

TPO 15

READING

A Warm-Blooded Turtle

Paragraph 1:

1. The phrase unique among in the passage is closest in meaning to

- A. natural to
- B. different from all other
- C. quite common among
- D. familiar to

2. What can be inferred about whales from paragraph 1?

- A. They are considered by some to be reptiles.
- B. Their bodies are built in a way that helps them manage extremely cold temperatures
- C. They are distantly related to leatherback turtles.
- D. They can swim farther than leatherback turtles.

Paragraph 2:

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

- A. remarkable achievement
- B. common transformation
- C. daily activity
- D. complex solution

4. Paragraph 2 mentions all of the following as true about the body heat of adult leatherback turtles EXCEPT:

- A. Their muscles produce heat for

When it comes to physiology, the leatherback turtle is, in some ways, more like a reptilian whale than a turtle. It swims farther into the cold of the northern and southern oceans than any other sea turtle, and it deals with the chilly waters in a way unique among reptiles.

A warm-blooded turtle may seem to be a contradiction in terms. Nonetheless, an adult leatherback can maintain a body temperature of between 25 and 26 °C (77 - 79 °F) in sea water that is only 8 °C (46.4 °F). Accomplishing this feat requires adaptations both to generate heat in the turtle's body and to keep it from escaping into the surrounding waters. Leatherbacks apparently do not generate

maintaining body temperature.

B. Their dark bodies help trap solar radiation.

C. Their cellular metabolism produces heat as a by-product.

D. Basking at the water's surface helps them obtain heat.

Paragraph 3:

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

A. strength

B. effort

C. activity

D. mass

internal heat the way we do, or the way birds do, as a by-product of cellular metabolism. A leatherback may be able to pick up some body heat by basking at the surface; its dark, almost black body color may help it to absorb solar radiation. However, most of its internal heat comes from the action of its muscles.

Leatherbacks keep their body heat in three different ways. The first, and simplest, is size. The bigger the animal is, the lower its surface to-volume ratio; for every ounce of body mass, there is proportionately less surface through which heat can escape. An adult leatherback is twice the size of the biggest cheloniid sea turtles and will therefore take longer to cool off. Maintaining a high body temperature through sheer bulk is called gigantothermy. It works for elephants, for whales, and, perhaps, it worked for many of the larger dinosaurs. It apparently works, in a smaller way, for some other sea turtles. Large loggerhead and green turtles can maintain their body temperature at a degree or two above that of the surrounding water, and gigantothermy is probably the way they do it. Muscular activity helps, too, and an actively swimming green turtle may be 12.6°F warmer than the waters it swims through.

Paragraph 4:

Paragraph 5:

6. The word it in paragraph 4 refers to

- A. the problem
- B. blood
- C. the turtle
- D. body temperature

7. According to paragraph 4, which of the following features enables the leatherback turtle to stay warm?

- A. An insulating layer of blubber
- B. A thick, oily skin covering fatty tissue
- C. The aerodynamic shape of its flippers
- D. A well-insulated head

Paragraph 6:

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

Incorrect choices change the meaning in

Gigantothermy, though, would not be enough to keep a leatherback warm in cold northern waters. It is not enough for whales, which supplement it with a thick layer of insulating blubber (fat).

Leatherbacks do not have blubber, but they do have a reptilian equivalent: thick, oil-saturated skin, with a layer of fibrous, fatty tissue just beneath a. Insulation protects the leatherback everywhere but on its head and flippers. Because the flippers are comparatively thin and blade like, they are the one part of the leatherback that is likely to become chilled. There is not much that the turtle can do about this without compromising the aerodynamic shape of the flipper. The problem is that as blood flows through the turtle's flippers, it risks losing enough heat to lower the animal's central body temperature when it returns. The solution is to allow the flippers to cool down without drawing heat away from the rest of the turtle's body. The leatherback accomplishes this by arranging the blood vessels in the base of as flipper into a countercurrent exchange system ..

In a countercurrent exchange system, the blood vessels carrying cooled blood from the flippers run close enough to the

important ways or leave out essential information.

A. In a turtle's countercurrent exchange system, outgoing vessels lie near enough to ingoing ones that heat can be exchanged from the former to the latter before reaching the turtle's flippers.

B. Within the turtle's flippers, there is a countercurrent exchange system that allows colder blood vessels to absorb heat from nearby warmer blood vessels and then return warmed blood to the turtle's body.

C. In a countercurrent exchange system, a turtle can pick up body heat from being close enough to other turtles, thus raising its blood temperature as it passes them.

D. When a turtle places its flippers close to its body, it is able to use its countercurrent exchange system to transfer heat from the warmer blood vessels in its body to the cooler blood vessels in its flippers.

9. Why does the author mention old-fashioned steam radiator in the discussion of countercurrent exchange systems?

A. To argue that a turtle's central heating system is not as highly evolved as that of other warmblooded animals

B. To provide a useful comparison with which to illustrate how a countercurrent exchange system works

C. To suggest that steam radiators were modeled after the sophisticated heating system of turtles

D. To establish the importance of the movement of water in countercurrent exchange systems

10. The phrase courses through in the

blood vessels carrying warm blood from the body to pick up some heat from the warmer blood vessels; thus, the heat is transferred from the outgoing to the in going vessels before it reaches the flipper itself.

This is the same arrangement found in an old-fashioned steam radiator, in which the coiled pipes pass heat back and forth as water courses through them. The leatherback is certainly not the only animal with such an arrangement; gulls have a countercurrent exchange in their legs. That is why a gull can stand on an ice floe without freezing.

All this applies, of course, only to an adult leatherback. Hatchlings are simply too small to conserve body heat, even with insulation and countercurrent exchange systems. We do not know how old, or how large, a leatherback has to be before it can switch from a cold-blooded to a warm-blooded mode of life. Leatherbacks reach their immense size in a much shorter time than it takes other sea turtles to grow. Perhaps their rush to adulthood is driven by a simple need to keep warm.

passage is closest in meaning to

- A. rises through
- B. heats up in
- C. runs through
- D. collects in

11. According to paragraph 6, which of the following statements is most accurate about young leatherback turtles?

- A. They lack the countercurrent exchange systems that develop in adulthood.
- B. Their rate of growth is slower than that of other sea turtles.
- C. They lose heat easily even with
- D. insulation and countercurrent exchange systems.
- E. They switch between cold-blooded and warm-blooded modes throughout their hatchling stage.

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

However, these animals have additional means of staying warm.

Where would the sentence best fit?

13. Contrary to what we would expect of reptiles, the leatherback turtle is actually warm-blooded.

Answer Choices

- A. Even though they swim into cold ocean waters, leatherbacks maintain their body heat in much the same way as sea turtles in warm southern oceans do.
- B. The leatherback turtle uses a countercurrent exchange system in order to keep the flippers from drawing heat away from the rest of the body.

Leatherbacks keep their body heat in three different ways. The first, and simplest, is size. The bigger the animal is, the lower as surfaceto-volume ratio; for every ounce of body mass, there is proportionately less surface through which heat can escape. An adult leatherback is twice the size of the biggest cheloniid sea turtles and will therefore take longer to cool off. Maintaining a high body temperature through sheer **bulk** is called gigantothermy. ■ It works for elephants, for whales, and, perhaps, it worked for many of the larger dinosaurs. ■ It apparently works, in a smaller way, for some other sea turtles. ■ Large loggerhead and green

C. The shape of the leatherback turtle's flippers is especially important in maintaining heat in extremely cold northern waters.

D. The leatherback turtle is able to maintain body heat through sheer size.

E. Leatherbacks have an insulating layer that can be considered the reptilian version of blubber. Young leatherbacks often do not survive to adulthood because they are not able to switch from a cold-blooded way of life to a warm-blooded one quickly enough.

turtles can maintain their body temperature at a degree or two above that of the surrounding water, and gigantothermy is probably the way they do a. ■ Muscular activity helps, too, and an actively swimming green turtle may be TC (12.6° F) warmer than the waters it swims through.

Mass Extinctions

Paragraph 1:

1. Paragraph 1 supports which of the following statements about mass extinctions?
 - A. They take place over a period of 70 million years.
 - B. They began during the Cretaceous period.
 - C. They eliminate many animal species that exist at the time they occur.
 - D. They occur every 250 million years.

Cases in which many species become extinct within a geologically short interval of time are called mass extinctions. There was one such event at the end of the Cretaceous period (around 70 million years ago). There was another, even larger, mass extinction at the end of the Permian period (around 250 million years ago). The Permian event has attracted much less attention than other mass extinctions because mostly unfamiliar species perished at that time.

Paragraph 2:

2. According to paragraph 2, scientists base their belief that a mass extinction is going on at present on which of the following?
 - A. The speed with which mass extinctions are happening today is similar

The fossil record shows at least five mass extinctions in which many families of marine organisms died out. The rates of extinction happening today are as great as the rates during these mass extinctions. Many scientists have therefore concluded

to the speed of past extinctions.

B. The number of species that have died out since the last extinction event is extremely large.

C. Mass extinctions occur with regularity and it is time for another one.

D. Fossil records of many marine species have disappeared.

Paragraph 3:

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

A. specific

B. unlimited

C. reasonable

D. long

4. According to paragraph 3, each of the following has been proposed as a possible cause of mass extinctions EXCEPT

A. habitat destruction

B. continental movement

C. fierce interspecies competition

D. changes in Earth's temperature

5. Paragraph 3 supports which of the following ideas about mass extinctions?

A. Scientists know the exact causes of most mass extinctions.

B. Mass extinctions are unlikely to happen again in the future.

C. Insects, flowering plants, and bottom-feeding predators in the oceans tend to be the first organisms to disappear during episodes of mass extinctions.

D. Some mass extinctions occurred on land and in the seas at the same time.

Paragraph 4:

6. Which of the sentences below best

that a sixth great mass extinction is currently in progress.

What could cause such high rates of extinction? There are several hypotheses, including warming or cooling of Earth, changes in seasonal fluctuations or ocean currents, and changing positions of the continents. Biological hypotheses include ecological changes brought about by the evolution of cooperation between insects and flowering plants or of bottom-feeding predators in the oceans. Some of the proposed mechanisms required a very brief period during which all extinctions suddenly took place; other mechanisms would be more likely to have taken place more gradually, over an extended period, or at different times on different continents. Some hypotheses fail to account for simultaneous extinctions on land and in the seas. Each mass extinction may have had a different cause. Evidence points to hunting by humans and habitat destruction as the likely causes for the current mass extinction.

American paleontologists David

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. Based on their studies of extinction rates of numerous fossil groups, paleontologists David Raup and John Sepkoski have determined that mass extinctions occur about every 26 million years.

B. David Raup and John Sepkoski studied extinction rates of numerous fossil groups and suggest that mass extinctions during the Cretaceous period continued for 26 million years.

C. Studies that paleontologists David Raup and John Sepkoski conducted of various fossil groups have revealed that extinction rates have increased over the past 26 million years.

D. The studies conducted by paleontologists David Raup and John Sepkoski of the fossil remains of species suggest that the extinction rate of species started to increase by the middle of the Cretaceous period.

7. According to paragraph 4, what aspect of extinction episodes does the companion-star hypothesis supposedly clarify?

- A. Their location
- B. Their frequency
- C. Their duration
- D. Their severity

Paragraph 5:

8. The phrase account for in the passage is closest in meaning to

Raup and John Sepkoski, who have studied extinction rates in a number of fossil groups, suggest that episodes of increased extinction have recurred periodically, approximately every 26 million years since the mid-Cretaceous period.

The late Cretaceous extinction of the dinosaurs and ammonoids was just one of the more drastic in a whole series of such recurrent extinction episodes. The possibility that mass extinctions may recur periodically has given rise to such hypotheses as that of a companion star with a long-period orbit deflecting other bodies from their normal orbits, making some of them fall to Earth as meteors and causing widespread devastation upon impact.

Of the various hypotheses attempting to account for the late Cretaceous extinctions, the one that

- A. describe
- B. challenge
- C. explain
- D. test

has attracted the most attention in recent years is the asteroid-impact hypothesis first suggested by Luis and Walter Alvarez. According to this hypothesis, Earth collided with an asteroid with an estimated diameter of 10 kilometers, or with several asteroids, the combined mass of which was comparable. The force of collision spewed large amounts of debris into the atmosphere, darkening the skies for several years before the finer particles settled. The reduced level of photosynthesis led to a massive decline in plant life of all kinds, and this caused massive starvation first of herbivores and subsequently of carnivores. The mass extinction would have occurred very suddenly under this hypothesis.

Paragraph 6:

9. According to paragraph 6, what made iridium a useful test of the Alvarez hypothesis?

- A. Its occurrence in a few locations on Earth against several locations on other planets
- B. Its occurrence in limited quantities on Earth against its abundance in asteroids
- C. Its ability to remain solid at extremely high temperatures
- D. Its ease of detection even in very small amounts

10. In stating that no asteroid itself has ever been recovered the author emphasizes which of the following?

- A. The importance of the indirect evidence for a large asteroid

One interesting test of the Alvarez hypothesis is based on the presence of the rare-earth element iridium (Ir). Earth's crust contains very little of this element, but most asteroids contain a lot more. Debris thrown into the atmosphere by an asteroid collision would presumably contain large amounts of iridium, and atmospheric currents would carry this material all over the globe. A search of sedimentary deposits that span the boundary between the Cretaceous and Tertiary periods shows that there is a dramatic increase in the abundance of iridium briefly and precisely at this boundary. This iridium anomaly offers strong support for the Alvarez

- B. The fact that no evidence supports the asteroid impact hypothesis
- C. The reason many researchers reject the Alvarez hypothesis
- D. The responsibility of scientists for not making the effort to discover the asteroid itself

Paragraph 7:

11. The word intense in the passage is closest in meaning to
- A. sudden
 - B. unusual
 - C. immediate
 - D. extreme
12. What is the purpose of paragraph 7 in the passage?
- A. It proposes a decisive new test of the Alvarez hypothesis.
 - B. It presents additional supporting evidence for the Alvarez hypothesis.
 - C. It explains why evidence relating to the Alvarez hypothesis is hard to find.
 - D. It shows how recent evidence has raised doubts about the Alvarez hypothesis

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

In general, it is believed that these two extinctions resulted from drastic environmental changes that followed meteorite impacts or massive volcanic eruptions.

Where would the sentence best fit?

14. Directions:
- There have been many attempts to

hypothesis even though no asteroid itself has ever been recovered.

An asteroid of this size would be expected to leave an immense crater, even if the asteroid itself was disintegrated by the impact. The intense heat of the impact would produce heat-shocked quartz in many types of rock. Also, large blocks thrown aside by the impact would form secondary craters surrounding the main crater. To date, several such secondary craters have been found along Mexico's Yucatan Peninsula, and heat-shocked quartz has been found both in Mexico and in Haiti. A location called Chicxulub, along the Yucatan coast, has been suggested as the primary impact site.

■ Cases in which many species become extinct within a geologically short interval of time are called mass extinctions. ■ There was one such event at the end of the Cretaceous period (around 70 million years ago). ■ There was another, even larger, mass extinction at the end of the Permian period (around 250 million years ago). ■ The Permian event has attracted much less attention than

explain the causes of mass extinctions.

Answer Choices

- A. Asteroid impacts, evolutionary developments, and changes in Earth's climate and in the positions of the continents have all been proposed as possible causes of mass extinctions.
- B. Researchers have observed 26-million-year cycles in extinction rates of a number of fossil groups that could all be attributed to the same cause.
- C. According to the Alvarez hypothesis, much of the iridium originally present on Earth was thrown into the atmosphere as a result of an asteroid impact that also caused a mass extinction.
- D. The unusual distribution of iridium on Earth and the presence of craters and heat-shocked quartz are central to the theory that an asteroid impact caused the late Cretaceous event.
- E. The collision between Earth and a large asteroid resulted in massive damage and generated enough heat to cause irreversible changes in Earth's atmosphere.
- F. There was a particularly large mass extinction that occurred around 250 million years ago at the end of the Permian period, whose cause could not be determined.

other mass extinctions because mostly unfamiliar species perished at that time.

Glacier Formation

Glaciers are slowly moving masses of ice that have accumulated

Paragraph1:

1.The word **interlocked** in the passage is closest in meaning to

- A.intermediate
- B. linked
- C. frozen
- D. fully developed

2.According to paragraph 1, which of the following does NOT describe a stage in the development of firn?

- A. Hexagonal crystals become larger and interlock to form a thick layer.
- B. Snow crystals become compacted into grains.
- C. Granules recrystallize after melting, refreezing, and further compaction.
- D. Grains become denser owing to reduced air space around them.

Paragraph2:

3. The word **match** in the passage is closest in meaning to

- A. measure
- B. enlarge
- C. approximate
- D. equal

4.The word **transform** in the passage is closest in meaning to

- A. break
- B. push
- C. change

on land in areas where more snowfalls during a year than melts. Snowfalls as hexagonal crystals, but once on the ground, snow is soon transformed into a compacted mass of smaller, rounded grains. As the air space around them is lessened by compaction and melting, the grains become denser. With further melting, refreezing, and increased weight from newer snowfall above, the snow reaches a granular recrystallized stage intermediate between flakes and ice known as firn. With additional time, pressure, and refrozen meltwater from above, the small firn granules become larger, **interlocked** crystals of blue glacial ice. When the ice is thick enough, usually over 30 meters, the weight of the snow and firn will cause the ice crystals toward the bottom to become plastic and to flow outward or downward from the area of snow accumulation.

Glaciers are open systems, with snow as the system's input and meltwater as the system's main output. The glacial system is governed by two basic climatic variables: precipitation and temperature. For a glacier to grow or maintain its mass, there must be sufficient snowfall to **match** or exceed the annual loss through melting, evaporation, and calving, which occurs when the glacier loses solid chunks as icebergs to the sea or to large lakes. If summer

D. extend

5. According to paragraph 2, surplus snow affects a glacier in all the following ways EXCEPT:

- A. It provides the pressure needed to cause glacial ice to flow.
- B. It offsets losses of ice due to melting, evaporation, and calving.
- C. It brings about the formation of fern in the snow it buries.
- D. It results in temperate glaciers that are thicker than polar glaciers.

6. Paragraph 2 implies that which of the following conditions produces the fastest moving glaciers?

- A. A climate characteristic of the polar regions
- B. A thick layer of ice in a temperate climate
- C. Warm summers
- D. Snow, firm and ice that have been buried for several years

Paragraph 3:

7. The word **deceiving** in the passage is closest in meaning to

- A. approximate
- B. exaggerated
- C. unusual
- D. misleading

8. Why does the author consider **the hypothetical melting of the world's glaciers**?

- A. To contrast the effects of this event with the opposite effects of a new ice age
- B. To emphasize how much water is

temperatures are high for too long, then all the snowfall from the previous winter will melt. Surplus snowfall is essential for a glacier to develop. A surplus allows snow to accumulate and for the pressure of snow accumulated over the years to **transform** buried snow into glacial ice with a depth great enough for the ice to flow. Glaciers are sometimes classified by temperature as faster-flowing temperate glaciers or as slower-flowing polar glaciers.

Glaciers are part of Earth's hydrologic cycle and are second only to the oceans in the total amount of water contained. About 2 percent of Earth's water is currently frozen as ice. Two percent may be a **deceiving** figure, however, since over 80 percent of the world's freshwater is locked up as ice in glaciers, with the majority of it in Antarctica. The total amount of ice is even more awesome if we estimate the water released upon **the hypothetical melting** of the world's

frozen in glaciers

C. To illustrate the disastrous effects of a warming trend

D. To support the claim that glaciers are part of Earth's hydrologic cycle

9. The discussion in paragraph 3 answers all the following questions EXCEPT:

A. Where is most of Earth's freshwater?

B. What effect would a new ice age have on sea levels?

C. What is the total amount of water in Earth's oceans?

D. How much of Earth's water is in ice?

Paragraph 4:

10. The word **static** in the passage is closest in meaning to

A. unchanging

B. usable

C. thick

D. harmless

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

A. As a glacier moves, it leaves behind rock formations that have been engulfed, pushed, and dragged by the glacier.

B. Glaciers reshape the landscape by carving into rock and transporting the resulting debris to distant locations.

C. Glaciers carve the hardest rock formations with great energy and slowly reshape them into debris.

D. The tremendous energy of slowly moving glaciers transports and finally

glaciers. Sea level would rise about 60 meters. This would change the geography of the planet considerably. In contrast, should another ice age occur, sea level would drop drastically. During the last ice age, sea level dropped about 120 meters.

When snow falls on high mountains or in polar regions, it may become part of the glacial system. Unlike rain, which returns rapidly to the sea or atmosphere, the snow that becomes part of a glacier is involved in a much more slowly cycling system. Here water may be stored in ice form for hundreds or even hundreds of thousands of years before being released again into the liquid water system as meltwater. In the meantime, however, this ice is not **static**. Glaciers move slowly across the land with tremendous energy, carving into even the hardest rock formations and thereby reshaping the landscape as they engulf, push, drag, and finally deposit rock debris in places far from its original location. As a result, glaciers create a great variety of landforms that remain long after the surface is released from its icy covering.

deposits rock debris into large rock formations.

Paragraph 5:

12. According to paragraph 5, in what way is the present time unusual in the history of Earth?

- A. There are glaciers.
- B. More land is covered by glaciers than at anytime in the past.
- C. There is no ice age.
- D. No glaciers are found in Australia.

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

Firn has the appearance of wet sugar, but it is almost as hard as ice.

Where would the sentence best fit?

14. **Glaciers are part of Earth's hydrologic cycle.**

Answer Choices

- A. Glaciers, which at present contain 80 percent of Earth's freshwater, form when accumulated snow is compressed and recrystallized into ice over a period of years.
- B. When there are glaciers on Earth, water is cycled through the glacier system but the cycle period may be

Throughout most of Earth's history, glaciers did not exist, but at the present time about 10 percent of Earth's land surface is covered by glaciers. Present-day glaciers are found in Antarctica, in Greenland, and at high elevations on all the continents except Australia. In the recent past, from about 2.4 million to about 10,000 years ago, nearly a third of Earth's land area was periodically covered by ice thousands of meters thick. In the much more distant past, other ice ages have occurred.

Glaciers are slowly moving masses of ice that have accumulated on land in areas where more snowfalls during a year than melts. Snowfalls as hexagonal crystals, but once on the ground, snow is soon transformed into a compacted mass of smaller, rounded grains. ■ As the air space around them is lessened by compaction and melting, the grains become denser. ■ With further melting, refreezing, and increased weight from newer snowfall above, the snow reaches a granular recrystallized stage intermediate between flakes and ice known as firn. ■ With additional time, pressure, and refrozen meltwater from above, the small firn granules

hundreds of thousands of years during periods of ice ages.

C. The glacial system is governed by precipitation and temperature in such a way that glaciers cannot form in temperate latitudes.

D. When glacial ice reaches a depth of 30 meters, the weight of the ice causes ice crystals at the bottom to flow, and the resulting movement of the glacier carves the landscape.

E. If global warming melted the world's glaciers, sea level would rise about 60 meters worldwide.

F. Glaciers have had little effect on Earth's surface because only 2 percent of Earth's water is currently contained in glaciers, and there are fewer glaciers now than at most times in the past.

become larger, interlocked crystals of blue glacial ice. ■When the ice is thick enough, usually over 30 meters, the weight of the snow and firn will cause the ice crystals toward the bottom to become plastic and to flow outward or downward from the area of snow accumulation.

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LISTENING

1. Why does the student go to the campus newspaper office?
 - A. To turn in outlines of possible articles
 - B. To find out when his article will be printed in the newspaper
 - C. To find out if he got a position as a reporter
 - D. To get help with an assignment for his journalism course

2. Why does the student want to write for the campus newspaper?
 - A. He wants to earn some money.
 - B. He wants to learn about the newspaper business.
 - C. He wants to share his enthusiasm for physics.
 - D. He thinks the experience will be valuable.

3. The student mentions the proposed tuition increase as a possible topic for the newspaper. What does the adviser imply about the topic?
 - A. The news editor thinks that the topic is not suitable for a new reporter.
 - B. The news editor was impressed by the student's outline about the topic.
 - C. There is not enough information to write an article about the topic.
 - D. The topic has already been assigned to another reporter.

4. What will the student write about in his first article for the newspaper?
 - A. The physics department's plans for attracting more students.
 - B. The university's plan to offer more physics course.
 - C. The importance of physics in our daily lives.
 - D. The opinions of professors on the recent changes to introductory physics courses.

5. What does the adviser imply when she says this
 - A. She is not responsible for evaluating proposed articles.
 - B. She did not tell Max about the student's interest in joining the staff.
 - C. Max recently became the editor of the newspaper.
 - D. Max has been very busy lately.

6. What is the lecture mainly about?

- A. Methods people used to eliminate distractions.
- B. The area of the brain responsible for blocking distractions
- C. The usefulness of questionnaires in assessing distractability.
- D. Research about how the brain deals with distractions.

7. According to the professor, what are two weaknesses of the Cognitive Failures Questionnaire?
Click on 2 answers.

- A. It relies on subjective reporting.
- B. It assesses a limited number of situations.
- C. It does not assess visual distractions
- D. It does not account for factors other than distractability.

8. What hypotheses about distraction and brain were Lavie's experiments involving star fields designed to investigate? Click on two answers.

- A. Whether the capacity of the brain to process irrelevant information varies from person to person.
- B. Whether the brain perceives information that is irrelevant to the performance of a task.
- C. Whether the brain deals with distractions by categorizing irrelevant information as low priority.
- D. Whether the visual cortex is activated during the sensation of movement.

9. What did Lavie's scans of subjects' visual cortexes reveal?

- A. Area V5 became less active when tasks became more difficult.
- B. The presence of the star field did not affect activity in area V5.
- C. Area V5 became more active as more information appeared on the screen.
- D. Stimulating area V5 interfered with subjects' ability to perceive motion.

10. Why does the professor mention a highway?

- A. To compare two experiments designed to study distraction.
- B. To give an example of when area V5 might be activated.
- C. To describe a limitation in the brain's processing capacity.
- D. To make a point about the effect of distractions on driving.

11. What is professor's opinion of Lavie's work?

- A. She thinks it resolves most of the major questions about distraction.
- B. She feels it is of limited use because of flaws in the study designs.
- C. She believes it has changed the direction of research on distraction.

D. She thinks its findings can be applied only to visual distraction.

12. What is the lecture mainly about?

- A. Recognizing when one geologic epoch ends and another begins.
- B. How geologists determine the age of earth.
- C. Whether humans have affected earth's climate
- D. Identifying elements that affect the formation of sediment layers.

13. Why does the professor mention the Pleistocene epoch?

- A. To explain how sediments change during an ice age.
- B. To give an example of a well-defined geologic epoch
- C. To describe how certain environmental conditions affect erosion rates.
- D. To describe the factors that influence the naming of geologic epochs.

14. Researchers study sediment in order to learn about the characteristics of past geologic epochs. What does the professor say that sediment reveals about a particular epoch? Click on two answers.

- A. The climate on earth when the sediment formed.
- B. The places on earth with the highest amounts of rainfall.
- C. The level of the oceans at the time.
- D. The organisms that lived when the sediment formed.

15. According to the professor, what is the significance of the year 1800C.E? Click on two answers.

- A. The population reached 1 billion.
- B. The Anthropocene epoch was first described.
- C. Industrialization began to influence earth's environment.
- D. There was a significant change in the amount of sediment deposited around the world.

16. What does the professor imply about the spread of agriculture 8,000 years ago?

- A. It was the true beginning of the Holocene epoch.
- B. It was the greenhouse gases were at their lowest levels.
- C. It was not a major cause of population growth.
- D. It did not cause as big an environmental impact as some researchers say.

17. What does the professor say about future researchers?

- A. They may not agree that human have had an important effect on earth's surface.
- B. They will not have reliable evidence of what is happening today.
- C. They will determine when the Anthropocene epoch began.
- D. They will make predictions about when the Anthropocene epoch will end.

18. Why does the woman go to see her professor?

- A. To tell him about an athletic achievement.
- B. To find out the best approach to studying for a test.
- C. To ask a question about a laboratory project.
- D. To discuss her performance on a biology exam.

19. What does the professor imply when he mentions his experience playing soccer in college?

- A. The woman should participate in a sport that takes less of her time.
- B. The woman may not have enough time to study for her class.
- C. The woman is not trying hard enough to do well in the class.
- D. The woman should be satisfied with the results of her exam.

20. What did the woman study in her laboratory project?

- A. The best methods for preserving samples of onion cells.
- B. The differences between onion cells and other plant cells.
- C. The process of cell division in an onion.
- D. The different ways that onion cells can be diagrammed.

21. What does the professor say about the results of the brain research?

- A. Several short study sessions are more effective than one extended study session.
- B. Studying in the library increase the brain's ability to absorb details.
- C. Studying for extended periods of time is good exercise for the brain.
- D. Students who excel at laboratory work usually perform well on exams.

22. At the end of the conversation, why does the professor return to the topic of running on the track team?

- A. To suggest that the student take a break from it for a few weeks.
- B. To give an example of how exercise affects memory.
- C. To illustrate the point he is making about study habits.
- D. To find out if the next track meet will interfere with the exam.

23. What is the lecture mainly about?

- A. How Archimedes was identified as the author of some ancient texts.
- B. The recovery of some ancient writings on mathematics.
- C. Differences among various writing materials used in the Middle Ages.
- D. Techniques for restoring ancient manuscripts.

24. What are two points the professor makes about parchment? Click on two answers.

- A. It is more long lasting than paper.
- B. It was inexpensive to produce during the Middle Ages.
- C. It was the material Archimedes used for his writings.
- D. Its use for books decreased after the 1400s.

25. What does the professor imply when he explains the washing and scraping methods that were used to remove ink from a parchment surface?

- A. Washing made parchment more able to retain newly applied ink than scraping did.
- B. Washing was less effective than scraping as a means of permanently erasing ink.
- C. The scraping method was used in the creation of the Archimedes palimpsest.
- D. Neither method completely erased the original text.

26. What type of book became known as the Archimedes palimpsest?

- A. A history book.
- B. A physics book.
- C. A prayer book.
- D. An artist's book.

27. What does the professor imply about the various techniques used to view Archimedes' text?

- A. The students should be familiar with most of the techniques.
- B. Different techniques were used to analyze the iron content of ancient ink.
- C. The use of ultraviolet light was more damaging than the other techniques.
- D. X-ray image was more effective than the other techniques.

28. What does the professor imply about the significance of the Archimedes palimpsest?

- A. It is significant because it contains what may be Archimedes' most important work.

- B. It is significant because it proves that a certain mathematics text was written by Archimedes.
- C. It is significant because it is the oldest one ever discovered.
- D. It is significant because it is the first one to be completely deciphered.

29. Why does the professor discuss the exploration of hydrothermal vents?

- A. To show how the exploration helped researchers to determine the composition of ocean water.
- B. To show how the exploration challenged an assumption about biological communities.
- C. To compare two competing theories concerning chemosynthesis.
- D. To compare the life cycle of underwater plants to the life cycle of underwater animals.

30. What are three of the conditions of water near hydrothermal vents that made researchers think they would not find living organisms there? Click on 3 answers

- A. Extreme heat
- B. Extreme pressure
- C. Fast currents
- D. Lack of minerals
- E. Lack of sunlight

31. What does the professor imply about the researchers' reaction to the biological community discovered on the ocean floor?

- A. They were surprised at the large variety of organisms living near hydrothermal vents.
- B. They were surprised to find any bacteria living without sunlight.
- C. They were disappointed at not finding any animal life.
- D. They could not agree on the significance of the data that they collected.

32. According to the professor, what is the role of chemosynthesis in biological communities that are found hydrothermal vents?

- A. It enables organisms to convert hydrogen sulfide into food.
- B. It enables organisms to convert tiny amounts of light into energy.
- C. It enables organisms to withstand large amounts of carbon dioxide.
- D. It enables organisms to regulate their temperature.

33. Why does the professor mention the bacteria that live inside a tube worm?

- A. To give an example of organisms that pose a threat to tube worms.
- B. To explain what provides the organic material that tube worms use for energy.

- C. To give an example of other organisms that can withstand extreme heat.
- D. To give an example of organisms that are involved in both chemosynthesis and photosynthesis.

34. What does the professor imply when she says this

- A. She will review information from the assigned chapter.
- B. She will present additional information related to the assigned chapter.
- C. The quiz on the assigned chapter will be longer than other quizzes.
- D. The class has spent too much time on the assigned chapter.

SPEAKING

1. People make friends in many different ways. What do you think is a good way to make new friends? Use specific details and examples in your response. 【人物】

2. Do you agree or disagree with the following statement? It is important to remember and learn from the past. Use details and examples to explain your opinion. 【agree】

3. University Should Pave Running Trails

The university has about three miles of unpaved dirt running trails that pass through the forest near campus. I think these trails should be paved with cement. One reason for paving the trails would be to increase their safety. When it rains, the dirt turns to mud and becomes very slippery, so the runners who use them can slip and fall. Pavement would solve this problem. Also, paving would make the trails look nicer, which would encourage students to use them. Bumps in the trail would be smoothed out and weeds would be paved over, making the trail more attractive to runners.

Sincerely

Sally Jacobs.

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

4. Experiment Effect

One objective of any experiment is, of course, to obtain accurate results. Sometimes, however, problems occur that lead to inaccurate results. One such problem is the experimenter effect. The experimenter effect occurs when a researcher's expectations affect the outcome of the experiment. The researcher expects a particular result from the experiment, and expectation causes the researcher to act in ways that influence the behavior of the experiment participants, thereby invalidating the result of the experiment.

Explain how the example from the professor's lecture illustrates the experiment effect.

5. Briefly summarize the problem the speakers are discussing. Then state which solution you would recommend and explain the reasons for your recommendation.

6. Using the examples in the lecture, explain how the position of birds' eyes is critical to their survival.

WRITING

TASK 1

The cane toad is a large (1.8 kg) amphibian species native to Central and South America. It was deliberately introduced to Australia in 1935 with the expectation that it would protect farmers' crops by eating harmful insects. Unfortunately, the toad multiplied rapidly, and a large cane toad population now threatens small native animals that are not pests. Several measures have been proposed to stop the spread of the cane toad in Australia.

One way to prevent the spread of the toad would be to build a national fence. A fence that blocks the advance of the toads will prevent them from moving into those parts of Australia that they have not yet colonized. This approach has been used before: a national fence was erected in the early part of the twentieth century to prevent the spread of rabbits, another animal species that was introduced in Australia from abroad and had a harmful impact on its native ecosystems.

Second, the toads could be captured and destroyed by volunteers. Cane toads can easily be caught in simple traps and can even be captured by hand. Young toads and cane toad eggs are even easier to gather and destroy, since they are restricted to the water. If the Australian government were to organize a campaign among Australian citizens to join forces to destroy the toads, the collective effort might stop the toad from spreading.

Third, researchers are developing a disease-causing virus to control the cane toad populations. This virus will be specially designed: although it will be able to infect a number of reptile and amphibian species, it will not harm most of the infected species; it will specifically harm only the cane toads. The virus will control the population of cane toads by preventing them from maturing and reproducing.

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

TASK 2

In order to become financially responsible adults, children should learn to manage their own money at young age.

