토플 적중 90 READING DAY 18.

Pre-Study

1. 점수 쑥쑥 동의어

1. in tandem	
2. inaugurate	
3. inclement	
4. paramount	
5. partake	
6. pragmatic	

supreme	consume
initiate	unfavorable
in association	practical

2. 한 눈 쑥쑥 지문 정리

Act 6-2 The First Life on Earth

P1 LHB 이전 생명체 증거 X : LHB = 엄청나게 많은 소행성 & planet 충돌시기
→ earth, semi-molten 에서 → stabilize → life

P2 초기 이론 : life 시작 in water (w/ amino)
원시대기 산소 x, first life 산소발생 (광합성) 추정

P3 이전 이론 결함 : 대기에 산소 풍부 (산소 amino 파괴)
→ first life 산소대가 없는 곳 존재 = deep ocean

P4 deep sea creature 생존 이유 : volcanic vent (warm & chemical 제공)

P5 현재 B.와 특징 공유하는 archaeBateria.특징

P6 archB. 화석X : chemical foss. 존재, first life & lead to other life

Lecture Actual Test 06-2 The First Life on Earth

학습목표

- ◆ **지문을 미리 풀어보고, 정답 / 오답의 정확한 단서를 파악한다.**
- ◆ **특히, 오답률이 높은 문제를 철저히 분석한다. (1, 4, 6, 8, 10)**

1. Actual Test 06-2 The First Life on Earth

P1. Although there is still disagreement in scientific circles regarding what is the earliest evidence of life on Earth, the majority of experts agree that it could not have existed before the end of the Late Heavy Bombardment (LHB). The LHB was a period extending from approximately 4.1 to 3.8 billion years ago during which an unusually large number of asteroids collided with the inner planets of the solar system. Before this stellar assault, the inner planets had accreted most of their current mass and become fairly stable and solid. The severity of the LHB returned the Earth to a semi-molten state, and no evidence of life has been found that predates it. However, once the planet stabilized, life began gradually to take shape.

1. The author begins the passage by
   (A) adducing proof of the first life forms on Earth
   (B) explaining the background of the emergence of life
   (C) presenting the mainstream theory about the birth of life
   (D) arguing how important the LHB was in the history of Earth

P1. Although there is still disagreement in scientific circles regarding what is the earliest evidence of life on Earth, the majority of experts agree that 3-D it could not have existed before the end of the Late Heavy Bombardment (LHB). The LHB was a period extending from 3-A approximately 4.1 to 3.8 billion years ago during which 3-B an unusually large number of asteroids collided with the inner planets of the solar system. Before this stellar assault, the inner planets had accreted most of their current mass and become fairly stable and solid. The severity of the LHB returned the Earth to a semi-molten state, and 3-D no evidence of life has been found that predates it. However, once the planet stabilized, life began gradually to take **shape**.

2. The word **shape** in paragraph 1 is closest in meaning to
   (A) form
   (B) fashion
   (C) state
   (D) semblance

3. According to paragraph 1, all of the following are true about the LHB EXCEPT
   (A) it lasted for about 300 million years
   (B) a great number of asteroid collisions occurred then
   (C) it provided the appropriate environment for the birth of life on Earth
   (D) it seems that life had not existed on Earth before the LHB

P3. However, there was a flaw in this theory. [While the early atmosphere lacked oxygen, it was rich in water vapor, which **readily** reacts to ultraviolet radiation from the sun, splitting **its** molecules into hydrogen and oxygen.]

4. The word **readily** in paragraph 3 is closest in meaning to
   (A) urgently
   (B) reluctantly
   (C) gradually
   (D) easily

5. The word **its** in paragraph 3 refers to
   (A) atmosphere
   (B) vapor
   (C) radiation
   (D) oxygen

P2. However, the planet's original atmosphere contained only trace amounts of oxygen, the element which so many organisms rely upon. Therefore, they concluded that these first life forms must have created the oxygen that permeates our atmosphere. They theorized that these organisms must have developed photosynthesis, ~~~.
P3. However, there was a flaw in this theory.
While the early atmosphere lacked oxygen, it was rich in water vapor, which readily reacts to ultraviolet radiation from the sun, splitting its molecules into hydrogen and oxygen. ~~This means that the earliest life forms could not have formed in areas exposed to the atmosphere.

6. According to paragraphs 2 and 3, what did scientists incorrectly presume about the first life forms?
   (A) They presumed that the first life forms did not need oxygen to metabolize.
   (B) They presumed that the first life forms created oxygen by photosynthesis.
   (C) They presumed that the early atmosphere contained little oxygen.
   (D) They presumed that the early atmosphere was filled with water vapor.

P3. However, there was a flaw in this theory. While the early atmosphere lacked oxygen, it was rich in water vapor, which readily reacts to ultraviolet radiation from the sun, splitting its molecules into hydrogen and oxygen. This means that the chemical soup from which life supposedly came would have been exposed to oxygen, which would have destroyed the amino acids. This means that the earliest life forms could not have formed in areas exposed to the atmosphere. So, life could only have started where the oxygenated atmosphere could not reach: deep in the ocean.

7. According to paragraph 3, why did the earliest life forms start deep in the ocean?
(A) Because they needed oxygen to breathe and metabolize
(B) Because the seawater contained abundant hydrogen and oxygen then
(C) Because the ocean functioned as chemical soup which had the necessary materials
(D) Because the necessary chemicals for life were vulnerable to oxygen in the atmosphere

P4. The cold, dark, high-pressure environment of the seafloor seems like the most inhospitable environment imaginable, but even today life thrives there. The majority of the seabed is barren, but around volcanic vents, a whole ecosystem exists that depends upon them for warmth and the chemicals that pour out of them.

P4. Crustaceans feed upon worms, which in turn rely upon bacteria for their food. These bacteria are able to metabolize the chemicals that pour from **crevices** in the seabed, and they are very similar to their ancient cousins. Like their ancestors, they absorb the chemicals before they react to their new environment, and absorb the energy released when those inevitable reactions occur. The fossil record confirms that such bacteria existed up to 3.5 billion years ago, and they are called archaebacteria.

8. The word **crevices** in paragraph 4 is closest in meaning to
(A) pebbles
(B) cliffs
(C) gaps
(D) flanks

9. According to paragraph 4, what enables deep-sea organisms to survive the harsh environment?
(A) The low temperature and high pressure
(B) The lack of light which is helpful to certain organisms
(C) Abundant bacteria as a food source for various organisms
(D) The heat and materials released from volcanic vents

P5. Despite their distant origins, archaebacteria still exist today, and they are typically found in harsh environments like the ocean floor, hot springs, and even highly acidic mine drainage. [They share many similarities with bacteria and eukaryotes, the other two domains, but they are undeniably unique and have their own domain in the classification of organisms called prokaryotes, which is divided into four different phyla.]

핵심정보: 1. archaB many 유사점 (w/B&Eukar)
2. BUT archaB=독특 & own domain (prok: divid 4phyla)

10. 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) They share many similarities with bacteria and eukaryotes, which are definitely unique and classified as prokaryotes and further divided into four different phyla.
(B) They are very similar to bacteria and eukaryotes, but these two domains are separately classified as prokaryotes, which are further divided into four different phyla.
(C) While they are similar to bacteria and eukaryotes in many ways, they are distinctly categorized as prokaryotes and further divided into four different phyla.
(D) They are very similar to bacteria and eukaryotes, which are the two domains with which they are classified as prokaryotes and further categorized into four different phyla.

P5. Despite their distant origins, archaebacteria still exist today, and they are typically found in harsh environments like the ocean floor, hot springs, and even highly acidic mine drainage. 11-A They share many similarities with bacteria and eukaryotes, the other two domains, but they are undeniably unique and 11-B have their own domain in the lassification of organisms called prokaryotes, which is divided into four different phyla.

P5. They have no nucleus or any other form of organelles with membranes within their cells, but they do contain genes, which have allowed scientists to trace their lineage. Researchers have compared their genome to that of many extant bacteria, and the results have revealed that they share common ancestry.

11. According to paragraph 5, all of the following are true about archaebacteria EXCEPT

(A) they are similar to other bacteria and eukaryotes in many ways
(B) they are classified as prokaryotes and still exist today in severe environments
(C) they are the oldest single-celled organisms to possess a nucleus
(D) they have genes though they lack any organelles with membranes

P6. Unfortunately, archaebacteria lack defined cell walls or shapes, so fossilized samples are impossible to find. Instead, scientists have found characteristic chemical fossils in the form of lipids that do not exist in other organisms. Along with bacteria and other singlecelled organisms, archaebacteria were the only life on Earth for around 2 billion years. Over time, these organisms evolved and became more complex, leading to the existence of all other life on the planet, including humans.

12. According to paragraph 6, why is it difficult to discover fossils of archaebacteria?
(A) Because they do not have cell walls, which makes it impossible to be fossilized
(B) Because a long period of time has destroyed the remaining fossils
(C) Because they consist only of lipids which other organisms lack
(D) Because they are minuscule and invisible to the naked eye

13. Where would the sentence best fit?
→ These samples vary in age from 2.7 to 3.8 billion years old, which makes them absolutely among the oldest organisms on the planet.

P6. [■A] Unfortunately, archaebacteria lack defined cell walls or shapes, so fossilized samples are impossible to find. [■B] Instead, scientists have found characteristic chemical fossils in the form of lipids that do not exist in other organisms. [■C] Along with bacteria and other singlecelled organisms, archaebacteria were the only life on Earth for around 2 billion years. [■D] Over time, these organisms evolved and became more complex, leading to the existence of all other life on the planet, including humans.

14. **The earliest life forms, which are called archaebacteria, arose in the deep sea.**

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원시대기 산소x, first life
산소발생 (광합성)
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P5 현재 B.와 특징 공유하는 archB.특징
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(A) Scientists assumed that the first organisms came from small bodies of water that had materials necessary for starting life.
(B) The first organism is believed to have emerged in the deep sea since the early Earth's atmospheric conditions were improper for the birth of new life forms.
(C) The first life forms might have been able to feed from volcanic vents by absorbing the energy emitted in the process of chemical reactions.
(D) Much about archaebacteria remains unknown since fossilized samples of them are unobtainable.
(E) The only way to trace the origin of archaebacteria is to compare their genetic information with that of other bacteria.
(F) Archaebacteria are believed to be the first life forms on Earth because they share similarities with the genomes of extant bacteria.

Tip!

Reading 의 고수 비법 2

잘 된 Reading: 큰 그림 그릴 수 있나? = 전체 내용 연결, 흐름 파악

(1) 문장 Key Word → 예측 → 확인

(2) 단락 Grouping: 단락 요약 → 주제

(3) 지문 각 단락 주제 Grouping → 지문 전체 연결, 흐름