

TPO 31

READING

Speciation in Geographically Isolated Populations

Paragraph 1

1. The word "promotes" in the passage is closest in meaning to

- A. Describes
- B. Encourages
- C. delays
- D. requires

2. According to paragraph 1, allopatric speciation involves which of the following?

- A. The division of a population into subspecies
- B. The reuniting of separated populations after they have become distinct species
- C. The movement of a population to a new homeland
- D. The absence of gene flow between subpopulations

Paragraph 2

3. Why does the author provide the information that "the subpopulations of most species are separated from each other by some measurable distance"?

Evolutionary biologists believe that speciation, the formation of a new species, often begins when some kind of physical barrier arises and divides a population of a single species into separate subpopulations. Physical separation between subpopulations promotes the formation of new species because once the members of one subpopulation can no longer mate with members of another subpopulation, they cannot exchange variant genes that arise in one of the subpopulations. In the absence of gene flow between the subpopulations, genetic differences between the groups begin to accumulate. Eventually the subpopulations become so genetically distinct that they cannot interbreed even if the physical barriers between them were removed. At this point the subpopulations have evolved into distinct species. This route to speciation is known as allopatry ("allo - " means "different" , and "patria " means "homeland").

Allopatric speciation may be the main speciation route. This should not be surprising, since allopatry is pretty common. In general, the

- A. To indicate how scientists are able to determine whether subpopulations of a species are allopatric
- B. To define what it means for a group of animals or plants to be a subpopulation
- C. To suggest that allopatric speciation is not the only route to speciation
- D. To help explain why allopatric speciation is a common way for new species to come about

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

- A. Become more significant
- B. Occur randomly
- C. Gradually increase in number
- D. Cause changes

5. In paragraph 2, why does the author mention that some insect populations were separated from each other by a change in the course of Mississippi River caused by an earthquake?

- A. To make the point that some kind of physical barrier separates the subpopulations of most species
- B. To support the claim that the condition of allopatry can sometimes arise in a short time
- C. To provide an example of a situation in which gene flow among the subpopulations of a species happens at a slow rate
- D. To explain why insects living along opposite shores of the Mississippi River are very different from each other

Paragraph 3

subpopulations of most species are separated from each other by some measurable distance. So even under normal situations the gene flow among the subpopulations is more of an intermittent trickle than a steady stream. In addition, barriers can rapidly arise and shut off the trickle. For example, in the 1800s a monstrous earthquake changed the course of the America. The change separated populations of insects now living along opposite shore, completely cutting off gene flow between them.

Geographic isolation also can proceed slowly, over great spans of time. We find evidence of such

extended events in the fossil record, which affords glimpses into the breakup of formerly continuous environments. For example, during past ice ages, glaciers advanced down through North America and Europe and gradually cut off parts of populations from one another. When the glaciers retreated, the separated populations of plants and animals came into contact again. Some groups that had descended from the same parent population were no longer reproductively compatible—they had evolved into separate species. In other groups, however, genetic divergences had not proceeded so far, and the descendants could still interbreed—for them, reproductive isolation was not completed, and so speciation had not.

Paragraph 4

6. The word "colossal" in the passage is closest in meaning to

- A. consistent
- B. gradual
- C. enormous
- D. effective

7. According to paragraph 4, which of the following is true of the geologic movements that brought about the Isthmus of Panama?

- A. The movements brought populations of certain fishes and marine organisms into contact with one another for the first time.
- B. The movements transferred populations of fishes and other marine animals between the Pacific and Atlantic Oceans.

Allopatric speciation can also be brought by the imperceptibly slow but colossal movements of the tectonic plates that make up Earth's surface.

■ About 5 million years ago such geologic movements created the land bridge between North America and South America that we call the Isthmus of Panama. ■ While previously the gap between the continents had allowed a free flow of water, now the isthmus presented a barrier that divided the Atlantic Ocean from the Pacific Ocean. ■ This division set the stage for allopatric speciation among populations of fishes and other marine species. ■

- C. The movement created conditions that allowed water to flow more freely between the Pacific and Atlantic Oceans.
- D. The movement created conditions for the formation of new species of fishes and other marine animals.

Paragraph 5

8. The word "sequence" in the passage is closest in meaning to

- A. quality
- B. order
- C. function
- D. number

9. According to paragraph 5, by comparing the enzymes from two related groups of fishes on opposite sides of the isthmus, Graves found evidence that

- A. there were slight genetic divergences between the two groups
- B. the Atlantic group of fishes were descended from the Pacific group of fishes
- C. the temperature of water on either side of the isthmus had changed
- D. genetic changes in the Atlantic group of fishes were more rapid and frequent than

Paragraph 6

10. It can be inferred from paragraph 5 and 6 that the reason Graves concluded that some of the differences between the Pacific and Atlantic enzymes were not random was that

- A. each of the Pacific enzymes works better in cooler waters
- B. the Enzymes of the Atlantic fish populations had not changed since the

In the 1980s, John Graves studied two populations of closely related fishes, one population from the Atlantic side of isthmus, the other from the Pacific side. He compared four enzymes found in the muscles of each population. Graves found that all four Pacific enzymes function better at lower temperatures than the four Atlantic versions of the same enzymes. This is significant because Pacific seawater is typically 2 to 3 degrees cooler than seawater on the Atlantic side of isthmus. Analysis by gel electrophoresis revealed slight differences in amino acid sequence of the enzymes of two of the four pairs. This is significant because the amino acid sequence of an enzyme is determined by genes.

First, at least some of the observed differences between the enzymes of the Atlantic and Pacific fish populations were not random but were the result of evolutionary adaptation. Second, it appears that closely related populations of fishes on both sides of the A isthmus are starting

formation of the Isthmus of Panama
C. gel electrophoresis showed that the changes benefited both the Atlantic and the Pacific fish populations
D. the differences between the enzymes disappeared when the two fish populations were experimentally switched to other side of the isthmus

to genetically diverge from each other. Because Graves's study of geographically isolated populations of isthmus fishes offers a glimpse of the beginning of a process of are neutral or adaptive, divergences here might be evidence of allopatric speciation in process.

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

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

- A. Graves's study provides evidence that isthmus fishes are in the process of becoming geographically isolated.
- B. Graves's study of mutating isthmus fishes yields results that differ from results of other studies involving allopatric speciation.
- C. Graves's study of isolated populations of isthmus fishes provides some evidence that allopatric speciation might be beginning.
- D. Graves's study indicates that when isolated, populations of isthmus fishes register neutral or adaptive mutations.

Paragraph 4

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

The formation of the isthmus had important consequences for global patterns of ocean water flow.

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

Allopatric speciation can also be brought by the imperceptibly slow but colossal movements of the tectonic plates that make up Earth's surface.

■ About 5 million years ago such geologic movements created the land bridge between North America and South America that we call the

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

Allopatric speciation takes place when physically separated populations of a single species gradually diverge genetically to the point of becoming unable to interbreed.

Answer choices

- A. Allopatric speciation is common because the gene flow between subpopulations is generally limited and the barriers that completely separate subpopulations can arise in a variety of ways.
- B. During past ice ages, some, but not all, subpopulations separated by glaciers evolved into distinct species.
- C. Speciation does not need to take place through allopatry because subpopulations will form distinct species whenever there are adaptive advantages to not interbreeding with other subpopulations.
- D. Physical barriers from glaciers and the movement of tectonic plates form so slowly that the subpopulations on either side of the barriers usually do not form distinct species.
- E. Graves's study of fish populations separated by the Isthmus of Panama may

Isthmus of Panama. ■ While previously the gap between the continents had allowed a free flow of water, now the isthmus presented a barrier that divided the Atlantic Ocean from the Pacific Ocean. ■ This division set the stage for allopatric speciation among populations of fishes and other marine species. ■

well provide a picture of the beginning stages of speciation.

F. Graves's study of physically separated fish populations show that there must be large differences between the environments of the isolated populations if allopatric speciation is to take place.

Paragraph 1

1. According to paragraph 1, parents in Japan tend to think of preschool primarily as a place where children can
 - A. get a good academic start
 - B. expand their emotional development
 - C. become more independent
 - D. experience being part of a group
2. The word "Whereas" in the passage is closest in meaning to
 - A. Although
 - B. Because
 - C. Moreover
 - D. Already

Paragraph 2

Early Childhood Education

Preschools - - educational programs for children under the age of five - - differ significantly from one country to another according to the views that different societies hold regarding the purpose of early childhood education. For instance, in a cross - country comparison of preschools in China, Japan, and the United States, researchers found that parents in the three countries view the purpose of preschools very differently. Whereas parents in China tend to see preschools primarily as a way of giving children a good start academically, Japanese parents view them primarily as a way of giving children the opportunity to be members of a group. In the United States, in comparison, parents regard the primary purpose of preschools as making children more independent and self - reliant, although obtaining a good academic start and having group experience are also important.

3. The word "focus" in the passage is closest
- A. consider
 - B. respect
 - C. concentrate
 - D. advise
4. It can be inferred from paragraph 2 that the Head Start program was designed to serve children who
- A. come from families that do not have a lot of money
 - B. are not doing very well in kindergarten
 - C. were born in the 1950s
 - D. need programs that focus primarily on social and emotional factors

Paragraph 3

5. According to paragraph 3, the Head Start program had the following?
- A. Helping children adjust to school
 - B. Providing long - term increase in IQ scores
 - C. Improving school performance throughout high school
 - D. Preventing children from being placed in special - education classes

While many programs designed for preschoolers focus primarily on social and emotional factors, some are geared mainly toward promoting cognitive gains and preparing preschoolers for the formal instruction they will experience when they start kindergarten. In the United States, the best - known program designed to promote future academic success is Head Start. Established in the 1960s when the United States declared the War on Poverty, the program has served over 13 million children and their families. The program, which stresses parental involvement, was designed to serve the "whole child", including children's physical health, self - confidence, social responsibility, and social and emotional development.

Whether Head Start is seen as successful or not depends on the lens through which one is looking. If, for instance, the program is expected to provide long - term increases in IQ (intelligence quotient) scores, it is a disappointment. Although graduates of Head Start programs tend to show immediate IQ gains, these increases do not last. On the other hand, it is clear that Head Start is meeting its goal of getting preschoolers ready for school. Preschoolers who participate in Head Start are better prepared for future schooling than those who do not. Furthermore, graduates of Head Start programs have better future school grade. Finally, some research suggests that ultimately Head Start graduates show higher academic performance at the end

of high school, although the gains are modest.

Paragraph 4

6. In paragraph 4, the author mentions the "results from other types of readiness programs" to

- A. provide support for the idea that preschool readiness programs have been somewhat successful
- B. question the idea that Head Start is more effective than other preschool readiness programs
- C. indicate school completion is usually the most reliable indicator of success in most readiness programs
- D. emphasize that participation in readiness programs can be increased if costs are reduced

7. According to paragraph 4, a cost - benefit analysis of one preschool readiness program revealed that

- A. only one dollar's worth of benefit was gained for every seven dollars spent on the program
- B. the benefits of the program lasted only until the participants reached age 27
- C. taxpayers saved seven dollars for every dollar spent on the program
- D. to be successful, the program would need to receive about seven times as much money as it currently receives

Paragraph 5

8. The word "comprehensive" in the passage is closest in meaning to

- A. easily understood
- B. thorough
- C. respectable
- D. objective

9. Paragraph 5 mentions that participants in

In addition, results from other types of preschool readiness programs indicate that those who participate and graduate are less like to repeat grades, and they are more like to complete school than readiness program, for every dollar spent on the program, taxpayers saved seven dollars by the time the graduates reached the age of 27.

The most recent comprehensive evaluation of early intervention programs suggests that, taken as a group, preschool programs can provide significant benefits, and that government funds invested early in life may ultimately lead to a reduction in future costs. For instance, compared with children who

early intervention programs have been shown to do all of the following better than

- A. Take care of their health
- B. Support themselves financially
- C. Take care of their own children
- D. Have increased emotional development

10. According to paragraph 5, which of the following is true about the benefits of early intervention programs?

- A. These programs produce good short - term benefits but few long - term benefits.
- B. Only the most expensive programs provide substantial benefits.
- C. The Head Start program provides a range of benefits that no other program can provide.
- D. Some children benefit more than others do from these programs.

Paragraph 6

11. The word "seek" in the passage is closest in meaning to

- A. claim
- B. manage
- C. fail
- D. attempt

12. The passage mentions "developmental psychologist David Elkind" in order to

- A. give an example of an expert who has designed an effective early childhood education program
- B. introduce an alternative view about the value of early childhood education
- C. explain why early childhood education programs are less effective in the United States than in other countries
- D. refute the claim that academic success is dependent on factors outside parents' control

did not participate in early intervention programs, participants in various programs showed gains in emotional or cognitive development, better educational outcomes, increased economic self - sufficiency, reduced levels of criminal activity, and improved health - related behaviors. Of course, not every program produced all these benefits, and not every child benefited to the same extent. Furthermore, some researchers argue that less - expensive programs are just as good as relatively expensive ones, such as Head Start. Still, the results of the evaluation were promising, suggesting that the potential benefits of early intervention can be substantial.

Not everyone agrees that programs that **seek** to enhance academic skills during the preschool years are a good thing. In fact, according to **developmental psychologist David Elkind**, United States society tends to push children so rapidly that they begin to feel stress and pressure at a young age. Elkind argues that academic success is largely dependent upon factors out of parents' control, such as inherited abilities and a child's rate of maturation. Consequently, children of a particular age cannot be expected to master educational material without taking into account their current level of cognitive development. In short, children require development appropriate educational practice, which is education that is based

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

According to Elkind, not only does this cause the child emotional distress, it also fails to bring the intended cognitive gains.

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

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.

Preschool programs provide opportunities for young children to develop emotionally, and cognitively.

- A In addition to stressing academic development, preschools should be enjoyable, since studies show that children benefit from programs they find fun.
- B Preschool programs such as Head Start have been shown to help prepare children for school and may also have long - term benefits in helping children become effective adults
- C Studies have shown that preschool programs are most effective when they focus on only one area of development rather than trying to serve the “whole child”.
- D The primary purpose of preschool programs varies by country, with some stressing the importance of group experience, and others self - reliance or getting a good academic start.

on both typical development and the unique characteristics of a given child.

Not everyone agrees that programs that seek to enhance academic skills during the preschool years are a good thing. ■ In fact, according to developmental psychologist David Elkind, United States society tends to push children so rapidly that they begin to feel stress and pressure at a young age.

■ Elkind argues that academic success is largely dependent upon factors out of parents' control, such as inherited abilities and a child's rate of maturation.

■ Consequently, children of a particular age cannot be expected to master educational material without taking into account their current level of cognitive development. ■ In short, children require development appropriate educational practice, which is education that is based on both typical development and the unique characteristics of a given child.

E Critics of preschool programs argue that these programs put undue pressure on children and may not be effective if children are not developmentally ready for academic work.

F David Elkind is a critic of publicly funded preschool programs, arguing that the children's emotional development.

Paragraph 1

Paragraph 2

1. The word "prolonged" in the passage is closest in meaning to

- A. predictable
- B. destructive
- C. lengthy
- D. unproductive

2. In paragraph 2, the author mentions savannas in Central America island of Trinidad in order to:

- A. argue that these savannas are similar to those in South America and Cuba
- B. point out exceptions to the pattern of savanna formation in areas with drought

Savanna Formation

Located in tropical areas at low altitudes, savannas are stable ecosystems, some wet and some dry consisting of vast grasslands with scattered trees or shrubs. They occur on a wide range of soil types and in extremes of climate. There is no simple or single factor that determines if a given site will be a savanna, but some factors seem to play important roles in their formation.

Savannas typically experience a rather prolonged dry season. One theory behind savanna formation is that wet forest species are unable to withstand the dry season, and thus savanna, rather than rain forest, is favored on the site. Savannas experience an annual rainfall of between 1,000 and 2,000 millimeters, most of it falling in a five - to eight - month wet season. Though plenty of rain may fall on a savanna during the year, for at least part of the

stress

- C. provide additional examples of savannas in areas with five - to eight - month wet seasons
- D. indicate areas where savannas are being gradually replaced by rain forests

Paragraph 3

3. According to paragraph 3, rain forests and savannas differ in that
- A. the soils in rain forests contain fewer minerals than savanna soils do
 - B. savannas affect soil conditions more than rain forests do
 - C. unlike rain forests, savannas prefer sandy, well - drained soils to soils that are very wet
 - D. unlike rain forests, savannas may develop under both very dry and very wet soil conditions
4. The word "notably" in the passage is closest in meaning to
- A. similarly
 - B. especially
 - C. usually
 - D. relatively
5. According to paragraph 3, all of the following are true of savanna soils EXCEPT:
- A. They have high concentrations of potassium.
 - B. They contain high levels of aluminum.
 - C. They are very acidic.
 - D. They contain large amounts of certain

year little does, creating the drought stress ultimately favoring grasses. Such conditions prevail throughout much of northern South America and Cuba, but many Central American savannas as well as coastal areas of Brazil and the island of Trinidad do not fit this pattern. In these areas, rainfall per month exceeds that in the above definition, so other factors must contribute to savanna formation.

In many characteristics, savanna soils are similar to those of some rain forests, though more extreme. For example, savanna soils, like many rain forest soils, are typically oxisols (dominated by certain oxide minerals) and ultisols (soils containing no calcium carbonate), with a high acidity and notably low concentrations of such minerals as phosphorus, calcium, magnesium, and potassium, while aluminum levels are high. Some savannas occur on wet, waterlogged soils; others on dry, sandy, well - drained soils. This may seem contradictory, but it only means that extreme soil conditions, either too wet or too dry for forests, are satisfactory for savannas. More moderate conditions support moist forests.

oxide minerals.

Paragraph 4

6. According to paragraph 4, which of the following is true of waterlogged soils?

- A. Their upper layers are usually sandy and porous.
- B. They cannot support savannas.
- C. They contain little oxygen.
- D. They are prone to the leaching of nutrients and minerals.

7. The fact that "poor soils can and do support lush rain forest" suggests that:

- A. poor soils alone may not be enough to explain why an area becomes a savanna
- B. rain forest vegetation can significantly lower the quality of soils
- C. drought stress is the single most important factor in savanna formation
- D. minerals are more important than moisture for the growth of trees

Paragraph 5

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

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

- A. Rain forest species seem unable to adapt to fires created by humans.
- B. Ancient charcoal remains suggest that, prior to the arrival of humans, fires occurred frequently in rain forests.
- C. Ancient charcoal remains in Amazon forests suggest that rain forest species adapted to the area long before the arrival of humans.
- D. Rain forest species appear unable to

Waterlogged soils occur in areas that are flat or have poor drainage. These soils usually contain large amounts of clay and easily become water - saturated. Air cannot penetrate between the soil particles, making the soil oxygen - poor. By contrast, dry soils are sandy and porous, their coarse textures permitting water to drain rapidly. Sandy soils are prone to the leaching of nutrients and minerals and so tend to be nutritionally poor. Though, most savannas are found on sites with poor soils (because of either moisture conditions or nutrient levels of both), poor soils can and do support lush rain forest.

Most savannas probably experience mild fires frequently and major burns every two years or so. Many savanna and dry - forest plant species are called pyrophytes, meaning they are adapted in various ways to withstand occasional burning. Frequent fire is a factor to which rain forest species seem unable to adapt, although ancient charcoal remains from Amazon forest soil dating prior to the arrival of humans suggests that moist forests also occasionally burn. Experiments suggest that if fire did not occur in

adapt to frequent fires, but evidence from the past suggests that rain forests sometimes do burn.

9. The word "markedly" in the passage is closest in meaning to:

- A. dangerously
- B. noticeably
- C. rapidly
- D. gradually

10. Paragraph 5 supports which of the following statements regarding the importance of fires in maintaining savannas?

- A. Fires prevent the growth of pyrophytes.
- B. Fires eliminate some species and thus reduce the overall diversity of the ecosystem.
- C. Fires that occur once every two years are unlikely to help maintain savannas.
- D. Fires prevent some species from eliminating other species with which they compete.

Paragraph 6

11. The word "subsequent" in the passage is closest in meaning to

- A. expanded in area
- B. harmful
- C. following in time
- D. repeated

12. According to paragraph 6, human activity affects soils in all of the following EXCEPT

- A. Decomposition of leaves occurs too fast for surface roots to obtain nutrients.
- B. Nutrients are not recycled.
- C. Humus is destroyed.

savannas in the Americas, species composition would change significantly. When burning occurs, it prevents competition among plant species from progressing to the point where some species exclude others, reducing the overall diversity of the ecosystem. But in experimental areas protected from fire, a few perennial grass species eventually come to dominate, outcompeting all others. Evidence from other studies suggests that exclusion of fire results in markedly decreased plant - species richness, often with an increase in tree density. There is generally little doubt that fire is a significant factor in maintaining savanna, certainly in most regions.

On certain sites, particularly in South America, savanna formation seems related to frequent cutting and burning of moist forests for pastureland. Increase in pastureland and subsequent overgrazing have resulted in an expansion of savanna. The thin upper layer of humus (decayed organic matter) is destroyed by cutting and burning. Humus is necessary for rapid decomposition of leaves by bacteria and fungi and for

D. Certain soils become unable to support vegetation other than savanna vegetation.

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

In addition, humans have contributed to the conditions favoring the formation of savannas.

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

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.

Several factors seem to play important roles in savanna formation.

A Savannas can form in areas with a five - to eight - month wet season, but they more commonly have a longer wet season.

B Soil stress caused by drought, extreme moisture, or low nutrient levels favors the formation of savannas.

C Studies conducted in various regions indicate that an upper layer of white, sandy, soil is present in most permanent

recycling by surface roots. Once the humus layer disappears, nutrients cannot be recycled and leach from the soil, converting soil from fertile to infertile and making it suitable only for savanna vegetation. Forests on white, sandy soil are most susceptible to permanent alteration.

■ Evidence from other studies suggests that exclusion of fire results in markedly decreased plant - species richness, often with an increase in tree density. ■ There is generally little doubt that fire is a significant factor in maintaining savanna, certainly in most regions. ■ On certain sites, particularly in South America, savanna formation seems related to frequent cutting and burning of moist forests for pastureland. ■ Increase in pastureland and subsequent overgrazing have resulted in an expansion of savanna.

savannas.

D Drought stress affects trees and shrubs in savannas far less than it affects savanna grasses.

E Frequent fire is a major factor contributing to the formation and maintenance of savannas.

F In some areas, human cutting and burning is associated with savanna formation, and increase in pastureland has led to savanna expansion.

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LISTENING

1 What are the speakers mainly discussing?

- A A point about southern settlements that the student did not understand.
- B A problem with an assignment on colonial shipping routes.
- C Reasons why the student prefers to write a paper relates to architecture.
- D An aspect of colonial settlements the students wants to research.

2 What is the professor's opinion about the student's interest in architecture?

- A He thinks the student's focus on architecture prevents her from broadening her perspective.
- B He thinks it may contribute to her producing an interesting research paper.
- C He hopes she will choose to major in both history and architecture.
- D He suspects that it may not provide her with the necessary background for the paper she is writing.

3 What does the professor want the student to do when they write their papers?

- A Show a connection between history and another field in which they are interested.
- B Develop a research topic that has not been investigated before.
- C Explain how an aspect of United States culture has changed over time.
- D Describe early difference between regions of the United States.

4 Why does the professor mention medieval Europe?

- A To point out an important difference Europe and the United States.
- B To introduce a reason that the first European settlers moved to North American.
- C To indicate the Style of community planning followed by in the northern colonies.
- D To point out that urban planning has changed considerably since the medieval period.

5 What does the professor imply about storage and port facilities?

- A They were one indicator of the emphasis put on trade in the southern colonies.
- B They were a sign of something the northern and southern colonies had in common.
- C They were multipurpose facilities also used for community meetings.
- D They were designed to be similar to those found in Europe.

6 What is the main topic of the lecture?

- A The history of Greek music from ancient times to the past.
- B The influence of ancient Greek music on the music of neighboring countries.

C The characteristics of ancient Greek songs.

D The attitude of the ancient Greek toward music.

7 What two reasons does the professor give for approaching the lecture material as he does? Click on 2 answers.

A We have a limited idea of what ancient Greek music sounded like.

B The Greek philosophy of music influenced Western thought.

C Greek music shared many characteristics with other types of ancient music.

D Greek melodies were admired by musicians from other futures.

8 According to the professor, what did the ancient Greeks believe about music?

A That music connected them to their ancestors.

B That music allowed people express their individuality.

C That the same laws ruled music and the universe.

D That music could not be explained by mathematics.

9 According to the professor, what was Plato's attitude toward music?

A Music had the power to help create the future leaders of a society.

B Music needed to be constantly evolving to keep up with social change.

C Music distracted attention from social problems.

D Music's primary purpose was entertainment.

10 Why does the professor mention rock-and-roll music?

A To make a connection between ancient and modern attitudes toward music.

B To contrast its characteristic with the characteristics of ancient Greek music.

C To introduce a topic he will discuss later in the lecture.

D To find out what kind of music students in the class like best.

11 Why does the professor say this?

A He does not think his opinions are relevant to class discussion.

B He believes his students can infer what he thinks.

C He wants the students to take Plato's ideas seriously.

D He does not want to influence his students' opinions.

12 What is the lecture mainly about?

- A How to predict the rate of tectonic plate movement.
- B A geologist's attempt to determine the position of continents in the past.
- C Some ideas about future movement of Earth's tectonic plates.
- D The history of a debate between two plate tectonic theories.

13 The professor states that some continents are currently moving northward and some are moving westward. Indicate the direction in which the continents are currently moving.

Click in the correct boxes.

	Northward	Westward
Africa		
Americas		
Australia		

14 What process is currently taking place in the Atlantic Ocean?

- A One half of the ocean plate is sinking beneath the other half.
- B New rock is forming between two sections of the ocean floor.
- C A subduction zone is forming at the eastern edge of the ocean floor.
- D The ocean plate is moving away from the continental plates that are under the Americas.

15 What long-term geoprediction do many geologists make?

- A Continents will become small than they are now.
- B Subduction will cause one continent to sink under an ocean.
- C North and South America will move away from each other.
- D The current continents will eventually join together.

16 Based on the discussion, what happens when a continental plate and an oceanic plate collide?

- A The edge of the oceanic plate moves down into the mantle.
- B Slab pull causes the ocean floor to expand.
- C New rock material rises to the surface at the subduction zone.
- D Parts of each plate break off into the ocean.

17 What is important difference between the two hypotheses discussed by the professor?

- A They make different predictions about the direction in which the American continents will move.
- B They make different predictions about how long it will take for Pangaea Ultima to form.

- C Only one predicts that Asia will eventually begin to move eastward.
- D Only one predicts that some tectonic plates will eventually stop moving.

18 What is the conversation mainly about?

- A Proposed change to an intern program.
- B A document that was not delivered on time.
- C A canceled course.
- D An error in a registration record.

19 According to the student, how is his internship different from the internships the other students have

- A He will be doing research in the open ocean.
- B He will be teaching visitors about the display at the aquarium.
- C He will be writing a report about the regional center for marine research.
- D He will be spending more time in the classroom.

20 What two requirements did the student have to meet in order to get the internship? Click on 2 answers.

- A He had to have volunteered previously at the aquarium.
- B He had to be certified in scuba diving.
- C He had to be a senior oceanography student.
- D He had to have experience collecting oceanographic data.

21 What does the student imply about professor Leonard?

- A She is not in charge of oceanography internships.
- B She works at the regional center for marine research.
- C She will be able to help correct the mistake today.
- D She recommended the student for the internship.

22 What can be inferred about the woman when she says this?

- A She feels her office has handled the situation correctly.
- B She is upset that she has to fix the problem herself.
- C She believes the student should have finalized his paperwork earlier.
- D She wants to reassure the students that the problem will be addressed promptly.

23 What is the lecture mainly about?

- A Reasons CoT starfish are attracted to coral reefs.
- B Possible causes of change in the CoT starfish population.
- C Evidence that coral decline may not be related to CoT starfish.
- D Proven ways to effectively control the CoT starfish population.

24 According to the professor, what is the role of the giant triton snail in the coral reef ecosystem?

- A It competes with CoT starfish for food.
- B Its shells provide habitat for CoT starfish.
- C It is a predator of CoT starfish.
- D It can repair coral that has been damaged by CoT starfish.

25 How might fertilizer runoff affect CoT starfish population?

- A It might increase the food supply for young CoT starfish.
- B It might wash away nutrients that are beneficial for CoT starfish.
- C It might destroy CoT starfish habitats.
- D It might make phytoplankton dangerous for CoT starfish to eat.

26 According to the professor, how might storms affect CoT starfish?

- A Storms might interfere with CoT starfish's spawning cycle.
- B Storms might reduce the amount of plankton eaten by CoT starfish.
- C Storms might carry starfish predators close to reef system.
- D Storms might reduce the number of feeding areas available to CoT starfish.

27 What does the professor say about controlling the CoT starfish population?

- A It will be possible only after the causes of starfish population changes are better understood.
- B Recent discoveries about CoT starfish have made controlling its population easier.
- C Enforcing measures to limit runoff should be sufficient to control the starfish population.
- D Monitoring populations of young starfish will probably not be useful.

28 Why does the professor mention that CoT starfish eat fast-growing coral?

- A To show the CoT starfish might benefit slow-growing coral.
- B To explain fluctuation in the CoT starfish population.
- C To indicate that the behavior of CoT starfish has changed over time.

D To emphasize the danger posed by CoT starfish to coral reefs.

29 What is the lecture mainly about?

A Reasons why an ancient archaeological site was well preserved.

B A controversy over where horses were first domesticated.

C Factors that led an ancient society to become nomadic.

D Evidence that an ancient civilization used domesticated animals.

30 Why does the professor mention milking a wild horse?

A To point that the Botai people sometimes did not have enough food.

B To compare the physical features of domesticated and wild horse.

C To prove that the horses of the Botai people were domesticated.

D To emphasize that horse milk was popular in some ancient societies.

31 What point does the professor make the horse bones found in the Botai settlements?

A They do not reveal information about horse domestication.

B They are very different from the bones of modern horses.

C They date to the period when the Botai people had become nomads.

D They suggested that horses were first domesticated by another ancient people.

32 According to the professor, what can a large concentration of phosphorus in the soil indicate?

Click on 2 answers.

A That a large number of horses were kept in the area.

B That the diet of people who lived in the area included horse milk.

C That there were well-used fireplaces in the area.

D That farming in that soil would have been extremely difficult.

33 What does the professor imply about the people in ancient Kazakhstan when they started raising sheep and cattle?

A They found a way to protect livestock from harsh weather without travelling to the southern region.

B They realized that a nomadic lifestyle offered benefits that outweighed the hard work.

C They had to learn the area due to a rapid increase in population.

D They learned that growing crops is possible in the southern regions.

34 Why does the student say this?

A To point a contradiction in the professor's remark.

B To propose a solution to the issue that the professor has just discussed.

C To find out if he understands correctly what the professor has just explained.

D To show that he disagrees with the professor.

SPEAKING

1. Parents need to make sure their children lead healthy lives. What can parents do to help their children to have lifestyles?
2. Some university students choose to take difficult classes even if they know they might not get a good grade in the class. Other students prefer to take easier classes in which they know they will get a good grade. Which do you prefer? Explain why.

3. Reading

Students Need Access to Movie Collection

The university library has a large collection of films on video and DVD that students can borrow. However, students aren't allowed to go into the area where these items are kept. Instead, students need to request a movie title, and then library staff get it for them. I think students should be allowed to go into the area where the videos and DVDs are kept. First, it will be easier for students to choose a good movie because then they can easily see what is available. Also, if students can get movies themselves, the university won't have to pay extra library staff to help students.

Sincerely,

Rebecca Smith

The man expresses his opinion about the proposal described in the letter. Briefly summarize the proposal. Then state his opinion about the proposal and explain the reasons he gives for holding that opinion.

4. Reading

Mental Accounting

Although they may not realize it, people do not always manage their money in responsible way. In their minds, people tend to divide their money into different categories as if they were putting it into separate mental bank accounts. This tendency is known as mental accounting. People mentally store some money in one account to be saved, while they imagine other money being stored in another account from which money can be taken and freely spent. Mental accounting can lead people to spend more money than they should, which can make it difficult for them to save enough money to achieve their long-term financial goals.

Using the examples from the professor's lecture, explain the concept of mental accounting.

5. Briefly summarize the problem the speakers are discussing. Then state which of the two solutions from the conversation you would recommend. Explain the reasons for your recommendation.
6. Use the example of the owl and the wolf, explain how two special body features have helped Arctic animals adapt to the cold.

WRITING

TASK 1

A fossil skeleton of a dinosaur called *Sinosauropteryx*, preserved in volcanic ash, was discovered in Liaoning, China, in 1996. Interestingly, the fossil included a pattern of fine lines surrounding the skeletal bones. Some paleontologists interpret the lines as evidence that *Sinosauropteryx* had feathers. However, critics have opposed the idea that *Sinosauropteryx* was a feathered dinosaur, citing several reasons.

First, the critics point out that the fine lines may not even represent functional structures of a living dinosaur, but rather structures that were formed after the animal's death. After the animal died and was buried in volcanic ash, its skin may have decomposed into fibers. The skin fibers then became preserved as lines in the fossil; the lines were misinterpreted as evidence of feathers.

Second, even if the fine lines are remains of real structures of a *Sinosauropteryx*, scientists cannot tell with certainty what part of the dinosaur's anatomy the structures were. Many dinosaurs had frills, ornamental fan-shaped structures growing out of some parts of their bodies. Some of the critics argue that the lines surrounding the skeleton are much more likely to be fossilized remains of frills than remains of feathers.

A third objection is based on the fact that the usual functions of feathers are to help animals fly or regulate their internal temperature. However, the structures represented by the lines in the *Sinosauropteryx* fossil were mostly located along the backbone and the tail of the animal. This would have made the structures quite useless for flight and of very limited use in thermoregulation. This suggests that the lines do not represent feathers.

Summarize the points made in the lecture, being sure to explain how they support/contradict specific points made in the reading passage.

TASK 2

Do you agree or disagree with the following statement?

Because the world is changing so quickly, people now are less happy or less satisfied with their lives than people were in the past.

Use specific reasons and examples to support your answer.