托福经典阅读练习详解 GROUNDWATER

Groundwater is the word used to describe water that saturates the ground, filling all the available spaces. By far the most abundant type of groundwater is meteoric water; this is the groundwater that circulates as part of the water cycle. Ordinary meteoric water is water that has soaked into the ground from the surface, from precipitation (rain and snow) and from lakes and streams. There it remains, sometimes for long periods, before emerging at the surface again. At first thought it seems incredible that there can be enough space in the "solid" ground underfoot to hold all this water.

The necessary space is there, however, in many forms. The commonest spaces are those among the particles—sand grains and tiny pebbles—of loose, unconsolidated sand and gravel. Beds of this material, out of sight beneath the soil, are common. They are found wherever fast rivers carrying loads of coarse sediment once flowed. For example, as the great ice sheets that covered North America during the last ice age steadily melted away, huge volumes of water flowed from them. The water was always laden with pebbles, gravel, and sand, known as glacial outwash, that was deposited as the flow slowed down.

The same thing happens to this day, though on a smaller scale, wherever a sedimentladen river or stream emerges from a mountain valley onto relatively flat land, dropping its load as the current slows: the water usually spreads out fanwise, depositing the sediment in the form of a smooth, fan-shaped slope. Sediments are also dropped where a river slows on entering a lake or the sea, the deposited sediments are on a lake floor or the seafloor at first, but will be located inland at some future date, when the sea level falls or the land rises; such beds are sometimes thousands of meters thick.

In lowland country almost any spot on the ground may overlie what was once the bed of a river that has since become buried by soil; if they are now below the water's upper surface (the water table), the gravels and sands of the former riverbed, and its sandbars, will be saturated with groundwater.

So much for unconsolidated sediments. Consolidated (or cemented) sediments, too, contain millions of minute water-holding pores. This is because the gaps among the original grains are often not totally plugged with cementing chemicals; also, parts of the original grains may become dissolved by percolating groundwater, either while consolidation is taking place or at any time afterwards. The result is that sandstone, for example, can be as porous as the loose sand from which it was formed.

Thus a proportion of the total volume of any sediment, loose or cemented, consists of empty space. Most crystalline rocks are much more solid; a common exception is basalt, a form of solidified volcanic lava, which is sometimes full of tiny bubbles that make it very porous.

The proportion of empty space in a rock is known as its porosity. But note that porosity is not the same as permeability, which measures the ease with which water can flow through a material; this depends on the sizes of the individual cavities and the crevices linking them. Much of the water in a sample of water-saturated sediment or rock will drain from it if the sample is put in a suitable dry place. But some will remain, clinging to all solid surfaces. It is held there by the force of surface tension without which water would drain instantly from any wet surface, leaving it totally dry. The total volume of water in the saturated sample must therefore be thought of as consisting of water that can, and water that cannot, drain away.

The relative amount of these two kinds of water varies greatly from one kind of rock or sediment to another, even though their porosities may be the same. What happens depends on pore size. If the pores are large, the water in them will exist as drops too heavy for surface tension to hold, and it will drain away; but if the pores are small enough, the water in them will exist as thin films, too light to overcome the force of surface tension holding them in place; then the water will be firmly held.

Paragraph 1: Groundwater is the word used to describe water that saturates the ground,filling all the available spaces. By far the most abundant type of groundwater is meteoric water; this is the groundwater that circulates as part of the water cycle. Ordinary meteoric water is water that has soaked into the ground from the surface, from precipitation (rain and snow) and from lakes and streams. There it remains, sometimes for long periods, before emerging at the surface again. At first thought it seems incredible that there can be enough space in the “solid” ground underfoot to hold all this water.

1. Which of the following can be inferred from paragraph 1 about the ground that we walk on?

〇It cannot hold rainwater for long periods of time.

〇It prevents most groundwater from circulating.

〇It has the capacity to store large amounts of water.

〇It absorbs most of the water it contains from rivers.

2. The word “ incredible ” in the passage is closest in meaning to

〇Confusing

〇Comforting

〇Unbelievable

〇Interesting

Paragraph 2: The necessary space is there, however, in many forms. The commonest spaces are those among the particles—sand grains and tiny pebbles—of loose, unconsolidated sand and gravel. Beds of this material, out of sight beneath the soil, are common. They are found wherever fast rivers carrying loads of coarse sediment once flowed. For example, as the great ice sheets that covered North America during the last ice age steadily melted away, huge volumes of water flowed from them. The water was always laden with pebbles, gravel, and sand, known as glacial outwash, that was deposited as the flow slowed down.

3. The word “out of sight” in the passage is closest in meaning to

○Far away

○Hidden

○Partly visible

○Discovered

4. According to paragraph 2, where is groundwater usually found?

○Inside pieces of sand and gravel

○On top of beds of rock

○In fast rivers that are flowing beneath the soil

○In spaces between pieces of sediment

5. The phrase “glacial outwash” in the passage refers to

○Fast rivers

○Glaciers

○The huge volumes of water created by glacial melting

○The particles carried in water from melting glaciers.

Paragraph 3: The same thing happens to this day, though on a smaller scale, wherever a sediment-laden river or stream emerges from a mountain valley onto relatively flat land, dropping its load as the current slows: the water usually spreads out fanwise, depositing the sediment in the form of a smooth, fan-shaped slope. Sediments are also dropped where a river slows on entering a lake or the sea, the deposited sediments are on a lake floor or the seafloor at first, but will be located inland at some future date, when the sea level falls or the land rises; such beds are sometimes thousands of meters thick.

6. All of the following are mentioned in paragraph 3 as places that sediment-laden rivers can deposit their sediments EXCEPT

○A mountain valley

○Flat land

○A lake floor

○The seafloor

Paragraph 4: In lowland country almost any spot on the ground may overlie what was once the bed of a river that has since become buried by soil; if they are now below the water's upper surface (the water table), the gravels and sands of the former riverbed, and its sandbars, will be saturated with groundwater.

7. The word "overlie" in the passage is closest in meaning to

○Cover

○Change

○Separate

○Surround

Paragraph 5: So much for unconsolidated sediments. Consolidated (or cemented) sediments, too, contain millions of minute water-holding pores. This is because the gaps among the original grains are often not totally plugged with cementing chemicals; also, parts of the original grains may become dissolved by percolating groundwater, either while consolidation is taking place or at any time afterwards. The result is that sandstone, for example, can be as porous as the loose sand from which it was formed.

8. The phrase "so much for" in the passage is closest in meaning to

○That is enough about

○Now let us turn to

○Of greater concern are

○This is related to

9. The word "plugged" in the passage is closet in meaning to

○Washed

○Dragged

○Filled up

○Soaked through

Paragraph 6: Thus a proportion of the total volume of any sediment, loose or cemented, consists of empty space. Most crystalline rocks are much more solid; a common exception is

basalt, a form of solidified volcanic lava, which is sometimes full of tiny bubbles that make it very porous.

Paragraph 7: The proportion of empty space in a rock is known as its porosity. But note that porosity is not the same as permeability, which measures the ease with which water can flow through a material; this depends on the sizes of the individual cavities and the crevices linking them.

10. According to paragraphs 6 and 7, why is basalt unlike most crystalline forms of rock?

〇It is unusually solid

〇It often has high porosity.

〇It has a low proportion of empty space.

〇It is highly permeable.

11. What is the main purpose of paragraph 7?

〇To explain why water can flow through rock

〇To emphasize the large amount of empty space in all rock

〇To point out that a rock cannot be both porous and permeable

〇To distinguish between two related properties of rock

Paragraph 9: The relative amount of these two kinds of water varies greatly from one kind of rock or sediment to another, even though their porosities may be the same. What happens depends on pore size. If the pores are large, the water in them will exist as drops too heavy for surface tension to hold, and it will drain away; but if the pores are small enough, the water in them will exist as thin films, too light to overcome the force of surface tension holding them in place; then the water will be firmly held.

12. 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.

〇Surface tension is not strong enough to retain drops of water in rocks with large pores but it strong enough to hold on to thin films of water in rocks with small pores.

〇Water in rocks is held in place by large pores and drains away from small size pores through surface tension.

〇Small pores and large pores both interact with surface tension to determine whether a rock will hold water as heavy drops or as a thin film.

〇If the force of surface tension is too weak to hold water in place as heavy drops, the water will continue to be held firmly in place as a thin film when large pores exist.

Paragraph 8: Much of the water in a sample of water-saturated sediment or rock will drain from it if the sample is put in a suitable dry place.■ But some will remain, clinging to all solid surfaces.■ It is held there by the force of surface tension without which water would drain instantly from any wet surface, leaving it totally dry.■ The total volume of water in the saturated sample must therefore be thought of as consisting of water that can, and water that cannot, drain away.■

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

What, then, determines what proportion of the water stays and what proportion drains away?

Where would the sentence best fit? Click on a square to add the sentence to the passage.

14. Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. This question is worth 2 points.

Much of the ground is actually saturated with water.

●

●

●

Answer choices

〇Sediments that hold water were spread by glaciers and are still spread by rivers and streams.

〇Water is stored underground in beds of loose sand and gravel or in cemented sediment.

〇The size of a saturated rock’s pores determines how much water it will retain when the rock is put in a dry place.

〇Groundwater often remains underground for a long time before it emerges again.

〇Like sandstone, basalt is a crystalline rock that is very porous.

〇Beds of unconsolidated sediments are typically located at inland sites that were once underwater.

参考答案

1. 〇 3

2. 〇 3

3. 〇 2

4. 〇 4

5. 〇 4

6. 〇 1

7. 〇 1

8. 〇 1

9. 〇 3

10. 〇 2

11. 〇 4

12. 〇 1

13. 〇 4

14. 〇1 2 3not be used in either column.