托福经典阅读练习详解 Geology and Landscape

Most people consider the landscape to be unchanging, but Earth is a dynamic body, and its surface is continually altering-slowly on the human time scale, but relatively rapidly when compared to the great age of Earth (about 4,500 billion years). There are two principal influences that shape the terrain: constructive processes such as uplift, which create new landscape features, and destructive forces such as erosion, which gradually wear away exposed landforms.

Hills and mountains are often regarded as the epitome of permanence, successfully resisting the destructive forces of nature, but in fact they tend to be relatively short-lived in geological terms. As a general rule, the higher a mountain is, the more recently it was formed; for example, the high mountains of the Himalayas are only about 50 million years old. Lower mountains tend to be older, and are often the eroded relics of much higher mountain chains. About 400 million years ago, when the present-day continents of North America and Europe were joined, the Caledonian mountain chain was the same size as the modern Himalayas. Today, however, the relics of the Caledonian orogeny (mountain-building period) exist as the comparatively low mountains of Greenland, the northern Appalachians in the United States, the Scottish Highlands, and the Norwegian coastal plateau.

The Earth's crust is thought to be divided into huge, movable segments, called plates, which float on a soft plastic layer of rock. Some mountains were formed as a result of these plates crashing into each other and forcing up the rock at the plate margins. In this process, sedimentary rocks that originally formed on the seabed may be folded upwards to altitudes of more than 26,000 feet. Other mountains may be raised by earthquakes, which fracture the Earth's crust and can displace enough rock to produce block mountains. A third type of mountain may be formed as a result of volcanic activity which occurs in regions of active fold mountain belts, such as in the Cascade Range of western North America. The Cascades are made up of lavas and volcanic materials. Many of the peaks are extinct volcanoes.Whatever the reason for mountain formation, as soon as land rises above sea level it is subjected to destructive forces. The exposed rocks are attacked by the various weather processes and gradually broken down into fragments, which are then carried away and later deposited as sediments. Thus, any landscape represents only a temporary stage in the continuous battle between the forces of uplift and those of erosion.

The weather, in its many forms, is the main agent of erosion. Rain washes away loose soil and penetrates cracks in the rocks. Carbon dioxide in the air reacts with the rainwater, forming a weak acid (carbonic acid) that may chemically attack the rocks. The rain seeps underground and the water may reappear later as springs. These springs are the sources of streams and rivers, which cut through the rocks and carry away debris from the mountains to the lowlands.

Under very cold conditions, rocks can be shattered by ice and frost. Glaciers may form in permanently cold areas, and these slowly moving masses of ice cut out valleys, carrying with them huge quantities of eroded rock debris. In dry areas the wind is the principal agent of erosion. It carries fine particles of sand, which bombard exposed rock surfaces, thereby

wearing them into yet more sand. Even living things contribute to the formation of landscapes. Tree roots force their way into cracks in rocks and, in so doing, speed their splitting. In contrast, the roots of grasses and other small plants may help to hold loose soil fragments together, thereby helping to prevent erosion by the wind.

Paragraph 1: Most people consider the landscape to be unchanging, but Earth is a dynamic body, and its surface is continually altering-slowly on the human time scale, but relatively rapidly when compared to the great age of Earth (about 4,500 billion years). There are two principal influences that shape the terrain: constructive processes such as uplift, which create new landscape features, and destructive forces such as erosion, which gradually wear away exposed landforms.

1. According to paragraph 1, which of the following statements is true of changes in Earth's landscape?

〇They occur more often by uplift than by erosion

〇They occur only at special times.

〇They occur less frequently now than they once did.

〇They occur quickly in geological terms.

2. The word relatively in the passage is closest in meaning to

〇Unusually

〇Comparatively

〇Occasionally

〇Naturally

Paragraph 2: Hills and mountains are often regarded as the epitome of permanence, successfully resisting the destructive forces of nature, but in fact they tend to be relatively short-lived in geological terms. As a general rule, the higher a mountain is, the more recently it was formed; for example, the high mountains of the Himalayas are only about 50 million years old. Lower mountains tend to be older, and are often the eroded relics of much higher mountain chains. About 400 million years ago, when the present-day continents of North America and Europe were joined, the Caledonian mountain chain was the same size as the modern Himalayas. Today, however, the relics of the Caledonian orogeny (mountain-building period) exist as the comparatively low mountains of Greenland, the

northern Appalachians in the United States, the Scottish Highlands, and the Norwegian coastal plateau.

3. Which of the following can be inferred from paragraph 2 about the mountains of the Himalayas?

〇Their current height is not an indication of their age.

〇At present, they are much higher than the mountains of the Caledonian range.

〇They were a uniform height about 400 million years ago.

〇They are not as high as the Caledonian mountains were 400 million years ago.

4. The word relics in the passage IS closest in meaning to

〇Resemblances

〇Regions

〇Remains

〇Restorations

Paragraph 3: The Earth's crust is thought to be divided into huge, movable segments, called plates, which float on a soft plastic layer of rock. Some mountains were formed as a result of these plates crashing into each other and forcing up the rock at the plate margins. In this process, sedimentary rocks that originally formed on the seabed may be folded upwards to altitudes of more than 26,000 feet. Other mountains may be raised by earthquakes, which fracture the Earth's crust and can displace enough rock to produce block mountains. A third type of mountain may be formed as a result of volcanic activity which occurs in regions of active fold mountain belts, such as in the Cascade Range of western North America. The Cascades are made up of lavas and volcanic materials. Many of the peaks are extinct volcanoes.

5. According to paragraph 3, one cause of mountain formation is the

〇effect of climatic change on sea level

〇slowing down of volcanic activity

〇force of Earth's crustal plates hitting each other

〇replacement of sedimentary rock with volcanic rock

Paragraph 5: The weather, in its many forms, is the main agent of erosion. Rain washes away loose soil and penetrates cracks in the rocks. Carbon dioxide in the air reacts with the rainwater, forming a weak acid (carbonic acid) that may chemically attack the rocks. The rain seeps underground and the water may reappear later as springs. These springs are the

sources of streams and rivers, which cut through the rocks and carry away debris from the mountains to the lowlands.

6. Why does the author mention Carbon dioxide in the passage?

〇To explain the origin of a chemical that can erode rocks

〇To contrast carbon dioxide with carbonic acid

〇To give an example of how rainwater penetrates soil

〇To argue for the desirability of preventing erosion

7. The word seeps in the passage is closest in meaning to

〇Dries gradually

〇Flows slowly

〇Freezes quickly

〇Warms slightly

Paragraph 6: Under very cold conditions, rocks can be shattered by ice and frost. Glaciers may form in permanently cold areas, and these slowly moving masses of ice cut out valleys, carrying with them huge quantities of eroded rock debris. In dry areas the wind is the principal agent of erosion. It carries fine particles of sand, which bombard exposed rock surfaces, thereby wearing them into yet more sand. Even living things contribute to the formation of landscapes. Tree roots force their way into cracks in rocks and, in so doing, speed their splitting. In contrast, the roots of grasses and other small plants may help to hold loose soil fragments together, thereby helping to prevent erosion by the wind.

8. The word them in the passage refers to

〇Cold areas

〇Masses of ice

〇Valleys

〇Rock debris

Paragraph 2: Hills and mountains are often regarded as the epitome of permanence, successfully resisting the destructive forces of nature, but in fact they tend to be relatively short-lived in geological terms. As a general rule, the higher a mountain is, the more recently it was formed; for example, the high mountains of the Himalayas are only about 50 million years old. Lower mountains tend to be older, and are often the eroded relics of much higher mountain chains. About 400 million years ago, when the present-day continents of North America and Europe were joined, the Caledonian mountain chain was the same size as the modern Himalayas. Today, however, the relics of the Caledonian orogeny

(mountain-building period) exist as the comparatively low mountains of Greenland, the northern Appalachians in the United States, the Scottish Highlands, and the Norwegian coastal plateau.

9. 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.

○When they are relatively young, hills and mountains successfully resist the destructive forces of nature.

○Although they seem permanent, hills and mountains exist for a relatively short period of geological time.

○Hills and mountains successfully resist the destructive forces of nature, but only for a short time.

○Hills and mountains resist the destructive forces of nature better than other types of landforms.

Paragraph 6: Under very cold conditions, rocks can be shattered by ice and frost. Glaciers may form in permanently cold areas, and these slowly moving masses of ice cut out valleys, carrying with them huge quantities of eroded rock debris. ■In dry areas the wind is the principal agent of erosion. ■It carries fine particles of sand, which bombard exposed rock surfaces, thereby wearing them into yet more sand. ■Even living things contribute to the formation of landscapes. ■Tree roots force their way into cracks in rocks and, in so doing, speed their splitting. In contrast, the roots of grasses and other small plants may help to hold loose soil fragments together, thereby helping to prevent erosion by the wind.

10. According to paragraph 6, which of the following is both a cause and result of erosion?

○Glacial activity

○Rock debris

○Tree roots

○Sand

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

Under different climatic conditions, another type of destructive force contributes to erosion. Where would the sentence best fit?

○Under very cold conditions, rocks can be shattered by ice and frost. Glaciers may form in permanently cold areas, and these slowly moving masses of ice cut out valleys, carrying with them huge quantities of eroded rock debris. Under different climatic conditions, another type of destructive force contributes to erosion. In dry areas the wind is the principal agent of erosion.■ It carries fine particles of sand, which bombard exposed rock surfaces, thereby wearing them into yet more sand. ■Even living things contribute to the formation of landscapes.■ Tree roots force their way into cracks in rocks and, in so doing, speed their splitting. In contrast, the roots of grasses and other small plants may help to hold loose soil fragments together, thereby helping to prevent erosion by the wind.

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12. Directions: Three of the answer choices below are used in the passage to illustrate constructive processes and two are used to illustrate destructive processes. Complete the

table by matching appropriate answer choices to the processes they are used to illustrate. This question is worth 3 points.

CONSTRUCTIVE PROCESSES DESTRUCTIVE PROCESSSES

●

●

●

●

●

Answer Choices：

Collision of Earth's crustal plates

Separation of continents

Wind-driven sand

Formation of grass roots in soil

Earthquakes

Volcanic activity

Weather processes

参考答案：

1. ○ 4

This is a Factual Information question asking for specific information that can be found in paragraph 1. The correct answer is choice 4. Sentence 1 of the paragraph explicitly states that Earth's landscape changes relatively rapidly compared to Earth's overall age. Choice 1, on the frequency of landscape changes, is contradicted by the paragraph. Choice 2, that landscape changes occur only at special times, is also contradicted by the paragraph. Choice 3, the frequency of landscape changes, is not mentioned.

2. ○ 2

This is a Vocabulary question. The word being tested is relatively, and it is highlighted in the passage. The correct answer is choice 2. The sentence in which relatively appears is comparing Earth's time scale to the human time scale, so "comparatively" is the correct answer.

3. ○ 2

This is an Inference question asking for an inference that can be supported by paragraph 2. The correct answer choice 2, the Himalayas arc higher than the Caledonian mountains. The paragraph states that younger mountains are general& higher than older mountains. It also states that the Himalayas are much younger than the Caledonians. Since the Himalayas are the younger range and Lounger mountain ranges are higher- than older ranges, we can infer that the younger Himalayas are higher than the older Caledonians.Choices 1 and 4 are incorrect because that euplicir1-i contradict the passage. The height of the Himalayas is an indication of their age, and the Himalayas are about the same height that the Caledonians were 400 million years ago. Choice 3 is incorrect because nothing there is nothing in the paragraph about "uniform height."

4. ○ 3

This is a Vocabulary question. The word being tested is relics, and it is highlighted in the passage. Choice 3 is the correct answer. The 1.e1ic.s of the Caledonian range are what is left of them. "Remains" means what is left of something, so it is the correct answer.

5. ○ 3

This is a Factual Information question asking for specific information that can be found in paragraph 3. The correct answer is choice 3, mountains are formed by crustal plates hitting each other. The paragraph states that mountains are formed in three ways: by, crustal plates hitting each other, by earthquakes, and by volcanoes. Choices 1,2, and 4 are not among these causes of mountain formation, so they are therefore incorrect.

6. ○ 1

This is a Rhetorical Purpose question. It asks why the author mentions "carbon dioxide" in the passage. This term is highlighted in the passage. The correct answer is choice 1; carbon dioxide is mentioned to explain the origin of a chemical that can erode rocks. The author is describing a particular cause of erosion, and the starting point of that process is carbon dioxide.

7. ○ 2

This is a Vocabulary question. The word being tested is seeps, and it is highlighted in the passage. Choice 2, "Rows slowly," is the correct answer. The sentence is describing the way in which rain moves underground from Earth's surface. It cannot do this by "drying" (choice I), "freezing" (choice 3), or "warming"(choice 4).

8. ○ 2

This is a Reference question. The word being tested is them, and it is highlighted in the passage. Choice 2, "masses of ice" is the correct answer. This is a simple pronoun-referent item. The word tlze11z refers to the glaciers that are carrying eroded rock. Notice that in this case, a whole series of words separates the pronoun from its referent.

9. ○ 2

This is a Sentence Simplification question. As with all of these items, a singlesentence in the passage is highlighted: Hills and mountains are often regarded as the epitome of permanence: successfully resisting the destructive forces of nature, but in fact they tend to be relatively shortlived in geological terms.

The correct answer is choice 2. That choice contains all of the essential information in the highlighted sentence. it omits the information in the second clause of the highlighted sentence ("successfully resisting the destructive forces of nature") because that information is not essential to the meaning. Choices 1, 3, and 1 are all incorrect because they change the meaning of the highlighted sentence. Choice 1 adds information on the age of a mountain that is not mentioned in the highlighted sentence. Choice 3 introduces information about how long mountains resist forces of nature in absolute terms; the highlighted sentence says that the resistance is relatively short in geological terms, which is an entirely different meaning. Choice 4 compares mountains to other land forms. The highlighted sentence does not make any such comparison.

10. ○ 4

This is a Factual Information question asking for specific information that can be found in paragraph 6. The correct answer is choice 4, "sand." Sentences 3 and 4 of that paragraph describe erosion in dry areas. Sand is carried by wind and bombards rock; this bombardment breaks down the rock, and, as a result, more sand is created. Thus sand is both the cause and the result of erosion, so choice 4 is correct. Glacial activity (choice 1) and tree roots (choice 3) are both mentioned only as causes of erosion. Rock debris (choice 2) is mentioned only as a result of erosion.

11. ○ 1

This is an Insert Text question. You can see the four black squares in paragraph 6 that represent the possible answer choices here. Under very cold conditions, rocks can be shattered by ice and frost. Glaciers may form in permanently cold areas, and these slowly moving masses of ice cut out valleys, carrying with them huge quantities of eroded rock debris. ■ In dry areas the wind is the principal agent of erosion. ■ It carries fine particles of sand, which bombard exposed rock surfaces, thereby wearing them into yet more sand. ■ Even living things contribute to the formation of landscapes. ■ Tree roots force their way into cracks in rocks and, in so doing, speed their splitting. In contrast, the roots of grasses and other small plants may help to hold loose soil fragments together, thereby helping to prevent erosion by the wind.

The sentence provided, "Under different climatic conditions, another type of destructive force contributes to erosion," is best inserted at square 1. Square 1 is correct because the inserted sentence is a transitional sentence, moving the discussion away from

one set of climatic conditions (cold) to another set of climatic conditions (dryness). It is at square 1 that the transition between topics takes place. Squares 2, 3, and 4 all precede sentences that provide details of dry climatic conditions. No transition is taking place at any of those places, so the inserted sentence is not needed.

12. ○Constructive processes 1 5 6; Destructive processes 3 7 This is a Fill in a Table question. It is completed correctly below. The correct choices for the "constructive processes” column are 1, 5, and 6. Choices 3 and 7 are the correct choices for the "destructive processes" column. Choices 2 and 4 should not be used in either column.