TOEFL ITP® Advanced Reading Practice

Read the passage below and answer the 12 questions that follow. Select the best answer for each item.

Passage: The Quest for Water on Mars

[1] For centuries, the planet Mars has fascinated astronomers and the public alike, largely due to the long-held speculation that it might harbor extraterrestrial life. Central to this possibility is the presence of liquid water, an essential ingredient for all known forms of life. While early observers mistook optical illusions on the Martian surface for artificial irrigation canals, modern robotic missions have revealed a far more complex geological history—one that suggests Mars was once a much warmer and wetter world than the frozen desert seen today.

[2] Data collected by satellite orbiters and surface rovers, such as *Curiosity* and *Perseverance*, offer compelling physical evidence of ancient water activity. Images of the planet's surface show vast networks of winding channels that closely resemble river valleys on Earth, as well as large dry basins that were likely ancient lakes. Furthermore, instruments on these rovers have detected sedimentary rocks and clay minerals that could only have formed in the presence of sustained liquid water. Chemical analyses of soil samples further confirm that surface water was abundant billions of years ago during the planet's early history.

[3] Despite this evidence, liquid water cannot exist on the surface of Mars today for extended periods. The Martian atmosphere is exceptionally thin—less than one percent of Earth's atmospheric pressure—and temperatures are exceedingly cold, averaging around -60°C (-76°F). Under these harsh conditions, exposed liquid water rapidly evaporates or freezes solid. However, scientists have discovered substantial amounts of water ice stored beneath the Martian surface and in its polar ice caps. Recent radar observations have even suggested the potential existence of salty, liquid water lakes buried deep beneath the ice at the south pole.

[4] Understanding where Mars's ancient water went remains one of planetary science's greatest challenges. Scientists hypothesize that as Mars lost its protective magnetic field billions of years ago, solar winds gradually stripped away much of its atmosphere. As atmospheric pressure dropped, the planet cooled, and its surface water either escaped into space or froze underground. Unraveling this atmospheric transformation not only sheds light on Mars's past habitability but also provides critical insight into the future preservation of Earth's own environment.

Questions

1. What is the primary purpose of the passage?

(A) To explain how ancient astronomers discovered canals on Mars

(B) To detail the history and current state of water on Mars

(C) To compare the weather patterns of Earth and Mars

(D) To argue that liquid water currently covers most of Mars

2. The word "speculation" in paragraph 1 is closest in meaning to

(A) proof

(B) conjecture

(C) experiment

(D) agreement

3. According to paragraph 2, which of the following is cited as evidence of ancient water on Mars?

(A) Photos of active river systems flowing across the planet

(B) Samples of frozen ice brought back to Earth by rovers

(C) Dry basins and winding channels resembling Earth's river valleys

(D) Massive oceans recorded by early satellite observations

4. According to paragraph 3, liquid water cannot remain on Mars's surface today because

(A) the solar winds absorb all surface moisture instantly

(B) the atmospheric pressure is too low and temperatures are extremely cold

(C) the soil absorbs water before it can accumulate

(D) underground lakes draw all surface water downward

5. The word "substantial" in paragraph 3 is closest in meaning to

(A) significant

(B) minor

(C) temporary

(D) invisible

6. Which of the following can be inferred from paragraph 4 about Mars's magnetic field?

(A) It was created by underground liquid water lakes.

(B) It protected the planet's atmosphere from being stripped away by solar winds.

(C) It was stronger than Earth's magnetic field.

(D) It froze due to the rapid drop in global temperatures.

7. All of the following are mentioned as current locations of water ice on Mars EXCEPT

(A) polar ice caps

(B) subsurface layers

(C) open surface lakes

(D) deep regions beneath the south pole

8. Why does the author mention "sedimentary rocks and clay minerals" in paragraph 2?

(A) To prove that volcanic activity occurred across Mars

(B) To support the claim that liquid water was present over a long period

(C) To show that soil on Mars is identical to soil on Earth

(D) To explain how robotic rovers navigate the Martian landscape

9. The word "harsh" in paragraph 3 is closest in meaning to

(A) predictable

(B) severe

(C) changing

(D) silent

10. According to paragraph 4, what happened as a result of Mars cooling down?

(A) Its atmosphere became thicker and denser.

(B) Its surface water either froze underground or escaped into space.

(C) Its magnetic field rapidly regenerated.

(D) Solar winds ceased to affect the planet.

11. Which sentence below best expresses the essential information in the highlighted sentence from paragraph 4?

"Unraveling this atmospheric transformation not only sheds light on Mars's past habitability but also provides critical insight into the future preservation of Earth's own environment."

(A) Studying Mars's atmosphere helps scientists figure out how to transport Earth's environment to space.

(B) Understanding how Mars lost its atmosphere reveals if Mars had life in the past and helps us protect Earth's environment.

(C) Earth's atmosphere will soon undergo the exact same transformation that destroyed Mars's surface water.

(D) Preserving Earth's environment is the main reason scientists study whether Mars was ever inhabited.

12. Look at the four spaces [■] that indicate where the following sentence could be added to paragraph 1:

"These early observations turned out to be completely incorrect once clearer images were obtained."

Where would the sentence best fit?

For centuries, the planet Mars has fascinated astronomers and the public alike, largely due to the long-held speculation that it might harbor extraterrestrial life. **[■1]** Central to this possibility is the presence of liquid water, an essential ingredient for all known forms of life. **[■2]** While early observers mistook optical illusions on the Martian surface for artificial irrigation canals, modern robotic missions have revealed a far more complex geological history—one that suggests Mars was once a much warmer and wetter world than the frozen desert seen today. **[■3]** Data collected by satellite orbiters and surface rovers offer compelling physical evidence of ancient water activity. **[■4]**

(A) [■1]

(B) [■2]

(C) [■3]

(D) [■4]