

GMAT Prep

Reading Comprehension 3



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Passage 1

(This passage is excerpted from an article that was published in 1981.)

The deep sea typically has a sparse fauna dominated by tiny worms and crustaceans, with an even sparser distribution of larger animals. However, near hydrothermal vents, areas of the ocean where warm water emerges from subterranean sources, live remarkable densities of huge clams, blind crabs, and fish.

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1. The passage provides information for answering which of the following questions?

- A. What causes warm-water vents to form?
- B. Do vent faunas consume more than do deep-sea faunas of similar size?
- C. Do bacteria live in the vent water of smokers?
- D. What role does hydrogen sulfide play in chemosynthesis?
- E. What accounts for the locations of deep-sea smokers?



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2. **The information in the passage suggests that the majority of deep-sea faunas that live in nonvent habitats have which of the following characteristics?**

- A. They do not normally feed on particles of food in the water.
- B. They are smaller than many vent faunas.
- C. They are predators.
- D. They derive nutrition from a chemosynthetic food source.
- E. They congregate around a single main food source.



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3. The primary purpose of the passage is to

- A. describe a previously unknown natural phenomenon
- B. reconstruct the evolution of a natural phenomenon
- C. establish unequivocally the accuracy of a hypothesis
- D. survey explanations for a natural phenomenon and determine which is best supported by evidence
- E. entertain criticism of the author's research and provide an effective response



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4. Which of the following does the author cite as a weakness in the argument that bacterial chemosynthesis provides the foundation for the food chains at deep-sea vents?

- A. Vents are colonized by some of the same animals found in other areas of the ocean floor.
- B. Vent water does not contain sufficient quantities of hydrogen sulfide.
- C. Bacteria cannot produce large quantities of food quickly enough.
- D. Large concentrations of minerals are found in vent water.
- E. Some bacteria found in the vents are incapable of chemosynthesis.



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5. The author refers to "smokers" most probably in order to

- A. show how thermal shock can provide food for some vent faunas by stunning small animals
- B. prove that the habitat of most deep-sea animals is limited to warm-water vents
- C. explain how bacteria carry out chemosynthesis
- D. demonstrate how advection compensates for the lack of food sources on the seafloor
- E. present evidence that bacterial chemosynthesis may be an inadequate source of food for some vent faunas



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6. Which of the following can be inferred from the passage about the particulate matter that is carried down from the surface of the ocean?

- A. It is the basis of bacterial chemosynthesis in the vents.
- B. It may provide an important source of nutrition for vent faunas.
- C. It may cause the internal temperature of the vents to change significantly.
- D. It is transported as large aggregates of particles.
- E. It contains hydrogen sulfide.



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Passage 2

Throughout human history there have been many stringent taboos concerning watching other people eat or eating in the presence of others. There have been attempts to explain these taboos in terms of inappropriate social relationships either between those who are involved and those who are not simultaneously involved in the satisfaction of a bodily need, or between those already satiated and those who appear to be shamelessly gorging. Undoubtedly such elements exist in the taboos, but there is an additional element with a much more fundamental importance. In prehistoric times, when food was so precious and the on-lookers so hungry, not to offer half of the little food one had was unthinkable, since every glance was a plea for life. Further, during those times, people existed in nuclear or extended family groups, and the sharing of food was quite literally supporting one's family or, by extension, preserving one's self.



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7. **If the argument in the passage is valid, taboos against eating in the presence of others who are not also eating would be LEAST likely in a society that**
- A. had always had a plentiful supply of food
 - B. emphasized the need to share worldly goods
 - C. had a nomadic rather than an agricultural way of life
 - D. emphasized the value of privacy
 - E. discouraged overindulgence



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- 8. The author's hypothesis concerning the origin of taboos against watching other people eat emphasizes the**
- A. general palatability of food
 - B. religious significance of food
 - C. limited availability of food
 - D. various sources of food
 - E. nutritional value of food



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9. According to the passage, the author believes that past attempts to explain some taboos concerning eating are

- A. unimaginative
- B. implausible
- C. inelegant
- D. incomplete
- E. unclear



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- 10. In developing the main idea of the passage, the author does which of the following?**
- A. Downplays earlier attempts to explain the origins of a social prohibition.
 - B. Adapts a scientific theory and applies it to a spiritual relationship.
 - C. Simplifies a complex biological phenomenon by explaining it in terms of social needs.
 - D. Reorganizes a system designed to guide personal behavior.
 - E. Codifies earlier, un-systematized conjectures about family life.



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Of Homer's two epic poems, the *Odyssey* has always been more popular than the *Iliad*, perhaps because it includes more features of mythology that are accessible to readers. Its subject (to use Maynard **Mack's categories**) is "life-as-spectacle," for readers, diverted by its various incidents, observe its hero Odysseus primarily from without; the tragic *Iliad*, however, presents "life-as-experience": readers are asked to identify with the mind of Achilles, whose motivations render him a not particularly likable hero. In addition, the *Iliad*, more than the *Odyssey*, suggests the complexity of the gods' involvement in human actions, and to the extent that modern readers find this complexity a needless complication, the *Iliad* is less satisfying than the *Odyssey*, with its simpler 'scheme' of divine justice. Finally, since the *Iliad* presents a historically verifiable action, Troy's siege, the poem raises historical questions that are absent from the *Odyssey's* blithely imaginative world.



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11. The author uses Mack's "categories" most probably in order to
- A. argue that the *Iliad* should replace the *Odyssey* as the more popular poem
 - B. indicate Mack's importance as a commentator on the *Iliad* and the *Odyssey*
 - C. suggest one way in which the *Iliad* and the *Odyssey* can be distinguished
 - D. point out some of the difficulties faced by readers of the *Iliad* and the *Odyssey*
 - E. demonstrate that the *Iliad* and the *Odyssey* can best be distinguished by comparing their respective heroes



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12. The author suggests that the variety of incidents in the *Odyssey* may deter the reader from
- A. concentrating on the poem's mythological features
 - B. concentrating on the psychological states of the poem's central character
 - C. accepting the explanations that have been offered for the poem's popularity
 - D. accepting the poem's scheme of divine justice
 - E. accepting Maynard Mack's theory that the poem's subject is "life as spectacle"



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13. The passage is primarily concerned with
- A. distinguishing arguments
 - B. applying classifications
 - C. initiating a debate
 - D. resolving a dispute
 - E. developing a contrast



Reading Comprehension 3

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14. It can be inferred from the passage that a reader of the *Iliad* is likely to have trouble identifying with the poem's hero for which of the following reasons?
- A. The hero is eventually revealed to be unheroic.
 - B. The hero can be observed by the reader only from without.
 - C. The hero's psychology is not historically verifiable.
 - D. The hero's emotions often do not seem appealing to the reader.
 - E. The hero's emotions are not sufficiently various to engage the reader's attention.



Reading Comprehension 3

Passage 4

How aquatic vertebrates evolved into land vertebrates has been difficult for evolutionary biologists to study, in part because the shift from water to land appears to have occurred rapidly and has yielded a scarce fossil record. Prior to the advent of DNA sequencing, the primary guideposts in tracing the emergence of tetrapods have been morphological considerations, which have highlighted the coelacanth and the lungfish as species of interest.

Coelacanths and lungfish are distinct from other fish in that they are lobe-finned species. Lobe-finned species, like ray-finned fishes such as tuna and trout, possess not cartilage but a bony skeleton, a key prerequisite for survival on land. Lobe-finned fish species are distinguished from ray-finned species by fins that are joined to a single bone and which thus have the potential to evolve into limbs. Coelacanths and lungfish are two of the only lobe-finned species that are not extinct, and since they have evolved minimally since the time of the appearance of tetrapods, they are sometimes referred to as "living fossils." In fact, the first live coelacanth was discovered more than 100 years after the species had been discovered in fossilized form.

Whether the coelacanth in particular is rightly called a living fossil and whether it is the closest living relative of the original tetrapods are two questions that have been illuminated more recently by genetic analysis. The coelacanth's genome has recently been sequenced, and this analysis has led to the conclusion that the lungfish is the closer relative of tetrapods. Moreover, **the coelacanth DNA has shown evolution over time** – although at a rate much slower than that of most animals. Possibly, the fish's morphology and its environment deep in the Indian Ocean have created favorable conditions allowing a more slowly evolving species to have survived for the last 400 million years.



Reading Comprehension 3

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15. The passage provides information in support of which of the following assertions?

- A. Although a set of possible evolutionary paths leading to a specific result can be identified, no one of them can be conclusively identified as correct.
- B. Physical similarities between species give some justification to believe those species may have an evolutionary link.
- C. Studies of living fossils enable conclusions about evolutionary history that could not be drawn based on other types of evidence.
- D. Species with close physical similarities may nevertheless have widely different evolutionary histories.
- E. How quickly an organism's DNA changes over time indicates the role that organism has played in the evolution of related species.



Reading Comprehension 3

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16. According to the passage, coelacanths and lungfish were initially of interest in the study of the evolution of land vertebrates because

- A. they both had evolved minimally since the time of the appearance of tetrapods
- B. they both had fins joined to a single bone and which thus had the potential to evolve into limbs
- C. they both have generous fossil records and can be studied also in living form
- D. the coelacanth's genome has been sequenced
- E. they both are distinct from other fish and also are found in deep ocean environments



Reading Comprehension 3

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17. The author discusses the evolution of coelacanth DNA in the highlighted text primarily in order to

- A. clarify that coelacanths are not accurately referred to as living fossils
- B. distinguish the evolutionary role of the coelacanth from that of the lungfish
- C. illustrate a unique characteristic of lobe-finned fish species
- D. support a claim that that coelacanths are better adapted to survive than are most species of fish
- E. illustrate how differences in a species' DNA over time can establish whether that species is likely to have played a particular role in evolution



Reading Comprehension 3

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18. It can be inferred from the passage that which of the following is a true statement about the evolution of a species?

- A. If a species evolves more slowly than competing species, it will have to seek out a new environment in which to live in order to survive.
- B. The longer a species survives without going extinct, the more likely it is to maintain identical or nearly identical DNA over time.
- C. A species' rate of evolution can be inferred from the degree of change over time of its morphology.
- D. A species' rate of evolution is driven partly by the degree of harshness of the conditions in which it lives.
- E. If true living fossils exist, they are not lobe-finned fish.



Reading Comprehension 3

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19. The author suggests that which of the following is an evolutionary disadvantage of the prominence of cartilage in fish?

- A. A lessened ability to compete with coelacanths and lungfish
- B. The absence of a fossil record
- C. An increase in the rate of the change of a species' DNA over time
- D. A decrease in the ability to survive deep in the Indian Ocean
- E. An inability to survive on land



Reading Comprehension 3

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20. The primary purpose of the third paragraph is to

- A. draw a conclusion based on information presented in the previous paragraph
- B. introduce a topic that is not discussed earlier in the passage
- C. introduce evidence that contradicts a view presented earlier in the passage
- D. answer questions raised in the previous two paragraphs
- E. describe a different method of arriving at a conclusion reached in the previous paragraph



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21. In the passage, the author is primarily concerned with doing which of the following?

- A. Explaining characteristics of lobe-finned fish that establish their role in the evolution of tetrapods
- B. Comparing the evolutionary history of the coelacanth with that of lungfish
- C. Refuting the validity of terming the lobe-finned fish in question "living fossils"
- D. Pointing out features of the coelacanth and lungfish that make them superior to ray-finned species
- E. Explaining how the lungfish possesses the necessary characteristics to survive on land



Reading Comprehension 3

Passage 5

Thunderstorms generally develop in the late afternoon or evening hours, when moist, daytime air rises into the upper atmosphere as temperatures cool and denser, night-time air slides in underneath. Clouds of water droplets, generally supercooled (droplets whose temperature has fallen below 0 degrees Celsius but have not yet frozen), condense around dust particles in the air until a critical density is reached, at which point it begins to rain. Cloud-to-ground lightning occurs when a discrepancy in electric charge develops between a cloud and the earth. For reasons that are not widely agreed upon, a charge begins to build up in this mixed water and ice region. When this discrepancy reaches a certain "breakdown potential," the surge of electric charge known as lightning moves downward between the negative and positive charge centres in 50-yard sections called step leaders. Eventually, it encounters something on the ground that is a good connection, and, with the circuit complete, the charge is lowered from cloud to ground. This entire event usually takes less than half a second. It is by preventing the requisite charge polarization that scientists hope someday to discourage the creation of cloud-to-ground lightning, thereby making storms safer and easier to —weather.

Many authorities adhere to a hypothesis for cloud electrification theory which emphasizes that the charging process occurs when a supercooled droplet of water collides with an ice particle of precipitation size (a hailstone)—the precipitation model. At this moment a large portion of the droplet freezes—resulting in a negative charge on the forming hailstone— while a smaller portion, still lingering in its supercooled state, dissociates itself—taking on a positive charge. The relatively heavy hailstone, responding to gravity, then begins to fall, while the extremely light supercooled droplet is carried by updrafts to higher regions of the cloud. Assuming the veracity of this account of charge separation, scientists guess that they would be able to discourage polarization by reducing the quantity of supercooled water in a cloud. To this purpose they have conducted preliminary seeding experiments, in which they have attempted to initiate the freezing of excess water by dropping large quantities of dry ice and silver iodide into potential thunderclouds, the results of which are, however, as yet inconclusive.



Reading Comprehension 3

A more recent convection model of the polarization process is offered by Bernard Vonnegut and Charles B. Moore, who contend that the primary cause of electrical charge formation in clouds is the capture of ionized (electrically charged) gas molecules by water droplets. The ions, so the theory goes, are absorbed by the droplets and transported by updrafts and downdrafts to various portions of the cloud. Vonnegut and Moore suggest that, in order to combat the effects of this transport of ions, it would be necessary to modify the properties of ions beneath accumulating clouds. In support of this explanation of cloud polarization they conducted a series of "space charge" experiments. Suspending a high-voltage wire above nine miles of Illinois countryside, Vonnegut and Moore released large quantities of ions into the atmosphere below, forming clouds. By means of airplanes specially equipped for electrical measurements, they determined that the ions were being distributed to differing regions of the clouds.



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22. Which option best summarizes the author's main point in the passage?

- A. Several recent breakthroughs have increased our understanding of the causes of lightning.
- B. Charge polarization in clouds can result both from the freezing of supercooled droplets and from the modification of ion properties.
- C. The standard explanation of the causes of lightning is inaccurate and should be modified.
- D. Scientists are not yet agreed on either the causes of cloud-to-ground lightning or the methods of controlling it.
- E. To argue in favour of one model of polarization process.



Reading Comprehension 3

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23. It can be inferred from the information in the passage that the term "breakdown potential" as used in the passage refers to:

- A. a charge polarity sufficient to cause lightning.
- B. the intensity of the lightning bolt.
- C. the distance between the negatively charged earth and the positively charged cloud.
- D. the duration of the lightning event
- E. the point at which a cloud breaks down



Reading Comprehension 3

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24. According to points made in the passage by the author, scientists agree that lightning can occur when:

- A. ions are transported by updrafts to higher regions of a thundercloud.
- B. supercooled droplets collide with hailstones in clouds.
- C. a difference in charge exists between a cloud and the ground.
- D. dry ice is released into a potential thundercloud.
- E. there is high moisture content in the atmosphere



Reading Comprehension 3

Thunderstorms generally develop in the late afternoon or evening hours, when moist, daytime air rises into the upper atmosphere as temperatures cool and denser, night-time air slides in underneath. Clouds of water droplets, generally supercooled (droplets whose temperature has fallen below 0 degrees Celsius but have not yet frozen), condense around dust particles in the air until a critical density is reached, at which point it begins to rain. Cloud-to-ground lightning occurs when a discrepancy in electric charge develops between a cloud and the earth. For reasons that are not widely agreed upon, a charge begins to build up in this mixed water and ice region. When this discrepancy reaches a certain "breakdown potential," the surge of electric charge known as lightning moves downward between the negative and positive charge centres in 50-yard sections called step leaders. Eventually, it encounters something on the ground that is a good connection, and, with the circuit complete, the charge is lowered from cloud to ground. This entire event usually takes less than half a second. It is by preventing the requisite charge polarization that scientists hope someday to discourage the creation of cloud-to-ground lightning, thereby making storms safer and easier to —weather.

Many authorities adhere to a hypothesis for cloud electrification theory which emphasizes that the charging process occurs when a supercooled droplet of water collides with an ice particle of precipitation size (a hailstone)—the precipitation model. At this moment a large portion of the droplet freezes—resulting in a negative charge on the forming hailstone—while a smaller portion, still lingering in its supercooled state, dissociates itself—taking on a positive charge. The relatively heavy hailstone, responding to gravity, then begins to fall, while the extremely light supercooled droplet is carried by updrafts to higher regions of the cloud. Assuming the veracity of this account of charge separation, scientists guess that they would be able to discourage polarization by reducing the quantity of supercooled water in a cloud. To this purpose they have conducted preliminary seeding experiments, in which they have attempted to initiate the freezing of excess water by dropping large quantities of dry ice and silver iodide into potential thunderclouds, the results of which are, however, as yet inconclusive.

A more recent convection model of the polarization process is offered by Bernard Vonnegut and Charles B. Moore, who contend that the primary cause of electrical charge formation in clouds is the capture of ionized (electrically charged) gas molecules by water droplets. The ions, so the theory goes, are absorbed by the droplets and transported by updrafts and downdrafts to various portions of the cloud. Vonnegut and Moore suggest that, in order to combat the effects of this transport of ions, it would be necessary to modify the properties of ions beneath accumulating clouds. In support of this explanation of cloud polarization they conducted a series of "space charge" experiments. Suspending a high-voltage wire above nine miles of Illinois countryside, Vonnegut and Moore released large quantities of ions into the atmosphere below, forming clouds. By means of airplanes specially equipped for electrical measurements, they determined that the ions were being distributed to differing regions of the clouds.

25. Which of the following statements would be **LEAST** consistent with the account of cloud polarization offered by Vonnegut and Moore?
- A. Charge is transported within clouds via updrafts and downdrafts.
 - B. Lightning is caused by a discrepancy in electric charge between a cloud and the ground.
 - C. Water droplets are capable of carrying an electrical charge.
 - D. Lightning occurs when positively and negatively charged droplets are absorbed by hailstones.
 - E. The main cause of electrical charge formation is the capture of ionized gas molecules





Thank you