    20. B    21. A    22. C    23. C  
17. D    24. B    25. A    26. B  
27. 4th square  
28. Evidence of a ...  
Nineteenth-century geologists

Isotopic analysis of...

## TPO 20

1.D    2.C    3.A    4.D    5.B  
6.B    7.A    8.D    9.A    10.B  
11.B   12.C   13.C   14.ACE

1.C    2.B    3.D    4.B    5.A  
6.D    7.D    8.C    9.D    10.B  
11.C   12.A   13.C   14.BEF

1.C    2.A    3.A    4.D    5.C  
6.D    7.B    8.C    9.B    10.C  
11.D   12.B   13.A   14.ACF

## TPO 21

1.C    2.A    3.C    4.B    5.D  
6.C    7.D    8.A    9.C    10.A  
11.C   12.A   13.B   14.ADF

1.A    2.B    3.D    4.A    5.C  
6.D    7.C    8.B    9.B    10.C  
11.C   12.B   13.A   14.BCD

1.C    2.D    3.B    4.A    5.B  
6.A    7.C    8.C    9.D    10.D  
11.B   12.A   13.A   14ADF

## TPO 22

1.A    2.C    3.D    4.B    5.D  
6.B    7.A    8.A    9.B    10.C  
11.C   12.D   13.C   14.AEF

1.C    2.A    3.B    4.C    5.C  
6.B    7.D    8.B    9.B    10.B  
11.D   12.A   13.A   14.BCF

1.D    2.C    3.B    4.D    5.B

6.B      7.D      8.A      9.A      10.B  
11.C     12.A     13.D     14.BEF

## TPO 23

1.C      2.B      3.B      4.C      5.D  
6.A      7.D      8.C      9.D      10.D  
11.A     12.D     13.C     14.BCD

1.C      2.B      3.A      4.D      5.D  
6.B      7.AC     8.A      9.B      10.C  
11.A     12.B     13.D     14.DEF

1.B      2.D      3.B      4.C      5.D  
6.B      7.C      8.A      9.A      10.A  
11.D     12.C     13.A     14.BCE

## TPO 24

1.D      2.B      3.C      4.D      5.A  
6.B      7.C      8.C      9.A      10.B  
11.C     12.D     13.D     14.ABE

1.B      2.A      3.D      4.B      5.C  
6.C      7.B      8.D      9.A      10.D  
11.A     12.C     13/14. AG/BDF

1.B      2.A      3.C      4.D      5.A  
6.B      7.A      8.B      9.D      10.D  
11.C     12.B     13.B     14.DEF