

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

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## Packet: Water Cycle

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### CLASS NOTES

- Ever since the outgassing of water vapor \_\_\_\_\_ years ago, Earth has been \_\_\_\_\_ its water supply

- Earth's has not gained or lost water since

- The Water Cycle - \_\_\_\_\_

- The water cycle is fueled by \_\_\_\_\_ [insolation] and gravity

- Evaporation - \_\_\_\_\_

- Condensation - \_\_\_\_\_

- Transpiration - \_\_\_\_\_

- Precipitation - \_\_\_\_\_

- Examples: rain, snow, sleet and hail

- When precipitation falls it can:

- Be stored on land surfaces as ice and snow

- \_\_\_\_\_ into the upper parts of the lithosphere

- Flow over Earth's surface as \_\_\_\_\_

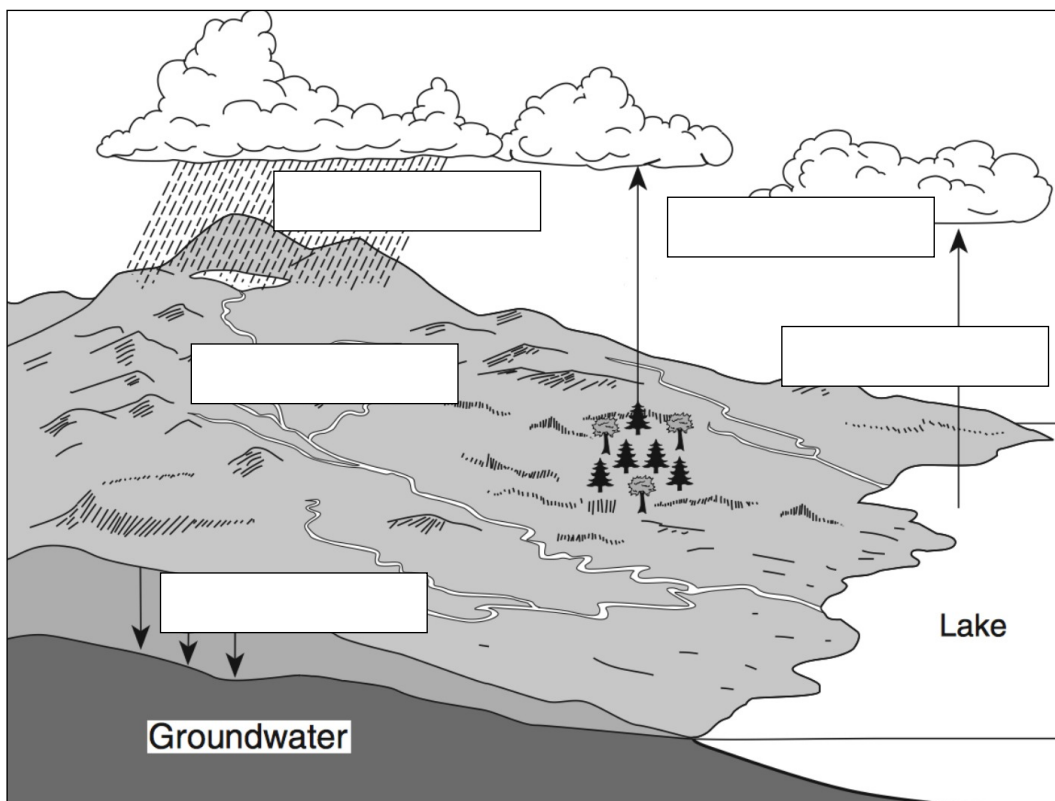
- Be \_\_\_\_\_ or undergo \_\_\_\_\_

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- Infiltration - \_\_\_\_\_  
\_\_\_\_\_
  
- Factors Affecting Infiltration:
  1. Slope of the Land - steeper slopes do not give time for water to infiltrate the ground
  2. Degree of Saturation - the amount of water already in the ground
  3. Porosity - \_\_\_\_\_  
\_\_\_\_\_
  4. Permeability - \_\_\_\_\_  
\_\_\_\_\_
  5. Capillarity - \_\_\_\_\_  
\_\_\_\_\_
  6. Vegetation - plants absorb water from the ground



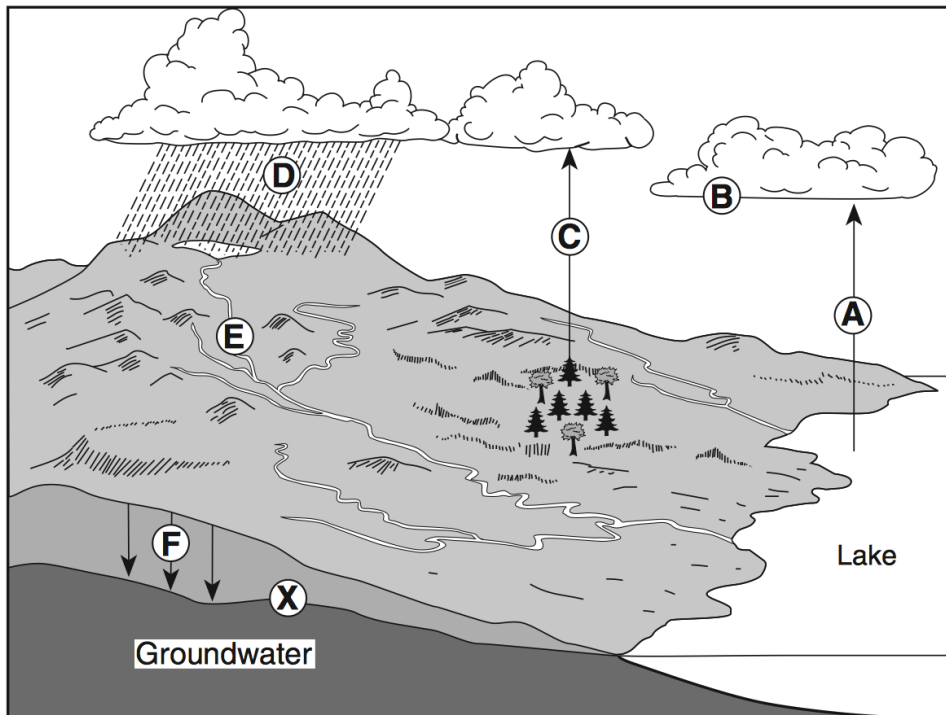
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## PART I QUESTIONS: MULTIPLE CHOICE

Base your answers to questions 1 through 3 on the diagram below, which shows a model of the water vapor cycle. Letters A through F represent some processes of the water cycle. Letter X indicates the top of the underground zone that is saturated with water.



1. Which process is represented by letter F?
  - a. capillarity
  - b. infiltration
  - c. condensation
  - d. vaporization
2. What does letter X represent?
  - a. the water table
  - b. a flood plain
  - c. sea level
  - d. impermeable rock
3. If the surface soil is saturated and precipitation increases, there will be
  - a. a decrease in the amount of groundwater
  - b. a decrease in the surface elevation of the lake
  - c. an increase in the rate of capillarity
  - d. an increase in the amount of runoff

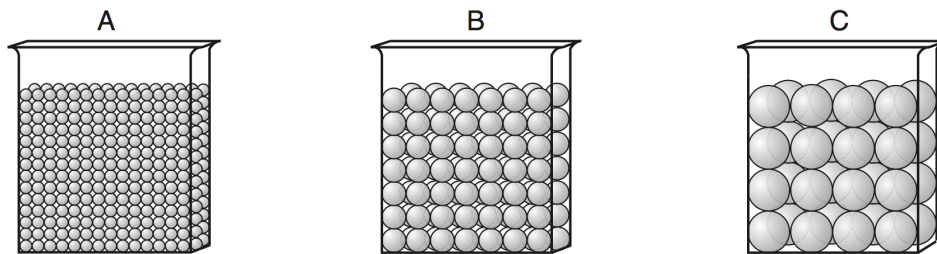
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4. During a rainstorm, when soil becomes saturated, the amount of infiltration
  - a. decreases and runoff decreases
  - b. decreases and runoff increases
  - c. increases and runoff decreases
  - d. increases and runoff increases
  
5. A paved blacktop parking lot was built on what was once a soil-covered field. This area will now experience increased runoff when rain occurs because the paved parking lot has
  - a. less capillarity
  - b. greater infiltration
  - c. less permeability
  - d. greater porosity
  
6. Compared to an area with gentle slopes, an area with steeper slopes most likely has
  - a. less infiltration and more runoff
  - b. less infiltration and less runoff
  - c. more infiltration and more runoff
  - d. more infiltration and less runoff

Base your answers to questions 7 through 8 on the diagram below, which shows two identical containers filled with uniform particles that were sorted by size.



(Not drawn to scale)

7. Which characteristic is most likely the same for these particle-filled containers?
  - a. infiltration rate
  - b. water retention
  - c. capillarity
  - d. porosity
  
8. Water will be able to infiltrate each of these sediment samples if the sediment is?
  - a. saturated and impermeable
  - b. saturated and permeable
  - c. unsaturated and impermeable
  - d. unsaturated and permeable

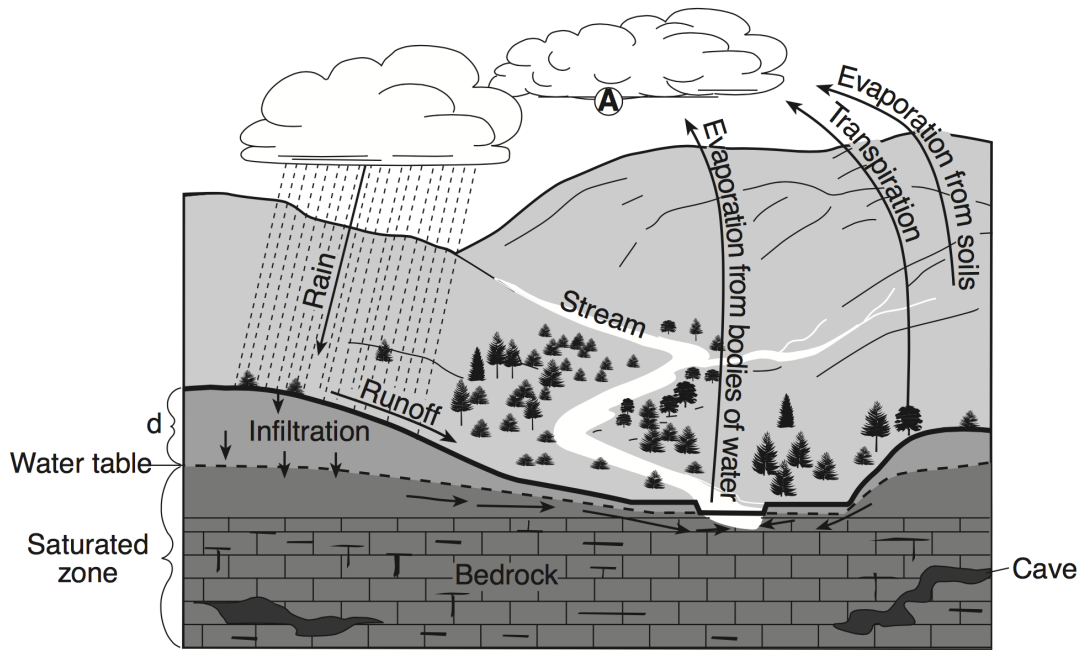
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## PART II QUESTIONS: FREE RESPONSE

Base your answers to questions 9 through 10 on the diagram below that represents a portion of a stream and its surrounding bedrock. The arrows represent the movement of water molecules by the processes of the water cycle. The water table is indicated by a dashed line. Letter A represents a water cycle process. Letter d represents the distance between the water table and the land surface.



9. Identify water cycle process A, which produces cloud droplets.

10. Describe the permeability, porosity and slope that allow the most infiltration of rainwater.