**托福TPO35阅读原文+题目**

**Memphis: United Egypt's First Capital**

[1] The city of Memphis, located on the Nile near the modern city of Cairo, was founded around 3100 B.C. as the first capital of a recently united Egypt. The choice of Memphis by Egypt's first kings reflects the site's strategic importance. ■First, and most obvious, the apex of the Nile River delta was a politically opportune location for the state's administrative center, standing between the united lands of Upper and Lower Egypt and offering ready access to both parts of the country. The older predynastic (pre-3100BC) centers of power, This and Hierakonpolis, were too remote from the vast expanse of the delta, which had been incorporated into the united state. ■Only a city within easy reach of both the Nile valley to the south and the more spread out, difficult terrain to the north could provide the necessary political control that the rulers of early dynastic Egypt (roughly 3000-2600 B.C.) required. ■

[2] The region of Memphis must have also served as an important node for transport and communications, even before the unification of Egypt. The region probably acted as a conduit for much, if not all, of the river-based trade between northern and southern Egypt. ■Moreover, commodities (such as wine, precious oils, and metals) imported from the Near East by the royal courts of predynastic Upper Egypt would have been channeled through the Memphis region on their way south. In short, therefore, the site of Memphis offered the rulers of the Early Dynastic Period an ideal location for controlling internal trade within their realm, an essential requirement for a state-directed economy that depended on the movement of goods.

[3] Equally important for the national administration was the ability to control communications within Egypt. The Nile provided the easiest and quickest artery of communication, and the national capital was, again, ideally located in this respect. Recent geological surveys of the Memphis region have revealed much about its topography in ancient times. It appears that the location of Memphis may have been even more advantageous for controlling trade, transport, and communications than was previously appreciated. Surveys and drill cores have shown that the level of the Nile floodplain has steadily risen over the last five millenniums. When the floodplain was much lower, as it would have been in predynastic and early dynastic times, the outwash fans (fan-shaped deposits of sediments) of various wadis (stream-beds or channels that carry water only during rainy periods) would have been much more prominent features on the east bank. The fan associated with the Wadi Hof extended a significant way into the Nile floodplain, forming a constriction in the vicinity of Memphis. The valley may have narrowed at this point to a mere three kilometers, making it the ideal place for controlling river traffic.

[4] Furthermore, the Memphis region seems to have been favorably located for the control not only of river-based trade but also of desert trade routes. The two outwash fans in the area gave access to the extensive wadi systems of the eastern desert. In predynastic times, the Wadi Digla may have served as a trade route between the Memphis region and the Near East, to judge from the unusual concentration of foreign artifacts found in the predynastic settlement of Maadi. Access to, and control of, trade routes between Egypt and the Near East seems to have been a preoccupation of Egypt's rulers during the period of state formation. The desire to monopolize foreign trade may have been one of the primary factors behind the political unification of Egypt. The foundation of the national capital at the junction of an important trade route with the Nile valley is not likely to have been accidental. Moreover, the Wadis Hof and Digla provided the Memphis region with accessible desert pasturage. As was the case with the cities of Hierakonpolis and Elkab, the combination within the same area of both desert pasturage and alluvial arable land (land suitable for growing crops) was a particularly attractive one for early settlement; this combination no doubt contributed to the prosperity of the Memphis region from early predynastic times.

Paragraph 1

1. The word “vast” in the passage is closet in meaning to

○ fertile

○ huge

○ unique

○ irregular

2. According to paragraph 1, why was Memphis a better choice for the capital of a united Egypt than either This or Hierakonpolis

○ Memphis was in a better location for maintaining administrative control.

○ Memphis had long been a regional administrative center by the time Egypt was united.

○ This and Hierakonpolis had never actually been incorporated into the unified state.

○ Egyptian rulers had failed to keep political control over This and Hierakonpolis in predynastic times.

3. Which of the following best describes how paragraph 1 is organized?

○ Two simultaneous developments are described, as well as the reasons why neither one would have occurred without the other.

○ A hypothesis is presented, and then points in favor of that hypothesis as well as points against it are discussed.

○ A major event is described, and then the most obvious effects of that event are presented.

○ A decision is described, and then one likely motivation for that decision is presented.

4. It can be inferred from paragraph 1 that one consequence of the unification of Egypt was

○ the reduction of the strategic importance of older centers of power

○ the opportunity for the recently united Egypt to become economically self-sufficient

○ the increase in political tensions between the rulers of Upper and Lower Egypt

○ the reduction of Egypt’s dependence upon the Nile for trade and communications

Paragraph 2

5. According to paragraph 2, when did Egypt import goods from the Near East?

○ Once internal trade was fully controlled from Memphis

○ Not until early dynastic Egypt established its state-directed economy

○ As early as predynastic times

○ Only when local supplies of those goods had been completely used up

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.

○ Thus in Memphis, the rulers of the Early Dynastic Period were ideally placed to control internal trade, which they had to do in order to run their economy.

○ Therefore the rulers of the Early Dynastic Period thought Memphis was the ideal location for trade with nearby countries.

○ In short, a state-directed economy like that of the Early Dynastic Period requires choosing a single location to which goods can be moved just as Memphis, in this case.

○ In sum, then, a state-directed economy first developed during Egypt’s Early Dynastic Period because Memphis was an ideal location for controlling trade.

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

○ proposed

○ understood

○ approved

○ expected

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

○ center

○ fields

○ city

○ surrounding area

9. According to paragraph 3, recent research into the topography of the Memphis region in ancient times suggests which of the following?

○ The level of the Nile floodplains was much higher in predynastic and dynastic times than in later times.

○ The sediment deposits of wadis were not as noticeable in predynastic and dynastic times than in later times.

○ The Nile valley at the point of Memphis was narrower in predynastic and dynastic times than it was in later times.

○ Frequent rainy periods may have caused a significant reduction of trade traffic during the predynastic and dynastic times.

10. According to paragraph 4, which of the following is NOT a reason Memphis was chosen as the capital of a united Egypt

○ It was at the junction of a major trade route with the Nile valley.

○ It was near land that could be used for animal grazing and for growing crops.

○ The nearby outwash fans led into wadis that could be used as desert trade routes.

○ Since foreign traders had settled in nearby Maadi, trade between the two cities could be established.

11. The phrase “to have been accidental” in the passage is closest in meaning to

○ to have gone wrong

○ to have been helpful

○ to have occurred by chance

○ to have made a difference

12. In paragraph 4, why does the author mention the cities of Hierakonpolis and Elkab?

○ To give an indication of the level of prosperity that Memphis is thought to have enjoyed from its earliest days.

○ To compare the Memphis region to them in terms of their similar combinations of characteristics providing advantages for early settlement.

○ To identify the models that the founders of Memphis followed in laying out the national capital.

○ To suggest that the combination of desert pasturage and alluvial arable land in the same area was very common.

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

While considerations of political power and ease of administration were decisive in choosing the location of the new capital, the site clearly had other advantages.

Where does the sentence best fit?

14. Prose summary

Answer Choices

○ River-based trade from northern Egypt and imported goods going south all passed through the Memphis region, making Memphis an ideal location for controlling trade.

○ After Memphis became the capital city, river-based trade along the Nile gained in importance, while land-based desert trade declined in importance.

○ Recent geological surveys suggest that the topographical features of the Memphis region made it particularly well-suited for controlling communications and trade.

○ The Nile, despite a constriction of its valley near Memphis, was the most advantageous route for communication and travel once the floodplain had begun to rise.

○ The rulers of unified Egypt enjoyed a monopoly over foreign trade because all such trade was required to go through the Wadi Digla, to which the rulers controlled all access.

○ While the location of Memphis was agriculturally favorable, it was particularly attractive because it enabled Egypt’s rulers to control trade moving through the desert from the Near East.

**Population Growth in Nineteenth-Century Europe**

[1] Because of industrialization, but also because of a vast increase in agricultural output without which industrialization would have been impossible, Western Europeans by the latter half of the nineteenth century enjoyed higher standards of living and longer, healthier lives than most of the world's peoples. In Europe as a whole, the population rose from188 million in 1800 to 400 million in1900. By 1900, virtually every area of Europe had contributed to the tremendous surge of population, but each major region was at a different stage of demographic change.

[2] Improvements in the food supply continued trends that had started in the late seventeenth century. New lands were put under cultivation, while the use of crops of American origin, particularly the potato, continued to expand. Setbacks did occur. Regional agricultural failures were the most common cause of economic recessions until 1850, and they could lead to localized famine as well. A major potato blight (disease) in1846-1847 led to the deaths of at least one million persons in Ireland and the emigration of another million, and Ireland never recovered the population levels the potato had sustained to that point. Bad grain harvests at the same time led to increased hardship throughout much of Europe.

[3] After 1850, however, the expansion of foods more regularly kept pace with population growth, though the poorer classes remained malnourished. Two developments were crucial. First, the application of science and new technology to agriculture increased. Led by German universities, increasing research was devoted to improving seeds, developing chemical fertilizers, and advancing livestock. After 1861, with the development of land-grant universities in the United States that had huge agricultural programs, American crop-production research added to this mix. Mechanization included the use of horse-drawn harvesters and seed drills, many developed initially in the United States. It also included mechanical cream separators and other food-processing devices that improved supply.

[4] The second development involved industrially based transportation. With trains and steam shipping, it became possible to move foods to needy regions within Western Europe quickly. Famine(as opposed to malnutrition) became a thing of the past. Many Western European countries, headed by Britain, began also to import increasing amounts of food, not only from Eastern Europe, a traditional source, but also from the Americas, Australia, and New Zealand. Steam shipping, which improved speed and capacity, as well as new procedures for canning and refrigerating foods (particularly after 1870), was fundamental to these developments.

[5] Europe's population growth included one additional innovation by the nineteenth century: it combined with rapid urbanization. More and more Western Europeans moved from countryside to city, and big cities grew most rapidly of all. By1850, over half of all the people in England lived in cities, a first in human history. In one sense, this pattern seems inevitable: growing numbers of people pressed available resources on the land, even when farmwork was combined with a bit of manufacturing, so people crowded into cities seeking work or other resources. Traditionally, however, death rates in cities surpassed those in the countryside by a large margin; cities had maintained population only through steady in-migration. Thus rapid urbanization should have reduced overall population growth, but by the middle of the nineteenth century this was no longer the case. Urban death rates remained high, particularly in the lower-class slums, but they began to decline rapidly.

[6] The greater reliability of food supplies was a factor in the decline of urban death rates. Even more important were the gains in urban sanitation, as well as measures such as inspection of housing. ■Reformers, including enlightened doctors, began to study the causes of high death rates and to urge remediation. ■Even before the discovery of germs, beliefs that disease spread by “miasmas” (noxious forms of bad air) prompted attention to sewers and open garbage; ■Edwin Chadwick led an exemplary urban crusade for underground sewers in England in the1830s. ■Gradually, public health provisions began to cut into customary urban mortality rates. By 1900, in some parts of Western, Europe life expectancy in the cities began to surpass that of the rural areas. Industrial societies had figured out ways to combine large and growing cities with population growth, a development that would soon spread to other parts of the world.

Paragraph 1

1. According to paragraph 1, which of the following is true about Europe in the nineteenth century

○ A large increase in food production led to industrialization.

○ Population changes occurred at the same pace in the major regions.

○ The standard of living rose to the level of that in most parts of the world.

○ The tremendous rise in population led to greater agricultural output in every region.

Paragraph 2

2. According to paragraph2, which of the following caused the food supply to increase in most of Western Europe during the nineteenth century

○ Replacement of seventeenth-century farming techniques with more modern ones

○ Improved grain harvests in most European countries

○ Reduced demand for food as a result of a decreased population

○ Use of new land to grow crops

3. In paragraph 2, why does the author mention the potato blight that occurred in Ireland?

○ To identify a crop that was more successful in the United States than it was in Western Europe

○ To support a claim about regional agricultural failures

○ To give an example of a problematic trend that had started in the late seventeenth century

○ To provide evidence that many countries in Europe experienced a loss of population in the nineteenth century

Paragraph 3

4. The phrase “kept pace with” in the passage is closest in meaning to

○ exceeded

○ matched the increase in

○ increased the rate of

○ caused

5. According to paragraph 3, all of the following factors helped the supply of food meet the needs of a growing population EXCEPT

○ increased agricultural research in Germany

○ introduction of new crops

○ development of food-processing devices

○ agricultural programs in universities in the United States

Paragraph 4

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

○ variety of goods

○ distance

○ reliability

○ available storage space

7. According to paragraph 4, famine became less of a problem in Western Europe during the nineteenth century because of

○ the decline of malnutrition

○ the construction of more food-storage facilities

○ faster means of transportation

○ improved agricultural methods in Eastern Europe

Paragraph 5

8. The world “inevitable” in the passage is closest in meaning to

○ unexplainable

○ undesirable

○ unavoidable

○ unpredictable

9. According to paragraph 5, which of the following factors led to rapid urbanization in the first half of the nineteenth century

○ The destruction of many farms due to bad harvests

○ The reduction in the amount of good-quality farmland

○ The rise in death rates in the countryside

○ The lack of jobs in the countryside

Paragraph 6

10. Paragraph 6 mentions all of the following as factors that contributed to the rapid decline of urban death rates EXCEPT

○ the greater reliability of food supplies

○ improvements in sanitation

○ advances in the treatment of disease

○ provisions for inspecting houses

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

○ exceed

○ influence

○ equal

○ differ from

12. Which of the following can be inferred from paragraph6 about underground sewers

○ They became common in most of Western Europe in the 1830s.

○ They helped reduce deaths caused by disease in cities.

○ They led to the discovery that disease could be caused by germs.

○ They encouraged people to leave rural areas and move to the cities.

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

Such individual efforts had substantial, concrete effects on society.

Where does the sentence best fit?

14. Prose summary

Answer Choices

○ Agricultural failures became less damaging after 1850 because of advances in science and technology as well as improvements in the transportation and preservation of foods.

○ Although agricultural failures led to deaths and emigration, population levels were restored within a short time.

○ The development of better food-processing technologies allowed many Western European countries to grow their own food without having to import it from other countries.

○ As the population in the countryside began increasing faster than the supply of food and living space, people began moving to the cities in search of jobs and other resources.

○ High death rates in the cities began to decline as food supplies became more reliable and as reformers prompted improvements in sanitation and housing.

○ The improvements in crop-growing methods created new jobs on the farms, causing people from the overcrowded cities to move to the countryside to fill those jobs.

**The surface of Mars**

[1] The surface of Mars shows a wide range of geologic features, including huge volcanoes — the largest known in the solar system — and extensive impact cratering. Three very large volcanoes are found on the Tharsis bulge, an enormous geologic area near Mars's equator. Northwest of Tharsis is the largest volcano of all: Olympus Mons, with a height of 25 kilometers and measuring some 700 kilometers in diameter at its base. The three large volcanoes on the Tharsis bulge are a little smaller — a “mere” 18 ki1ometers high.

[2] None of these volcanoes was formed as a result of collisions between plates of the Martian crust-there is no plate motion on Mars. Instead, they are shield volcanoes — volcanoes with broad, sloping slides formed by molten rock. All four show distinctive lava channels and other flow features similar to those found on shield volcanoes on Earth. Images of the Martian surface reveal many hundreds of volcanoes. Most of the largest volcanoes are associated with the Tharsis bulge, but many sma11er ones are found in the northern plains.

[3] The great height of Martian volcanoes is a direct consequence of the planet's low surface gravity. As lava flows and spreads to form a shield volcano, the volcano's eventual height depends on the new mountain's ability to support its own weight. The lower the gravity, the lesser the weight and the greater the height of the mountain. It is no accident that Maxwell Mons on Venus and the Hawaiian shield volcanoes on Earth rise to about the same height (about10 kilometers) above their respective bases-Earth and Venus have similar surface gravity. Mars's surface gravity is only 40 percent that of Earth, so volcanoes rise roughly 2.5 times as high. Are the Martian shield volcanoes still active? Scientists have no direct evidence for recent or ongoing eruptions, but if these volcanoes were active as recently as 100 million years ago(an estimate of the time of last eruption based on the extent of impact cratering on their slopes), some of them may still be at least intermittently active. Millions of years, though, may pass between eruptions.

[4] Another prominent feature of Mars's surface is cratering. The Mariner spacecraft found that the surface of Mars, as well as that of its two moons, is pitted with impact craters formed by meteoroids falling in from space. As on our Moon, the smaller craters are often filled with surface matter — mostly dust — confirming that Mars is a dry desert world. However, Martian craters get filled in considerably faster than their lunar counterparts. On the Moon, ancient craters less than100 meters across (corresponding to depths of about 20 meters) have been obliterated, primarily by meteoritic erosion. On Mars, there are relatively few craters less than 5 kilometers in diameter. The Martian atmosphere is an efficient erosive agent, with Martian winds transporting dust from place to place and erasing surface features much faster than meteoritic impacts alone can obliterate them.

[5] As on the Moon, the extent of large impact cratering (i.e. craters too big to have been filled in by erosion since they were formed) serves as an age indicator for the Martian surface. Age estimates ranging from four billion years for Mars's southern highlands to a few hundred million years in the youngest volcanic areas were obtained in this way.

[6] The detailed appearance of Martian impact craters provides an important piece of information about conditions just below the planet's surface. Martian craters are surrounded by ejecta (debris formed as a result of an impact) that looks quite different from its lunar counterparts. A comparison of the Copernicus crater on the Moon with the (fairly typical) crater Yuty on Mars demonstrates the differences. The ejecta surrounding the lunar crater is just what one would expect from an explosion ejecting a large volume of dust,,soil, and boulders. ■However, the ejecta on Mars gives the distinct impression of a liquid that has splashed or flowed out of crater. ■Geologists think that this fluidized ejecta crater indicates that a layer of permafrost, or water ice, lies just a few meters under the surface. ■Explosive impacts heated and liquefied the ice, resulting in the fluid appearance of the ejecta. ■

Paragraph 1

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

○ important

○ extremely large

○ highly unusual

○ active

2. According to paragraph 1, Olympus Mons differs from volcanoes on the Tharsis bulge in that Olympus Mons

○ has more complex geologic features

○ shows less impact cratering

○ is taller

○ was formed at a later time

Paragraph 2

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

○ deep

○ complex

○ characteristic

○ ancient

4. According to paragraphs 1 and 2, which of the following is NOT true of the shield volcanoes on the Tharsis bulge?

○ They have broad, sloping sides.

○ They are smaller than the largest volcano on Mars.

○ They have channels that resemble the lava channels of volcanoes on Earth.

○ They are over 25 kilometers tall.

Paragraph 3

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

○ typically

○ frequently

○ actually

○ approximately

6. In paragraph 3, why does the author compare Maxwell Mons on Venus to the Hawaiian shield volcanoes on Earth?

○ to help explain the relationship between surface gravity and volcano height

○ to explain why Mars’s surface gravity is only 40 percent of Earth’s

○ to point out differences between the surface gravity of Earth and the surface gravity of Venus

○ to argue that there are more similarities than differences between volcanoes on different planets

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.

○ Although direct evidence of recent eruptions is lacking, scientists believe that these volcanoes were active as recently as100 million years ago.

○ Scientists estimate that volcanoes active more recently than 100 years ago will still have extensive impact cratering on their slopes.

○ If, as some evidence suggests, these volcanoes erupted as recently as100 million years ago, they may continue to be intermittently active.

○ Although these volcanoes were active as recently as 100 million years ago, there is no direct evidence of recent or ongoing eruptions.

Paragraph 4

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

○ frequently

○ significantly

○ clearly

○ surprisingly

9. According to paragraph 4, what is demonstrated by the fact that craters fill in much faster on Mars than on the Moon?

○ Erosion from meteoritic impacts takes place more quickly on Mars than on the Moon.

○ There is more dust on Mars than on the Moon.

○ The surface of Mars is a dry desert.

○ Wind is a powerful eroding force on Mars.

10. In paragraph 4, why does the author point out that Mars has few ancient craters that are less than 5 kilometers in diameter?

○ To explain why scientists believe that the surface matter filling Martian craters is mostly dust

○ To explain why scientists believe that the impact craters on Mars were created by meteoroids

○ To support the claim that the Martian atmosphere is an efficient erosive agent

○ To argue that Mars experienced fewer ancient impacts than the Moon did

Paragraph 5

11. According to paragraph 5, what have scientists been able to determine from studies of large impact cratering on Mars?

○ Some Martian volcanoes are much older than was once thought.

○ The age of Mars's surface can vary from area to area.

○ Large impact craters are not reliable indicators of age in areas with high volcanic activity.

○ Some areas of the Martian surface appear to be older than they actually are.

Paragraph 6

12. According to paragraph 6, the ejecta of Mars's crater Yuty differs from the ejecta of the Moon's Copernicus crater in that the ejecta of the Yuty crater

○ has now become part of a permafrost layer

○ contains a large volume of dust, soil and boulders

○ suggests that liquid once came out of the surface at the crater site

○ was thrown a comparatively long distance from the center of the crater

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

This surface feature has led to speculation about what may lie under Mars’s surface.

Where does the sentence best fit?

14. Prose summary

Answer Choices

○ Place motion on Mars, once considered to have played no role in shaping the planet’s surface, is now seen as being directly associated with the planet’s earliest volcanoes.

○ Mars has shield volcanoes, some of which are extremely tall because of the planet’s low surface gravity.

○ Although the erosive power of the Martian atmosphere ensures that Mars has fewer craters than the the Moon does, impact craters are prominent on Mars’s surface.

○ Scientists cannot yet reliably estimate the age of the Martian surface because there has been too much erosion of it.

○ Scientists have been surprised to discover that conditions just below the surface of Mars are very similar to conditions just below the surface of the Moon.

○ Studies of crater ejecta have revealed the possibility of a layer of permafrost below the surface of Mars.

**托福TPO阅读36文本+题目**

**The First Eye**

Putting a date on the first appearance of eyes depends on what one means by eye. If the term refers to a multicellular organ, even if it has just a few cells, then by definition, eyes could not form before there were multicellular animals. But many protists (animal-like, plantlike, or fungus-like unicellular organisms that require a water-based environment) can detect light by using aggregations of pigment molecules, and they use this information to modify their metabolic activity or motility (the ability to move spontaneously and independently). One of the familiar living examples, probably known to anyone who has taken a biology class, is the aquatic protozoan Euglena, which has an eyespot near its motile fIagellum (hairlike structure). Some living protists are very like their ancestral forms embedded in ancient sedimentary rocks, and this similarity suggests that the ability to detect light and modify behavior in response to light has been around for a very long time. Animals arose from one of such unicellular creatures, perhaps from one already specialized for a primitive kind of vision.

An eye is a collection of cells that are specialized for light detection through the presence of photosensitive pigment as well as a means of restricting the direction of incoming light that will strike the photosensitive cells. This definition says nothing about image formation, lenses, eye movements, or any of the other features we associate with our own eyes, but it does recognize the simplest form of functional and anatomical specialisation namely, detection of light. Everything else can be built up from this simple beginning, and some animals appear to have had eyes almost from the beginning of the animal kingdom.

Animals were scarce 600 million years ago in the geological era called the Precambrian. There are very few fossil remains from that time (though more keep turning up), and most evidence of the presence of animals is indirect, such as small tunnels in rock that could be ancient worm burrowings. But just 50 million years or so later, fossilized bits and pieces of animals abound, suggesting that a great burst of evolutionary creativity occurred in the 50-million-year interval. This surge of new life, marked by an abundance of animals, is called the Cambrian explosion.

The first direct evidence for the early origin of eyes comes from fossils that are about 530 million years old, a time shortly after the Cambrian explosion; they were found on a mountainside in British Columbia in a deposit known as the Burgess Shale. The Burgess Shale fossils are extraordinarily important because among them are remains of soft-bodied creatures, many of them lacking shells and other hard parts that fossilize easily. Consequently, their preservation is little short of miraculous (as are the delicate methods used to reconstruct three-dimensional structure from these flattened fossils), and they are one of the few known repositories of early soft-bodied animals.

Not all of the Burgess animals had eyes. However, some did. (Gross features location, size, and hemispheric shape are responsible for the designation of some structures as eyes). The reconstructed eyes of these Burgess animals look superficially like eyes of some living crustaceans, particularly those of shrimp and crabs whose eyes are mounted on stalks that improve the range of vision by raising the eyes above the surface of the head. The eyes of some Burgess organisms sat on stalks; those of others were on or a part of the body surface. One animal, Opabinia, had five eyes: two lateral pairs and a single medial eye; at least one of the lateral pairs had stalks that could have been movable. And some trilobite-like animals in the Burgess Shale had faceted eyes much like those of later fossil trilobites.

Although the presence of eyes on some of the Burgess animals indicates that eyes have been around for a very long time, it is unlikely that these were the first eyes; they seem much too large and (potentially) well developed to be brand new inventions. The best we can do is put the origin of eyes somewhere between the beginning of the Cambrian explo sion, about 600 million years ago, and the death of the Burgess animals, some 530 million years ago.

Paragraph 1: Putting a date on the first appearance of eyes depends on what one means by eye. If the term refers to a multicellular organ, even if it has just a few cells, then by definition, eyes could not form before there were multicellular animals. But many protists (animal-like, plantlike, or fungus-like unicellular organisms that require a water-based environment) can detect light by using aggregations of pigment molecules, and they use this information to modify their metabolic activity or motility (the ability to move spontaneously and independently). One of the familiar living examples, probably known to anyone who has taken a biology class, is the aquatic protozoan Euglena, which has an eyespot near its motile fIagellum (hairlike structure). Some living protists are very like their ancestral forms embedded in ancient sedimentary rocks, and this similarity suggests that the ability to detect light and modify behavior in response to light has been around for a very long time. Animals arose from one of such unicellular creatures, perhaps from one already specialized for a primitive kind of vision.

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

o Parts.

o Reactions.

o Groups.

o Types.

2. Paragraph 1 supports all of the following statements about protists EXCEPT:

o Some are multicellular.

o Some are able to move.

o Some have pigment molecules.

o They live in environments that contain moisture.

3. According to paragraph 1, what have scientists concluded from the fact that some living protists are very like their ancestral forms

o The eye did not evolve until multicellular organisms arose.

o The ability to detect light and change behavior in response to light has existed for a long time.

o The ancestral forms of these living protists likely had an eyespot near the motile flagellum.

o The ancestral forms of these living protists depended primarily on light as the mechanism for modifying their metabolic activity or motility.

Paragraph 2: An eye is a collection of cells that are specialized for light detection through the presence of photosensitive pigment as well as a means of restricting the direction of incoming light that will strike the photosensitive cells. This definition says nothing about image formation, lenses, eye movements, or any of the other features we associate with our own eyes, but it does recognize the simplest form of functional and anatomical specialisation namely, detection of light. Everything else can be built up from this simple beginning, and some animals appear to have had eyes almost from the beginning of the animal kingdom.

4. Paragraph 2 implies which of the following about the early eyes

o They were able to detect simple movements almost from the beginning of their evolution.

o They were not as sensitive to light as once thought.

o They could not form images.

o Their cells had more photosensitive pigment than do human eyes

Paragraph 3: Animals were scarce 600 million years ago in the geological era called the Precambrian. There are very few fossil remains from that time (though more keep turning up), and most evidence of the presence of animals is indirect, such as small tunnels in rock that could be ancient worm burrowings. But just 50 million years or so later, fossilized bits and pieces of animals abound, suggesting that a great burst of evolutionary creativity occurred in the 50-million-year interval. This surge of new life, marked by an abundance of animals, is called the Cambrian explosion.

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.

o There are few fossils from the Precambrian, though more keep turning up.

o Most evidence of animals in the fossil record is indirect and little of it is from the Precambrian.

o Tunnels in Precambrian rocks that may have been made by worms provide indirect evidence of these animals existing at that time.

o There are very few fossils of animals from the Precambrian and most evidence of animal life from that period is indirect.

6. According to paragraph 3, the Cambrian period was characterized by

o A great abundance of animals

o A slow rate of animal extinction

o The rapid fossilization of animals

o An increase in the life span of some animals

Paragraph 4: The first direct evidence for the early origin of eyes comes from fossils that are about 530 million years old, a time shortly after the Cambrian explosion; they were found on a mountainside in British Columbia in a deposit known as the Burgess Shale. The Burgess Shale fossils are extraordinarily important because among them are remains of soft-bodied creatures, many of them lacking shells and other hard parts that fossilize easily. Consequently, their preservation is little short of miraculous (as are the delicate methods used to reconstruct three-dimensional structure from these flattened fossils), and they are one of the few known repositories of early soft-bodied animals.

7. The phrase little short of miraculous is closest in meaning

o To very highly valued

o Amazing because almost impossible

o Causing controversy

o Almost but not quite complete

8. According to paragraph 4, all of the following are true of the Burgess Shale EXCEPT:

o Its fossils were in a flattened condition when discovered.

o Its fossils provide direct evidence about the origin of eyes.

o It contains fossils of both Precambrian and Cambrian animals.

o It contains fossilized remains of soft-bodied organisms.

Paragraph 5: Not all of the Burgess animals had eyes. However, some did. (Gross features location, size, and hemispheric shape are responsible for the designation of some structures as eyes). The reconstructed eyes of these Burgess animals look superficially like eyes of some living crustaceans, particularly those of shrimp and crabs whose eyes are mounted on stalks that improve the range of vision by raising the eyes above the surface of the head. The eyes of some Burgess organisms sat on stalks; those of others were on or a part of the body surface. One animal, Opabinia, had five eyes: two lateral pairs and a single medial eye; at least one of the lateral pairs had stalks that could have been movable. And some trilobite-like animals in the Burgess Shale had faceted eyes much like those of later fossil trilobites.

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

o Evolution

o Identification

o Reconstruction

o Confusion

10. The word lateral in the passage indicates a location at the

o Front

o Back

o Top

o Side

11. Why does the author point out that The eyes of some Burgess organisms sat on stalks?

o To suggest that some Burgess organisms had a greater range of vision than do living shrimp and crabs

o To explain why it is thought that one of the lateral pairs of eyes in Opabinia may have been movable

o To explain why the eyes of some Burgess animals were not recognizable as such before they were reconstructed

o To support the statement that the reconstructed eyes of Burgess animals look superficially like the eyes of some living crustaceans

Paragraph 6: Although the presence of eyes on some of the Burgess animals indicates that eyes have been around for a very long time, it is unlikely that these were the first eyes; they seem much too large and (potentially) well developed to be brand new inventions. The best we can do is put the origin of eyes somewhere between the beginning of the Cambrian explo sion, about 600 million years ago, and the death of the Burgess animals, some 530 million years ago.

12. Paragraph 6 suggests that the first eyes probably

o Came into existence long before 600 million years ago

o Came into existence at a late point in the Cambrian period

o Existed before the animals of the Burgess Shale existed

o Were larger than those of animals found in the Burgess Shale

Paragraph 1: Putting a date on the first appearance of eyes depends on what one means by eye. If the term refers to a multicellular organ, even if it has just a few cells, then by definition, eyes could not form before there were multicellular animals. ■But many protists (animal-like, plantlike, or fungus-like unicellular organisms that require a water-based environment) can detect light by using aggregations of pigment molecules, and they use this information to modify their metabolic activity or motility (the ability to move spontaneously and independently). ■One of the familiar living examples, probably known to anyone who has taken a biology class, is the aquatic protozoan Euglena, which has an eyespot near its motile fIagellum (hairlike structure). ■Some living protists are very like their ancestral forms embedded in ancient sedimentary rocks, and this similarity suggests that the ability to detect light and modify behavior in response to light has been around for a very long time. ■Animals arose from one of such unicellular creatures, perhaps from one already specialized for a primitive kind of vision.

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

Molaria spinifera and H. Optata, both of which lived in water levels beyond the reach of light, fit into this category.

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.

Drag your choices to the spaces where they belong. To review the passage, click on View Text.

Answer Choices

o The ability of some unicellular organisms to detect light and change their behavior accordingly suggests that eyes did not originate with multicellular animals.

o The earliest eyes apparently contained molecules that were capable of forming and focusing images.

o Too few fossils from the Precambrian have been found to determine which if any Precambrian organisms had eyes.

o Evidence from the Burgess Shale suggests that eyes of some early animals were similar to the eyes of living crustaceans.

o Fossil evidence suggests that organisms in the Burgess Shale with faceted eyes developed later than organisms in the Burgess Shale with n onfaceted eyes.

o The large size and possible complexity of the eyes of some organisms in the Burgess Shale suggest that their eyes were not the first eyes.

**The origin of Earth’s atmosphere**

In order to understand the origin of Earth's atmosphere, we must go back to the earliest days of the solar system, before the planets themselves were formed from a disk of rocky material spinning around the young Sun. This material gradually coalesced into lumps called planetesimals as gravity and chance smashed smaller pieces together, a chaotic and violent process that became more so as planetesimals grew in size and gravitational pull. Within each orbit, collisions between planetesimals generated immense heat and energy. How violent these processes were is suggested by the odd tilt and spin of many of the planets, which indicate that each of the planets was, like a billiard ball, struck at some stage by another large body of some kind. Visual evidence of these processes can be seen by looking at the Moon. Because the Moon has no atmosphere, its surface is not subject to erosion, so it retains the marks of its early history. Its face is deeply scarred by millions of meteoric impacts, as you can see on a clear night with a pair of binoculars. The early Earth did not have much of an atmosphere. Before it grew to full size, its gravitational pull was insufficient to prevent gases from drifting off into space, while the solar wind (the great stream of atomic particles emitted from the Sun) had already driven away much of the gaseous material from the inner orbits of the solar system. So we must imagine the early Earth as a mixture of rocky materials, metals, and trapped gases, subject to constant bombardment by smaller planetesimals and without much of an atmosphere.

As it began to reach full size, Earth heated up, partly because of collisions with other planetesimals and partly because of increasing internal pressures as it grew in size. In addition, the early Earth contained abundant radioactive materials, also a source of heat. As Earth heated up, its interior melted. Within the molten interior, under the influence of gravity, different elements were sorted out by density. By about 40 million years after the formation of the solar system, most of the heavier metallic elements in the early Earth, such as iron and nickel, had sunk through the hot sludge to the center giving Earth a core dominated by iron. This metallic core gives Earth its characteristic magnetic field, which has played an extremely important role in the history of our planet.

As heavy materials headed for the center of Earth, lighter silicates (such as the mineral quartz) drifted upward. The denser silicates formed Earth's mantle, a region almost 3,000 kilometers thick between the core and the crust. With the help of bombardment by comets, whose many impacts scarred and heated Earth's surface, the lightest silicates rose to Earth's surface, where they cooled more rapidly than the better- insulated materials in Earth's interior. These lighter materials, such as the rocks we call granites, formed a layer of continental crust about 35 kilometers thick. Relative to Earth as a whole, this is as thin as an eggshell. Seafloor crust is even thinner, at about 7 kilometers; thus, even continental crust reaches only about 1/200th of the way to Earth's core. Much of the early continental crust has remained on Earth's surface to the present day.

The lightest materials of all, including gases such as hydrogen and helium, bubbled through Earth's interior to the surface. So we can imagine the surface of the early Earth as a massive volcanic field. And we can judge pretty well what gases bubbled up to that surface by analyzing the mixture of gases emitted by volcanoes. These include hydrogen, helium, methane, water vapor, nitrogen, ammonia, and hydrogen sulfide. Other materials, including large amounts of water vapor, were brought in by cometary bombardments. Much of the hydrogen and helium escaped; but once Earth was fully formed, it was large enough for its gravitational field to hold most of the remaining gases, and these formed Earth's first stable atmosphere.

Paragraph 1: In order to understand the origin of Earth's atmosphere, we must go back to the earliest days of the solar system, before the planets themselves were formed from a disk of rocky material spinning around the young Sun. This material gradually coalesced into lumps called planetesimals as gravity and chance smashed smaller pieces together, a chaotic and violent process that became more so as planetesimals grew in size and gravitational pull. Within each orbit, collisions between planetesimals generated immense heat and energy. How violent these processes were is suggested by the odd tilt and spin of many of the planets, which indicate that each of the planets was, like a billiard ball, struck at some stage by another large body of some kind. Visual evidence of these processes can be seen by looking at the Moon. Because the Moon has no atmosphere, its surface is not subject to erosion, so it retains the marks of its early history. Its face is deeply scarred by millions of meteoric impacts, as you can see on a clear night with a pair of binoculars. The early Earth did not have much of an atmosphere. Before it grew to full size, its gravitational pull was insufficient to prevent gases from drifting off into space, while the solar wind (the great stream of atomic particles emitted from the Sun) had already driven away much of the gaseous material from the inner orbits of the solar system. So we must imagine the early Earth as a mixture of rocky materials, metals, and trapped gases, subject to constant bombardment by smaller planetesimals and without much of an atmosphere.

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

o Collided

o Joined

o Changed

o Shrank

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

o Rapid

o Disorganized

o Intense

o Long-lasting

3. All of the following are true of the planetesimals mentioned in paragraph 1 EXCEPT:

o They were formed of rocky material spinning around the early Sun.

o They collided violently with each other.

o They gradually grew in size.

o They lost their atmospheres as they were hit by larger bodies.

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

o Reveals

o Acquires

o Hides

o Preserves

5. The author discusses the Moon in paragraph 1 in order to

o Help explain why Earth had fewer meteoric impacts than other planets in the solar system

o Show why it is difficult to understand how the first planetary atmospheres developed

o Help explain the processes that took place in the formation of large planetary bodies in the solar system

o Illustrate why the Moon's spin and tilt are unique among other planetary bodies in the solar system

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

o Considerable

o Unpredictable

o Continual

o Violent

Paragraph 2: As it began to reach full size, Earth heated up, partly because of collisions with other planetesimals and partly because of increasing internal pressures as it grew in size. In addition, the early Earth contained abundant radioactive materials, also a source of heat. As Earth heated up, its interior melted. Within the molten interior, under the influence of gravity, different elements were sorted out by density. By about 40 million years after the formation of the solar system, most of the heavier metallic elements in the early Earth, such as iron and nickel, had sunk through the hot sludge to the center giving Earth a core dominated by iron. This metallic core gives Earth its characteristic magnetic field, which has played an extremely important role in the history of our planet.

7. Paragraph 2 answers which of the following questions about early Earth

o What caused materials on Earth to become radioactive

o What percentage of Earth's core was nickel

o What internal pressures caused Earth to heat up as it grew in size

o What caused Earth's magnetic field

8. According to paragraph 2, Earth's core is mostly iron because, compared to most other elements on early Earth, iron

o was denser

o melted more easily

o was more radioactive

o was more plentiful

Paragraph 3: As heavy materials headed for the center of Earth, lighter silicates (such as the mineral quartz) drifted upward. The denser silicates formed Earth's mantle, a region almost 3,000 kilometers thick between the core and the crust. With the help of bombardment by comets, whose many impacts scarred and heated Earth's surface, the lightest silicates rose to Earth's surface, where they cooled more rapidly than the better- insulated materials in Earth's interior. These lighter materials, such as the rocks we call granites, formed a layer of continental crust about 35 kilometers thick. Relative to Earth as a whole, this is as thin as an eggshell. Seafloor crust is even thinner, at about 7 kilometers; thus, even continental crust reaches only about 1/200th of the way to Earth's core. Much of the early continental crust has remained on Earth's surface to the present day.

10. According to paragraph 3, Earth's continental crust

o has changed significantly in composition over time

o was as thick as Earth's mantle in its early stages

o is very thin relative to Earth's size

o caused the temperatures of Earth's early core and mantle to gradually increase

Paragraph 4: The lightest materials of all, including gases such as hydrogen and helium, bubbled through Earth's interior to the surface. So we can imagine the surface of the early Earth as a massive volcanic field. And we can judge pretty well what gases bubbled up to that surface by analyzing the mixture of gases emitted by volcanoes. These include hydrogen, helium, methane, water vapor, nitrogen, ammonia, and hydrogen sulfide. Other materials, including large amounts of water vapor, were brought in by cometary bombardments. Much of the hydrogen and helium escaped; but once Earth was fully formed, it was large enough for its gravitational field to hold most of the remaining gases, and these formed Earth's first stable atmosphere.

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

o Released

o Consumed

o Contained

o Heated

12. What can be inferred from paragraph 4 about Earth's first stable atmosphere?

o It existed before Earth was yet fully formed.

o It contained very little hydrogen and helium.

o It contained only materials that had bubbled up through Earth's surface.

o It lacked water vapor.

Paragraph 3: As heavy materials headed for the center of Earth, lighter silicates (such as the mineral quartz) drifted upward. The denser silicates formed Earth's mantle, a region almost 3,000 kilometers thick between the core and the crust. With the help of bombardment by comets, whose many impacts scarred and heated Earth's surface, the lightest silicates rose to Earth's surface, where they cooled more rapidly than the better-insulated materials in Earth's interior. ■These lighter materials, such as the rocks we call granites, formed a layer of continental crust about 35 kilometers thick. ■Relative to Earth as a whole, this is as thin as an eggshell. ■Seafloor crust is even thinner, at about 7 kilometers; thus, even continental crust reaches only about 1/200th of the way to Earth's core. Much of the early continental crust has remained on Earth's surface to the present day. ■

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

Even some of its oldest portions as old as 3.8 billion years can still be found in parts of Canada, Australia, South Africa, and Greenland.

14. Directions: An introductory sentence for a brief summary of the passage 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 answer choices 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 questions is worth 2 points.

Drag your choices to the spaces where they belong.

Answer Choices

o Early Earth's lack of an atmosphere explains why it was bombarded with much more frequency and violence than other planetesimals.

o Continued bombardments and internal pressures made the growing Earth hotter, causing its interior to melt and the heavier elements to sink and form Earth's core.

o Lighter elements from Earth's interior rose and formed the mantle, a denser layer of silicates around the core, and the crust, a thinner layer of silicates at Earth's surface.

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**Energy and the industrial Revolution**

For years historians have sought to identify crucial elements in the eighteenth-century rise in industry, technology, and economic power known as the Industrial Revolution, and many give prominence to the problem of energy. Until the eighteenth century, people relied on energy derived from plants as well as animal and human muscle to provide power. Increased efficiency in the use of water and wind helped with such tasks as pumping, milling, or sailing. However, by the eighteenth century, Great Britain in particular was experiencing an energy shortage. Wood, the primary source of heat for homes and industries and also used in the iron industry as processed charcoal, was diminishing in supply. Great Britain had large amounts of coal; however, there were not yet efficient means by which to produce mechanical energy or to power machinery. This was to occur with progress in the development of the steam engine.

In the late 1700s James Watt designed an efficient and commercially viable steam engine that was soon applied to a variety of industrial uses as it became cheaper to use. The engine helped solve the problem of draining coal mines of groundwater and increased the production of coal needed to power steam engines elsewhere. A rotary engine attached to the steam engine enabled shafts to be turned and machines to be driven, resulting in mills using steam power to spin and weave cotton. Since the steam engine was fired by coal, the large mills did not need to be located by rivers, as had mills that used water- driven machines. The shift to increased mechanization in cotton production is apparent in the import of raw cotton and the sale of cotton goods. Between 1760 and 1850, the amount of raw cotton imported increased 230 times. Production of British cotton goods increased sixtyfold, and cotton cloth became Great Britain’s most important product, accounting for one-half of all exports. The success of the steam engine resulted in increased demands for coal, and the consequent increase in coal production was made possible as the steam-powered pumps drained water from the ever-deeper coal seams found below the water table.

The availability of steam power and the demands for new machines facilitated the transformation of the iron industry. Charcoal, made from wood and thus in limited supply, was replaced with coal-derived coke (substance left after coal is heated) as steam-driven bellows came into use for producing of raw iron. Impurities were burnt away with the use of coke, producing a high-quality refined iron. Reduced cost was also instrumental in developing steam-powered rolling mills capable of producing finished iron of various shapes and sizes. The resulting boom in the iron industry expanded the annual iron output by more than 170 times between 1740 and 1840, and by the 1850s Great Britain was producing more tons ofiron than the rest of the world combined. The developments in the iron industry were in part a response to the demand for more machines and the ever -widening use of higher -quality iron in other industries.

Steam power and iron combined to revolutionize transport, which in turn had further implications. Improvements in road construction and sailing had occurred, but shipping heavy freight over land remained expensive, even with the use of rivers and canals wherever possible. Parallel rails had long been used in mining operations to move bigger loads, but horses were still the primary source of power. However, the arrival of the steam engine initiated a complete transformation in rail transportation, entrenching and expanding the Industrial Revolution. As transportation improved, distant and larger markets within the nation could be reached, thereby encouraging the development of larger factories to keep pace with increasing sales. Greater productivity and rising demands provided entrepreneurs with profits that could be reinvested to take advantage of new technologies to further expand capacity, or to seek alternative investment opportunities. Also, the availability of jobs in railway construction attracted many rural laborers accustomed to seasonal and temporary employment. When the work was completed, many moved to other construction jobs or to factory work in cities and towns, where they became part of an expanding working class.

Paragraph 1: For years historians have sought to identify crucial elements in the eighteenth-century rise in industry, technology, and economic power known as the Industrial Revolution, and many give prominence to the problem of energy. Until the eighteenth century, people relied on energy derived from plants as well as animal and human muscle to provide power. Increased efficiency in the use of water and wind helped with such tasks as pumping, milling, or sailing. However, by the eighteenth century, Great Britain in particular was experiencing an energy shortage. Wood, the primary source of heat for homes and industries and also used in the iron industry as processed charcoal, was diminishing in supply. Great Britain had large amounts of coal; however, there were not yet efficient means by which to produce mechanical energy or to power machinery. This was to occur with progress in the development of the steam engine.

1. Why does the author provide the information that “Great Britain had large amounts of coal” ?

o To reject the claim that Britain was facing an energy shortage in the eighteenth century

o To explain why coal rather than other energy resources became the primary source of heat for homes and industries in eighteenth-century Britain

o To indicate that Britain’s energy shortage was not the result of a lack of fuel

o To explain why coal mining became an important industry in nineteenth-century

2. What was “the problem of energy” that had to be solved to make the Industrial Revolution of the eighteenth century possible?

o Water and wind could not be used efficiently.

o There was no efficient way to power machinery.

o Steam engines required large amounts of coal, which was in short supply.

o Neither humans nor animals were strong enough to provide the power required for industrial application.

Paragraph 2: In the late 1700s James Watt designed an efficient and commercially viable steam engine that was soon applied to a variety of industrial uses as it became cheaper to use. The engine helped solve the problem of draining coal mines of groundwater and increased the production of coal needed to power steam engines elsewhere. A rotary engine attached to the steam engine enabled shafts to be turned and machines to be driven, resulting in mills using steam power to spin and weave cotton. Since the steam engine was fired by coal, the large mills did not need to be located by rivers, as had mills that used water- driven machines. The shift to increased mechanization in cotton production is apparent in the import of raw cotton and the sale of cotton goods. Between 1760 and 1850, the amount of raw cotton imported increased 230 times. Production of British cotton goods increased sixtyfold, and cotton cloth became Great Britain’s most important product, accounting for one-half of all exports. The success of the steam engine resulted in increased demands for coal, and the consequent increase in coal production was made possible as the steam-powered pumps drained water from the ever-deeper coal seams found below the water table.

3. Which of the following is NOT mentioned in paragraph 2 as development cotton mills brought about by Watt's steam engine?

o The importing of huge quantities of raw cotton by Britain

o Increased mechanization

o More possibilities for mill location

o Smaller mills

4. The phrase “apparent in” in the passage is closest in meaning to

o clearly seen in

o aided by

o associated with

o followed by

5. According to paragraph 2, what was Britain’s most important export by 1850?

o Raw cotton

o Cotton cloth

o Steam-powered pumps

o Coal

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

o resulting

o encouraging

o well documented

o immediate

7. What is the role of paragraph 2 in the passage as a whole?

o It explains how by increasing the supply of raw materials from other countries, British industries were able to reduce costs and increase production.

o It explains how the production of mechanical energy and its benefits spread quickly across countries that were linked commercially with Great Britain.

o It demonstrates why developments in a single industry could not have caused the Industrial Revolution.

o It illustrates why historians have assigned great importance to the issue of energy in the rise of the Industrial Revolution.

Paragraph 3: The availability of steam power and the demands for new machines facilitated the transformation of the iron industry. Charcoal, made from wood and thus in limited supply, was replaced with coal-derived coke (substance left after coal is heated) as steam-driven bellows came into use for producing of raw iron. Impurities were burnt away with the use of coke, producing a high-quality refined iron. Reduced cost was also instrumental in developing steam-powered rolling mills capable of producing finished iron of various shapes and sizes. The resulting boom in the iron industry expanded the annual iron output by more than 170 times between 1740 and 1840, and by the 1850s Great Britain was producing more tons ofiron than the rest of the world combined. The developments in the iron industry were in part a response to the demand for more machines and the ever -widening use of higher -quality iron in other industries.

8. According to paragraph 3, why was the use of coke important for the iron industry?

o It helped make wood into charcoal.

o It reduced the dependency on steam-powered machines used for the production of iron.

o It replaced charcoal in the production of raw and refined iron.

o It powered the machines used to extract coal in coal mines.

9. According to paragraph 3, all of the following were true of the iron industry in Great Britain during the 1800s EXCEPT:

o Steam-driven bellows were used to produce raw iron.

o By the 1850s Britain was the w o r l d’s largest producer of iron.

o Steam-powered mills made it possible to produce iron of different shapes and sizes.

o Greater demand for higher-quality iron increased its price.

Paragraph 4: Steam power and iron combined to revolutionize transport, which in turn had further implications. Improvements in road construction and sailing had occurred, but shipping heavy freight over land remained expensive, even with the use of rivers and canals wherever possible. Parallel rails had long been used in mining operations to move bigger loads, but horses were still the primary source of power. ■However, the arrival of the steam engine initiated a complete transformation in rail transportation, entrenching and expanding the Industrial Revolution. ■As transportation improved, distant and larger markets within the nation could be reached, thereby encouraging the development of larger factories to keep pace with increasing sales. ■Greater productivity and rising demands provided entrepreneurs with profits that could be reinvested to take advantage of new technologies to further expand capacity, or to seek alternative investment opportunities. ■Also, the availability of jobs in railway construction attracted many rural laborers accustomed to seasonal and temporary employment. When the work was completed, many moved to other construction jobs or to factory work in cities and towns, where they became part of an expanding working class.

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

o anticipated

o accelerated

o spread

o started

11. Paragraph 4 implies which of the following about the transformation in rail transportation?

o Because railway construction employed mostly rural laborers, unemployment increased among urban workers.

o It resulted in more trade within the country, but less trade with markets that could be reached only by ocean shipping.

o It made shipping freight overland to distant markets less expensive.

o It resulted in higher wages for factory workers.

12. The phrase "accustomed to" in the passage is closest in meaning to

o in need of

o used to

o tired of

o encouraged by

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

The first steam-powered locomotives were slow but they rapidly improved in speed and carrying capacity.

14.Directions: An introductory sentence for a brief summary of the passage 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 answer choices 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.

Drag your choices to the spaces where they belong.

Answer Choices

o For years, historians disregarded the issue of energy as a major element in the rise of the Industrial Revolution and focused instead on technological developments and increased production.

o The introduction and growth of steam-powered rail transport was a major factor in Britain's economic expansion during the Industrial Revolution.

o An expansion of the Industrial Revolution outside Great Britain occurred when British industries began to import raw cotton and high-quality iron.

o By 1850, the use of steam power in Britain's mills, mines, and iron industry made Britain a world leader in the production of cotton cloth and iron.

o Since the basic infrastructure was in place, the Industrial Revolution fueled itself with enlarging markets requiring ever more expansion of factories and workforce.

o By the end of the 1800s, railway construction attracted so many laborers that factories could not find enough workers to keep up with increasing sales.

**TPO阅读37原文+题目**

**The Emergence of Civilization**

Starting around 8000 B.C.E., the most extensive exploitation of agriculture occurred in river valleys, where there were both good soil and a dependable water supply regardless of the amount of rainfall. In the Near East, this happened in the Fertile Crescent, the region extending up the Nile Valley in Egypt, north through the Levant (Palestine, Lebanon, and Syria), and southeast into the Tigris and Euphrates river valleys of Mesopotamia. The richest soil was located in the deltas at the mouths of the rivers, but the deltas were swampy and subject to flooding. Before they could be farmed, they needed to be drained and irrigated, and flood-control systems had to be constructed. These activities required administrative organization and the ability to mobilize large pools of labor. In Mesopotamia, perhaps as a consequence of a period of drought, massive land-use projects were undertaken after 4000 B.C.E. to cultivate the rich delta soils of the Tigris and Euphrates Rivers. The land was so productive that many more people could be fed, and a great population explosion resulted. Villages grew into cities of tens of thousands of persons.

These large cities needed some form of centralized administration. Archaeological evidence indicates that the organization initially was provided by religion, for the largest building in each city was a massive temple honoring one of the Mesopotamian gods. In Uruk, for example, a 60-foot- long temple known as the White House was built before 3000 B.C.E. There were no other large public buildings, suggesting that the priests who were in charge of the temples also were responsible for governing the city and organizing people to work in the fields and on irrigation projects building and maintaining systems of ditches and dams.

The great concentration of wealth and resources in the river valleys brought with it further technological advances, such as wheeled vehicles, multicolored pottery and the pottery wheel, and the weaving of wool garments. Advances in metal technology just before 2000 B.C.E. resulted in the creation of bronze, a durable alloy (or mixture) of about 90 percent copper and 10 percent tin that provided a sharp cutting edge for weapons.

By 3000 B.C.E., the economies and administrations of Mesopotamia and Egypt had become so complex that some form of record keeping was needed. As a result, writing was invented. Once a society became literate, it passed from the period known as prehistory into the historic period. In fact, the word history comes from a Greek word meaning narrative people could not provide a detailed permanent account of their past until they were able to write.

The totality of these developments resulted in the appearance, around 300 B.C.E., of a new form of culture called civilization. The first civilizations had several defining characteristics. They had economies based on agriculture. They had cities that functioned as administrative centers and usually had large populations. They had different social classes, such as free persons and slaves. They had specialization of labor, that is, different people serving, for example, as rulers, priests, craft workers, merchants, soldiers, and farmers. And they had metal technology and a system of writing. As of 3000 B.C.E., civilization in these terms existed in Mesopotamia, Egypt, India, and China.

This first phase of civilization is called the Bronze Age because of the importance of metal technology. The most characteristic Near Eastern Bronze Age civilizations, those of Mesopotamia and Egypt, were located in river valleys, were based on the extensive exploitation of agriculture, and supported large populations. Bronze was a valuable commodity in these civilizations; the copper and tin needed for its manufacture did not exist in river valleys and had to be imported. Bronze was therefore used mainly for luxury items, such as jewelry or weapons, not for everyday domestic items, which were made from pottery, animal products, wood, and stone. In particular, bronze was not used for farming tools. Thus, early civilizations based on large-scale agriculture, such as those of Mesopotamia and Egypt, were feasible only in soils that could be worked by wooden plows pulled by people or draft animals such as oxen. Other Bronze Age civilizations, however, such as those that arose in the Levant and eastern Mediterranean, took advantage of their location on communication routes to pursue economies based on trade.

Paragraph1: Starting around 8000 B.C.E., the most extensive exploitation of agriculture occurred in river valleys, where there were both good soil and a dependable water supply regardless of the amount of rainfall. In the Near East, this happened in the Fertile Crescent, the region extending up the Nile Valley in Egypt, north through the Levant (Palestine, Lebanon, and Syria), and southeast into the Tigris and Euphrates river valleys of Mesopotamia. The richest soil was located in the deltas at the mouths of the rivers, but the deltas were swampy and subject to flooding. Before they could be farmed, they needed to be drained and irrigated, and flood-control systems had to be constructed. These activities required administrative organization and the ability to mobilize large pools of labor. In Mesopotamia, perhaps as a consequence of a period of drought, massive land-use projects were undertaken after 4000 B.C.E. to cultivate the rich delta soils of the Tigris and Euphrates Rivers. The land was so productive that many more people could be fed, and a great population explosion resulted. Villages grew into cities of tens of thousands of persons.

1. Which of the following helps explain why the most extensive exploitation of agriculture occurred in river valleys?

o In river valleys farmers did not have to depend on rain for water.

o The soil in river valleys did not require irrigation.

o Swampy areas in river valleys were easy to drain.

o The expanding populations in river valleys provided large pools of labor.

2. Why does the author mention a period of drought?

o To help explain why the richest soils in the Near East were located in the deltas at the mouths of the Tigris and Euphrates Rivers

o To suggest a reason for undertaking the massive effort to make the deltas of the Tigris and Euphrates Rivers farmable

o To identify a condition that often affected agricultural production in Mesopotamia

o To support the idea that mobilizing large pools of labor after 4000 B.C.E. required significant administrative organization

3. According to paragraph 1, what was one result of the farming systems developed in river deltas in the Near East?

o There was a large increase in the overall amount of food produced

o Large pools of labor became available to perform administrative tasks.

o The soil in these deltas grew much richer.

o The number of farming villages surrounding cities increased.

Paragraph 2: These large cities needed some form of centralized administration. Archaeological evidence indicates that the organization initially was provided by religion, for the largest building in each city was a massive temple honoring one of the Mesopotamian gods. In Uruk, for example, a 60-foot- long temple known as the White House was built before 3000 B.C.E. There were no other large public buildings, suggesting that the priests who were in charge of the temples also were responsible for governing the city and organizing people to work in the fields and on irrigation projects building and maintaining systems of ditches and dams.

4. According to paragraph 2, the fact that temples appear to have been the only large public buildings in Mesopotamian cities has been interpreted as evidence that these cities

o needed some form of central administration

o were initially administered by priests

o were all governed from Uruk

o had difficulty organizing workers for building projects

Paragraph 3: The great concentration of wealth and resources in the river valleys brought with it further technological advances, such as wheeled vehicles, multicolored pottery and the pottery wheel, and the weaving of wool garments. Advances in metal technology just before 2000 B.C.E. resulted in the creation of bronze, a durable alloy (or mixture) of about 90 percent copper and 10 percent tin that provided a sharp cutting edge for weapons.

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

o existing for a long time without significant damage

o difficult to produce

o recently discovered

o extremely useful

6. Paragraph 3 indicates that technological advances affected all of the following EXCEPT

o transportation

o clothing manufacture

o warfare and hunting

o the distribution of wealth and resources

Paragraph 4: By 3000 B.C.E., the economies and administrations of Mesopotamia and Egypt had become so complex that some form of record keeping was needed. As a result, writing was invented. Once a society became literate, it passed from the period known as prehistory into the historic period. In fact, the word history comes from a Greek word meaning narrative people could not provide a detailed permanent account of their past until they were able to write.

7. According to paragraph 4, why was writing invented

o To reduce unnecessary social complexity

o To keep economic and administrative records

o To record oral historical narratives

o To help people better understand their own past

Paragraph 5: The totality of these developments resulted in the appearance, around 300 B.C.E., of a new form of culture called civilization. The first civilizations had several defining characteristics. They had economies based on agriculture. They had cities that functioned as administrative centers and usually had large populations. They had different social classes, such as free persons and slaves. They had specialization of labor, that is, different people serving, for example, as rulers, priests, craft workers, merchants, soldiers, and farmers. And they had metal technology and a system of writing. As of 3000 B.C.E., civilization in these terms existed in Mesopotamia, Egypt, India, and China.

8. The word defining in the passage is closest in meaning to

o important

o obvious

o identifying

o interesting

9. According to paragraph 5, all of the following are true of the first civilizations EXCEPT:

o Their soldiers and priests also worked as farmers.

o Their populations were divided into different social classes.

o They had developed technologies for working with metals.

o They were typically administered from large cities.

Paragraph 6: This first phase of civilization is called the Bronze Age because of the importance of metal technology. The most characteristic Near Eastern Bronze Age civilizations, those of Mesopotamia and Egypt, were located in river valleys, were based on the extensive exploitation of agriculture, and supported large populations. ■Bronze was a valuable commodity in these civilizations; the copper and tin needed for its manufacture did not exist in river valleys and had to be imported. Bronze was therefore used mainly for luxury items, such as jewelry or weapons, not for everyday domestic items, which were made from pottery, animal products, wood, and stone. ■In particular, bronze was not used for farming tools. ■Thus, early civilizations based on large-scale agriculture, such as those of Mesopotamia and Egypt, were feasible only in soils that could be worked by wooden plows pulled by people or draft animals such as oxen. ■Other Bronze Age civilizations, however, such as those that arose in the Levant and eastern Mediterranean, took advantage of their location on communication routes to pursue economies based on trade.

10. The word domestic in the passage is closet in meaning to

o Practical

o Household

o Standard

o Necessary

11. According to paragraph 6, why was bronze not used for farming tools in Bronze age civilizations of the Near East

o Wooden farming tools were more effective in the soils of the region.

o Bronze farming tools would have deteriorated quickly in the climate.

o Bronze was too expensive to use for farming tools.

o People had not yet discovered how to make farming tools out of bronze.

12. According to paragraph 6, which of the following was true of at least some civilizations of the Bronze Age?

o They did not develop urban centers with large populations.

o They did not use metals to make bronze.

o They had an economy that was not based on agriculture.

o They did not use bronze for luxury items such as jewelry.

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

This significantly limited the availability of bronze.

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.

Drag your choices to the spaces where they belong. To review the passage, click on View Text.

Answer Choices

o Before the rise of large cities with complex economies, there had been no need for any kind of administrative structure to organize workers, and thus religion tended to be the only source of authority.

o Large cities functioned as administrative centers, creating a concentration of wealth and resources that stimulated technological advances, such as the invention of writing and the creation of bronze.

o By 3000 B.C.E., a number of agricultural societies had emerged as civilizations characterized by large cities, centralized administrations, specialization of labor, class divisions, metal technology, and writing.

o For a culture to be considered a civilization, it must have independently invented its own form of writing and become generally literate, thereby moving from prehistory into the historic period.

o Although river-valley societies had to import the metals for making bronze, the first phase of civilization is known as the Bronze Age because of the importance of metal technology in these societies.

o The creation of bronze made it possible for civilizations based on large-scale agriculture to be located far away from the river valleys and deltas in areas where the soil was less rich and less easy to work.

TPO37-2

**Stream Deposits**

A large, swift stream or river can carry all sizes of particles, from clay to boulders. When the current slows down, its competence (how much it can carry) decreases and the stream deposits the largest particles in the streambed. If current velocity continues to decrease as a flood wanes, for example finer particles settle out on top of the large ones. Thus, a stream sorts its sediment according to size. A waning flood might deposit a layer of gravel, overlain by sand and finally topped by silt and clay. Streams also sort sediment in the downstream direction. Many mountain streams are choked with boulders and cobbles, but far downstream, their deltas are composed mainly of fine silt and clay. This downstream sorting is curious because stream velocity generally increases in the downstream direction. Competence increases with velocity, so a river should be able to transport larger particles than its tributaries carry. One explanation for downstream sorting is that abrasion wears away the boulders and cobbles to sand and silt as the sediment moves downstream over the years. Thus, only the fine sediment reaches the lower parts of most rivers.

A stream deposits its sediment in three environments: Alluvial fans and deltas form where stream gradient (angle of incline) suddenly decreases as a stream enters a flat plain, a lake, or the sea; floodplain deposits accumulate on a floodplain adjacent to the stream channel; and channel deposits form in the stream channel itself. Bars, which are elongated mounds of sediment, are transient features that form in the stream channel and on the banks. They commonly form in one year and erode the next. Rivers used for commercial navigation must be recharted frequently because bars shift from year to year. Imagine a winding stream. The water on the outside of the curve moves faster than the water on the inside. The stream erodes its outside bank because the current's inertia drives it into the outside bank. At the same time, the slower water on the inside point of the bend deposits sediment, forming a point bar. A mid-channel bar is a sandy and gravelly deposit that forms in the middle of a stream channel. Most streams flow in a single channel.

In contrast, a braided stream flows in many shallow, interconnecting channels. A braided stream forms where more sediment is supplied to a stream than it can carry. The stream dumps the excess sediment, forming mid-channel bars. The bars gradually fill a channel, forcing the stream to overflow its banks and erode new channels. As a result, a braided stream flows simultaneously in several channels and shifts back and forth across its floodplain. Braided streams are common in both deserts and glacial environments because both produce abundant sediment. A desert yields large amounts of sediment because it has little or no vegetation to prevent erosion. Glaciers grind bedrock into fine sediment, which is carried by streams flowing from the melting ice. If a steep mountain stream flows onto a flat plain, its gradient and velocity decrease sharply. As a result, it deposits most of its sediment in a fan-shaped mound called an alluvial fan. Alluvial fans are common in many arid and semiarid mountainous regions.

A stream also slows abruptly where it enters the still water of a lake or ocean. The sediment settles out to form a nearly flat landform called a delta. Part of the delta lies above water level, and the remainder lies slightly below water level. Deltas are commonly fan-shaped, resembling the Greek letter delta (!〇). Both deltas and alluvial fans change rapidly. Sediment fills channels (waterways), which are then abandoned while new channels develop as in a braided stream. As a result, a stream feeding a delta or fan splits into many channels called distributaries. A large delta may spread out in this manner until it covers thousands of square kilometers. Most fans, however, are much smaller, covering a fraction of a square kilometer to a few square kilometers. The Mississippi River has flowed through different delta channels during the past 5,000 to 6,000 years. But in recent years, engineers have built great systems of levees (retaining walls) in attempts to stabilize the channels.

Paragraph 1: A large, swift stream or river can carry all sizes of particles, from clay to boulders. When the current slows down, its competence (how much it can carry) decreases and the stream deposits the largest particles in the streambed. If current velocity continues to decrease as a flood wanes, for example finer particles settle out on top of the large ones. Thus, a stream sorts its sediment according to size. A waning flood might deposit a layer of gravel, overlain by sand and finally topped by silt and clay. Streams also sort sediment in the downstream direction. Many mountain streams are choked with boulders and cobbles, but far downstream, their deltas are composed mainly of fine silt and clay. This downstream sorting is curious because stream velocity generally increases in the downstream direction. Competence increases with velocity, so a river should be able to transport larger particles than its tributaries carry. One explanation for downstream sorting is that abrasion wears away the boulders and cobbles to sand and silt as the sediment moves downstream over the years. Thus, only the fine sediment reaches the lower parts of most rivers.

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

o Strange

o Rapid

o Seasonal

o Essential

2. According to paragraph 1, the competence of a stream increase as

o downstream sorting decreases

o flooding wanes

o the speed of the current increases

o the size of particles increases

3. According to paragraph 1, all of the following are true of stream sorting EXCEPT:

o Most of the particles in mountain streams pile up behind boulders and cobbles.

o When particles of different sizes settle in a place, the smaller ones sit atop the larger ones.

o There are generally more large particles upstream than downstream in a river.

o In some situations, downstream particles are created from rocks that eroded as they traveled downstream.

Paragraph 2: A stream deposits its sediment in three environments: Alluvial fans and deltas form where stream gradient (angle of incline) suddenly decreases as a stream enters a flat plain, a lake, or the sea; floodplain deposits accumulate on a floodplain adjacent to the stream channel; and channel deposits form in the stream channel itself. Bars, which are elongated mounds of sediment, are transient features that form in the stream channel and on the banks. They commonly form in one year and erode the next. Rivers used for commercial navigation must be recharted frequently because bars shift from year to year. Imagine a winding stream. The water on the outside of the curve moves faster than the water on the inside. The stream erodes its outside bank because the current's inertia drives it into the outside bank. At the same time, the slower water on the inside point of the bend deposits sediment, forming a point bar. A mid-channel bar is a sandy and gravelly deposit that forms in the middle of a stream channel. Most streams flow in a single channel.

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

o Begin

o Appear

o Build up

o Spread

5. According to paragraph2, which of the following is true about bars in streams?

o They start forming in the stream channel and then expand over the banks.

o They seldom form in rivers that are used for commercial navigation.

o They tend to grow longer each year.

o They often last no more than a year.

6. Why does the author ask the reader to imagine a winding stream?

o To explain how the presence of bars changes the speed and direction of water flow in a stream

o To explain why bars are more common than alluvial fans or other types of sediment deposits

o To illustrate the particular difficulties that commercial navigation faces on many rivers

o To help explain how point bars are formed

Paragraph 3: In contrast, a braided stream flows in many shallow, interconnecting channels. A braided stream forms where more sediment is supplied to a stream than it can carry. The stream dumps the excess sediment, forming mid-channel bars. The bars gradually fill a channel, forcing the stream to overflow its banks and erode new channels. As a result, a braided stream flows simultaneously in several channels and shifts back and forth across its floodplain. Braided streams are common in both deserts and glacial environments because both produce abundant sediment. A desert yields large amounts of sediment because it has little or no vegetation to prevent erosion. Glaciers grind bedrock into fine sediment, which is carried by streams flowing from the melting ice. If a steep mountain stream flows onto a flat plain, its gradient and velocity decrease sharply. As a result, it deposits most of its sediment in a fan-shaped mound called an alluvial fan. Alluvial fans are common in many arid and semiarid mountainous regions.

7. According to paragraph 3, all of the following are true of braided streams EXCEPT:

o They shift back and forth on the floodplain as some of their channels fill with sediment and new ones are formed.

o They carry sediments that tend to be very similar in size.

o They sometimes have mid-channel bars.

o Some of their channels are created as a result of the overflow of other channels.

8. Why does the author include the information that Glaciers grind bedrock into fine sediment, which is carried by streams flowing from the melting ice?

o To give a reason why heavily sedimented braided streams are common in glacial environments

o To explain why some mountain streams deposit most of their sediment in a fan-shaped mound

o To identify the most common source of sediment in arid and semiarid mountainous regions

o To help explain why glacial sediment decreases the gradient and velocity of steep mountain streams

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

o In many directions

o On the surface

o At the same time

o In a straight line

Paragraph 4: A stream also slows abruptly where it enters the still water of a lake or ocean. The sediment settles out to form a nearly flat landform called a delta. Part of the delta lies above water level, and the remainder lies slightly below water level. Deltas are commonly fan-shaped, resembling the Greek letter delta (!〇). Both deltas and alluvial fans change rapidly. Sediment fills channels (waterways), which are then abandoned while new channels develop as in a braided stream. As a result, a stream feeding a delta or fan splits into many channels called distributaries. A large delta may spread out in this manner until it covers thousands of square kilometers. ■Most fans, however, are much smaller, covering a fraction of a square kilometer to a few square kilometers. ■The Mississippi River has flowed through different delta channels during the past 5,000 to 6,000 years. ■But in recent years, engineers have built great systems of levees (retaining walls) in attempts to stabilize the channels. ■

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

o Noticeably

o Gradually

o Suddenly

o Slightly

11. According to paragraph 4, what is true about river deltas?

o They alternate between periods of spreading out and periods of getting smaller.

o They have both active channels and channels that have been blocked by sediment.

o They are typically formed by rivers that are braided before they reach the delta area.

o They are much larger when formed in a still lake than when formed in the ocean.

12. According to paragraph 4, what are engineers trying to accomplish in the Mississippi delta

o To expand the channels into which the river flows

o To keep the river flowing in the existing channels

o To control the amount of sediment the river brings to the delta

o To increase the part of the delta that lies above water level

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

If the Mississippi River were not contained by such systems, it would probably abandon its present path and cut into the channel of a nearby river to the west.

14. Directions: An introductory sentence for a brief summary of the passage 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 answer choices 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.

Drag your choices to the spaces where they belong.

Answer Choices

o Particles tend to be largest upstream and smallest downstream, probably because water flowing downstream erodes fine sediment from the larger particles.

o A wide variety of deposits, including bars, alluvial fan s, and deltas, are formed as a result of an increase in the speed of the downstream current.

o Bars commonly shift from being point bars on a river bank to being mid-channel bars.

o Deposits of sediment are found where flow velocity decreases, and when there is excessive sediment a stream may become braided, dividing into several channels.

o Rivers that flow through arid and semiarid mountainous regions tend to form alluvial fans at bends in the river.

o Deltas, which are formed where streams enter lakes or the ocean, are naturally unstable landforms that can extend over a large area

TPO37-3

**Characteristic of roman pottery**

The pottery of ancient Romans is remarkable in several ways. The high quality of Roman pottery is very easy to appreciate when handling actual pieces of tableware or indeed kitchenware and amphorae (the large jars used throughout the Mediterranean for the transport and storage of liquids, such as wine and oil). However, it is impossible to do justice to Roman wares on the page, even when words can be backed up by photographs and drawing. Most Roman pottery is light and smooth to touch and very tough, although, like all pottery, it shatters if dropped on a hard surface, it is generally made with carefully selected and purified clay, worked to thin-walled and standardized shapes on a fast wheel and fired in a kiln (pottery oven) capable of ensuring a consistent finish. With handmade pottery, inevitably there are slight differences between individual vessels of the same design and occasional minor blemishes (flaws). But what strikes the eye and the touch most immediately and most powerfully with Roman pottery is its consistent high quality.

This is not just an aesthetic consideration but also a practical one. These vessels are solid (brittle, but not fragile), they are pleasant and easy to handle (being light and smooth), and, with their hard and sometimes glossy (smooth and shiny) surfaces, they hold liquids well and are easy to wash. Furthermore, their regular and standardized shapes would have made them simple to stack and store. When people today are shown a very ordinary Roman pot and, in particular, are allowed to handle it, they often comment on how modern it looks and feels, and they need to be convinced of its true age.

As impressive as the quality of Roman pottery is its sheer massive quantity. When considering quantities, we would ideally like to have some estimates for overall production from particular sites of pottery manufacture and for overall consumption at specific settlements. Unfortunately, it is in the nature of the archaeological evidence, which is almost invariable only a sample of what once existed, that such figures will always be elusive. However, no one who has ever worked in the field would question the abundance of Roman pottery, particularly in the Mediterranean region. This abundance is notable in Roman settlements (especially urban sites) where the labor that archaeologists have to put into the washing and sorting of potsherds (fragments of pottery) constitutes a high proportion of the total work during the initial phases of excavation.

Only rarely can we derive any “real” quantities from deposits of broken pots. However, there is one exceptional dump, which does represent a very large part of the site's total history of consumption and for which an estimate of quantity has been produced. On the left bank of the Tiber River in Rome, by one of the river ports of the ancient city, is a substantial hill some 50 meters high called Monte Testaccio. It is made up entirely of broken oil amphorae, mainly of the second and third centuries A.D. it has been estimated that Monte Testaccio contains the remains of some 53 million amphorae, in which around 6,000million liters of oil were imported into the city from overseas, imports into imperial Rome were supported by the full might of the state and were therefore quite exceptional••••but the size of the operations at Monte Testaccio, and the productivity and complexity that lay behind them, nonetheless cannot fail to impress. This was a society with similarities to modern one----moving goods on a gigantic scale, manufacturing high-quality containers to do so, and occasionally, as here, even discarding them on delivery.

Roman pottery was transported not only in large quantities but also over substantial distances. Many Roman pots, in particular amphorae and the fine wares designed for use at tables, could travel hundreds of miles----all over the Mediterranean and also further afield. But maps that show the various spots where Roman pottery of a particular type has been found tell only part of the story. What is more significant than any geographical spread is the access that different levels of society had to good- quality products. In all but the remotest regions of the empire, Roman pottery of a high standard is common at the sites of humble villages and isolated farmsteads.

Paragraph 1: The pottery of ancient Romans is remarkable in several ways. The high quality of Roman pottery is very easy to appreciate when handling actual pieces of tableware or indeed kitchenware and amphorae (the large jars used throughout the Mediterranean for the transport and storage of liquids, such as wine and oil). However, it is impossible to do justice to Roman wares on the page, even when words can be backed up by photographs and drawing. Most Roman pottery is light and smooth to touch and very tough, although, like all pottery, it shatters if dropped on a hard surface, it is generally made with carefully selected and purified clay, worked to thin-walled and standardized shapes on a fast wheel and fired in a kiln (pottery oven) capable of ensuring a consistent finish. With handmade pottery, inevitably there are slight differences between individual vessels of the same design and occasional minor blemishes (flaws). But what strikes the eye and the touch most immediately and most powerfully with Roman pottery is its consistent high quality.

1. Paragraph 1 indicates which of the following about Roman pottery?

o Roman amphorae were of much higher quality overall than other Roman pottery.

o Roman pottery can best be appreciated when actual pieces are handled.

o Roman pottery declined slightly in quality when the use of fast wheels and kilns was introduced.

o Roman practical tableware spread more rapidly across the Mediterranean than amphorae did.

2. All of the following are mentioned in paragraph 1 as characteristics of Roman pottery EXCEPT:

o It was usually made with high-quality clay.

o It generally did not weigh much.

o It did not break as easily as other ancient pottery.

o It sometimes had imperfections.

Paragraph 2: This is not just an aesthetic consideration but also a practical one. These vessels are solid (brittle, but not fragile), they are pleasant and easy to handle (being light and smooth), and, with their hard and sometimes glossy (smooth and shiny) surfaces, they hold liquids well and are easy to wash. Furthermore, their regular and standardized shapes would have made them simple to stack and store. When people today are shown a very ordinary Roman pot and, in particular, are allowed to handle it, they often comment on how modern it looks and feels, and they need to be convinced of its true age. 3. According to paragraph 2, which of the following is NOT true of Roman vessels?

o They were good containers for liquids.

o Their shapes allowed for easy stacking and storing.

o They sometimes had shiny surfaces.

o Their true age is immediately apparent.

Paragraph 3: As impressive as the quality of Roman pottery is its sheer massive quantity. When considering quantities, we would ideally like to have some estimates for overall production from particular sites of pottery manufacture and for overall consumption at specific settlements. Unfortunately, it is in the nature of the archaeological evidence, which is almost invariable only a sample of what once existed, that such figures will always be elusive. However, no one who has ever worked in the field would question the abundance of Roman pottery, particularly in the Mediterranean region. This abundance is notable in Roman settlements (especially urban sites) where the labor that archaeologists have to put into the washing and sorting of potsherds (fragments of pottery) constitutes a high proportion of the total work during the initial phases of excavation.

4. The author mentions the work of archaeologists in paragraph 3 in order to

o support the idea that pottery was produced in large quantities by the Romans

o illustrate how hard it is for archaeologists to find complete pieces of Roman pottery

o contrast archaeological sites in Roman urban areas with other sites in the Mediterranean

o explain why the quantities of pottery found vary significantly from one site to another

Paragraph 4: Only rarely can we derive any “real” quantities from deposits of broken pots. However, there is one exceptional dump, which does represent a very large part of the site's total history of consumption and for which an estimate of quantity has been produced. On the left bank of the Tiber River in Rome, by one of the river ports of the ancient city, is a substantial hill some 50 meters high called Monte Testaccio. It is made up entirely of broken oil amphorae, mainly of the second and third centuries A.D. it has been estimated that Monte Testaccio contains the remains of some 53 million amphorae, in which around 6,000million liters of oil were imported into the city from overseas, imports into imperial Rome were supported by the full might of the state and were therefore quite exceptional••••but the size of the operations at Monte Testaccio, and the productivity and complexity that lay behind them, nonetheless cannot fail to impress. This was a society with similarities to modern one----moving goods on a gigantic scale, manufacturing high-quality containers to do so, and occasionally, as here, even discarding them on delivery.

5. The word “substantial” in the passage is closet in meaning to

o protected

o man-made

o large

o famous

6. According to paragraph 4, Monte Testaccio is particularly important for archaeologists because archaeologists were able to

o Conclude how amphorae manufacturing increased rapidly after the second century A.D.

o Find the locations where most of the amphorae in the Roman Empire were produced.

o Obtain relatively accurate calculations of the quantities of amphorae used over time in that place.

o Discover that the Roman state had supported amphorae production.

7. The word “entirely” in the passage is closet in meaning to

o apparently

o completely

o basically

o mostly

8. Paragraph 4 indicates which of the following about the port on the Tiber River near Monte Testaccio?

o It was built around the third century A.D.

o It was close to areas where large quantities of oil were produced.

o It was in use only for a very short period of time.

o It had impressive level of commercial activity.

9. The statement in paragraph 4 that amphorae delivered to the port near Monte Testaccio were occasionally discarded support which of the following?

o Traders at the port were often careless.

o The quality of the amphorae used at the port was not very good.

o The scale of the trade made it possible to waste quality amphorae sometimes.

o The importing of oil from overseas gradually declined, reducing the need for pottery containers.

Paragraph 5: Roman pottery was transported not only in large quantities but also over substantial distances. Many Roman pots, in particular amphorae and the fine wares designed for use at tables, could travel hundreds of miles----all over the Mediterranean and also further afield. But maps that show the various spots where Roman pottery of a particular type has been found tell only part of the story. What is more significant than any geographical spread is the access that different levels of society had to good- quality products. In all but the remotest regions of the empire, Roman pottery of a high standard is common at the sites of humble villages and isolated farmsteads.

10. The statement that “maps show the various spots where Roman pottery of a particular type has been found tell only part of the story” makes the point that

o Maps indicate where specific pottery styles have been found, but they do not indicate where these styles originated.

o Maps show the geographical spread of Roman pottery but not the people who had access to it.

o Maps do not usually include pottery styles found in the remotest regions the Roman Empire.

o Archaeologist studying Roman pottery need to use a range of techniques in their investigations.

11. The word “humble” in the passage is closet in meaning to

o rural

o distant

o ancient

o modest

12. The word “particular” in the passage is closet in meaning to

o specific

o common

o ancient

o superior

Paragraph 4: ■Only rarely can we derive any “real” quantities from deposits of broken pots. ■However, there is one exceptional dump, which does represent a very large part of the site's total history of consumption and for which an estimate of quantity has been produced. ■On the left bank of the Tiber River in Rome, by one of the river ports of the ancient city, is a substantial hill some 50 meters high called Monte Testaccio. ■It is made up entirely of broken oil amphorae, mainly of the second and third centuries A.D. it has been estimated that Monte Testaccio contains the remains of some 53 million amphorae, in which around 6,000million liters of oil were imported into the city from overseas, imports into imperial Rome were supported by the full might of the state and were therefore quite exceptional----but the size of the operations at Monte Testaccio, and the productivity and complexity that lay behind them, nonetheless cannot fail to impress. This was a society with similarities to modern one----moving goods on a gigantic scale, manufacturing high-quality containers to do so, and occasionally, as here, even discarding them on delivery.

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

That is because residents of a city did not usually discard used pottery at the same site over a long period of time.

14. Directions: An introductory sentence for a brief summary of the passage 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 answer choices 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.

Drag your choices to the spaces where they belong.

Answer Choices

o Roman pottery is considered to be practical and of consistently high quality.

o Roman pottery was transported over long distances, and different levels of society had access to quality pottery.

o Archaeologists looking for the remains of Roman pottery concentrate on urban sites because that is where the oldest pieces of kitchenware and amphorae have been found.

o Even though the exact quantity of pottery produced by the Romans is almost impossible to calculate. It is certain that it was produced in large quantities.

o People are not familiar with the whole range of pottery of Romans created because most of the avaiteWe pieces represent only a limited number of styles and shapes.

o It is still unclear to archaeologists what the role of the Roman state in the commercial success of Roman pottery was.