**Reading 1**

**Water Management in Early Agriculture**

**Learning Objectives**

* Explain meaning of new words
* Find evidence for the correct answer
* Understand complex sentences and analyze their structure



Step 1 : 查出单词的意思，给出派生词或词根。 1

Step 2 : 找出长难句：用蓝色标出每句的主干（主谓宾/主系表/主谓）， 用深蓝色标出每句话的连词 (并列连词、从属连词)。用**/**分意群。 1

Step 3：标出每道题的正确选项，并且在选项后面写出对应的证据是哪句话。（黄色高亮） 1

Step 4：写出这段的Main Idea ，**找出topic sentence，并概括其与上下段之间的关系**。 1

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| Paragraph 1  S1 As the first cities formed in Mesopotamia in the Middle East, probably around 3000 B.C., it became necessary to provide food for larger populations, and thus to find ways of increasing agricultural production. S2 This, in turn, led to the problem of obtaining sufficient water.    Paragraph 2  S3 Irrigation must have started on a small scale with rather simple constructions, but as its value became apparent, more effort was invested in new construction to divert more water into the canals and to extend the canal system to reach greater areas of potential farmland. S4 Because of changing water levels and clogging by waterborne particles, canals and their intakes required additional labor to maintain, besides the normal labor required to guide water from field to field. S5 Beyond this, some personnel had to be devoted to making decisions about the allocation of available water among the users and ensuring that these directions were carried out. S6 With irrigation water also came potential problems, the most obvious being the susceptibility of low-lying farmlands to disastrous flooding and the longer-term problem of salinization (elevated levels of salt in the soil). S7 To combat flooding from rivers, people from early historic times until today have constructed protective levees (raised barriers of earth) between the river and the settlement or fields to be protected. S8 This, of course, is effective up to a certain level of flooding but changes the basic water patterns of the area and can multiply the damage when the flood level exceeds the height of the levee.  Main Idea ？ | New Words【only the difficult one】  clogging  waterborne  personnel  allocation  susceptibility  salinization  combat  levees  multiply  exceeds  agricultural  in turn  sufficient  Irrigation  constructions  apparent  divert  canals  extend  1. All of the following are mentioned in paragraph 2 as operations involved in the Mesopotamian irrigation system EXCEPT  A. determining how much irrigation water should be distributed to various farmers   1. widening existing canals so they could hold more water 2. removing undesirable materials from the intakes of irrigation canals 3. building new canals so irrigation water could be transported to distant areas   2. According to paragraph 2, protective levees can have which of the following disadvantages?  A. They can greatly increase the destruction caused by floodwaters when floodwaters are higher than the levee.  B. They can fail even when the flood level remains below the height of the levee.  C. They can lead over time to a serious salinization problem.  D. They can cause damaging floods to occur more frequently by changing basic water patterns.    3. Paragraph 2 suggests that irrigation increased the likelihood of destructive floods because  A. irrigated fields were often in locations that tended to flood naturally   1. the canal intakes for irrigation water often did not work 2. most irrigation canals were too narrow and thus overflowed 3. levees built to protect irrigation systems required maintenance   4. The word “potential” in the passage is closet in meaning to  A. serious  B. basic  C. new  D. possible |

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| Paragraph 3  S1 Salinization is caused by an accumulation of salt in the soil near its surface. S2This salt is carried by river water from the sedimentary rocks in the mountains and deposited on the Mesopotamian fields during natural flooding or purposeful irrigation. S3 Evaporation of water sitting on the surface in hot climates is rapid, concentrating the salts in the remaining water that then descends through the soil to the underlying water table. S4 In southern Mesopotamia, for example, the natural water table comes to within roughly six feet of the surface. S5 Conditions of excessive irrigation bring the water table to eighteen inches, and water can rise further to the root zone, where the high concentration of salts would kill most plants.  Main Idea ？ | New Words  Salinization  accumulation  sedimentary rocks  deposited  descends  underlying  water table  excessive irrigation  concentration  5. The word “accumulation” in the passage is closet in meaning to  A. distribution   1. mixture 2. buildup 3. exchange     6. According to paragraph 3, excessive irrigation can destroy crops by  A. raising salty water to the level of the roots   1. forcing the roots of plants to grow close to the surface 2. taking the place of some natural flooding 3. creating salt deposits on the surface of the soil |

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| Paragraph 4  S1 Solutions for salinization were not as straightforward as for flooding, but even in ancient times it was understood that the deleterious effects of salinization could be minimized by removing harmful elements through leaching the fields with additional fresh water, digging deep wells to lower the water table, or instituting a system of leaving fields uncultivated. S2 The first two cures would have required considerable labor, and the third solution would have led to diminished productivity, not often viewed as a likely decision in periods of growing population. S3 An effective irrigation system laid the foundation for many of the world’s early civilizations, but it also required a great deal of labor input.  Main Idea ？ | New Words  straightforward  deleterious  minimize  leaching  instituting  uncultivated  laid the foundation  civilizations  7. The word “straightforward” in the passage is closet in meaning to  A. successful   1. simple 2. common 3. complex     8. According to paragraph 4, which of the following is true of the more-likely-used solutions to the problem of salinization?  A. They resulted in a decrease in the amount of food that was produced.   1. They succeeded only on areas where the natural water table was especially low. 2. They often demanded much time and effort on the part of their users. 3. They often led to other technological advances. |

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| Paragraph 5  S1 Growing agrarian societies often tried to meet their food-producing needs by farming less-desirable hill slopes surrounding the favored low-lying valley bottoms. S2 Since bringing irrigation water to a hill slope is usually impractical, the key is effective utilization of rainfall. S3 Rainfall either soaks into the soil or runs off of it due to gravity. S4 A soil that is deep, well-structured, and covered by protective vegetation and much will normally absorb almost all of the rain that falls on it, provided that the slope is not too steep. S5 However, soils that have lost their vegetative cover and surface mulch will absorb much less, with almost half the water being carried away by runoff in more extreme conditions. S5This runoff carries with it topsoil particles, nutrients, and humus (decayed vegetable matter) that are concentrated in the topsoil. S5The loss of this material reduces the thickness of the rooting zone and its capacity to absorb moisture for crop needs.  Main Idea ？ | New Words  agrarian  impractical  utilization  absorb  humus  capacity  moisture  9. According to paragraph 5, which of the following was the main challenge faced by early agricultural societies that wanted to grow crops on hill slopes?  A. Getting enough irrigation water to the hill slope   1. Growing crops without disturbing the natural vegetative cover 2. Retaining rainwater and thus preventing excessive runoff 3. Identifying crops that do not need a thick rooting zone   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. However, soils that are unable to absorb much water experience massive runoff during heavy rains.   1. However, where neither protective vegetation nor mulch covers the soil, much rainwater can be lost to runoff. 2. However, on extremely steep slopes there is no vegetative cover or mulch to prevent runoff. 3. However, in more extreme conditions water that runs off can carry away the vegetative cover and the surface mulch     11. The word “impractical” in the passage is closet in meaning to  A. unnecessary   1. unsafe 2. unrealistic 3. unpredictable |

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| Paragraph 6  S1 The most direct solution to this problem of slope runoff was to lay lines of stones along the contours of the slope and hence, perpendicular to the probable flow of water and sediment. S2These stones could then act as small dams, slowing the downhill flow of water and allowing more water to infiltrate and soil particles to collect behind the dam. S3This provided a buildup of sediments for plants and improved the landscape’s water-retention properties.  Main Idea ？ | New Words  contours  perpendicular  sediment  infiltrate  buildup  water-retention  properties  12. Which of the following best describes how paragraph 6 relates to paragraph 5?  A. Paragraph 6 describes how the solution to a problem identified in paragraph 5 created unexpected benefits.   1. Paragraph 6 compares two possible solutions to a problem described in paragraph 5. 2. Paragraph 6 explains how the attempt to solve a problem introduced in paragraph 5 led to more difficult problems. 3. Paragraph 6 explains one way in which a difficulty described in paragraph 5 was resolved. |

Paragraph 3

Salinization is caused by an accumulation of salt in the soil near its surface. ■This salt is carried by river water from the sedimentary rocks in the mountains and deposited on the Mesopotamian fields during natural flooding or purposeful irrigation. Evaporation of water sitting on the surface in hot climates is rapid, concentrating the salts in the remaining water that then descends through the soil to the underlying water table. ■In southern Mesopotamia, for example, the natural water table comes to within roughly six feet of the surface. ■Conditions of excessive irrigation bring the water table to eighteen inches, and water can rise further to the root zone, where the high concentration of salts would kill most plants.■

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

**Natural flooding, however, does not raise the water table nearly as much and thus does not have these sorts of consequences.**

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



Drag your choices to the spaces where they belong. To review the passage, click on **View Text**.

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| As cities emerged and populations grew in Mesopotamia, more water had to be provided to increase agricultural production.  ●  ●  ● |

1. Early on, irrigation was recognized as a valuable practice, even though it was labor-intensive and brought with it problems of salinization and damaging floods.
2. Levees were the major means of protection against flooding, while leaching with added water and lowering the water table helped to control salinization.
3. Because of the enormous amount of labor involved in irrigating fields, farming was increasingly moved to hill slopes, where irrigation systems required less labor.
4. The mountain water that was used to irrigate farmland in Mesopotamia was exceptionally high in salt, causing rapid salinization of the soil.
5. The practice of leaving fields uncultivated periodically was used primarily by societies lacking a large labor force.
6. As cultivation was extended to hill slopes, methods were developed to better retain water from rainfall for crops growing on hillsides.

**Essay Structure ： Problems & Solutions**

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| Problems | Solutions |
| Para 1&2： Flooding |  |
| Para 3 : Salinization |  |
| Para 4: farming less-desirable hill slopes |  |
| Para 5 ：slope runoff |  |