

Quiz: Cycling of Matter and Energy in Ecosystems

Read each question. Circle the letter of the correct answer.

1. Elements such as carbon can move through the environment and organisms in a cycle because living and nonliving things interact in _____.
 - A. cells
 - B. species
 - C. organisms
 - D. ecosystems
2. The carbon cycle makes carbon compounds continuously available in an ecosystem and delivers _____.
 - A. water to all organisms
 - B. light energy to autotrophs
 - C. carbon dioxide to animals within the ecosystem
 - D. chemical energy to organisms within the ecosystem
3. Which two biogeochemical cycles depend directly on photosynthesis?
 - A. the oxygen cycle and the carbon cycle
 - B. the water cycle and the oxygen cycle
 - C. the carbon cycle and the phosphorus cycle
 - D. the nitrogen cycle and the phosphorus cycle
4. Fossil fuels are part of which of these cycles?
 - A. carbon
 - B. oxygen
 - C. nitrogen
 - D. phosphorus
5. What happens during the process of nitrogen fixation?
 - A. Bacteria change ammonium into nitrate.
 - B. Bacteria grow on nodules on plant roots.
 - C. Bacteria convert gaseous nitrogen into ammonia.
 - D. Bacteria absorb ammonia and excrete ammonium.
6. Bacteria are important in the nitrogen cycle because they _____.
 - A. produce sugars that plants can use
 - B. decay and eventually form fossil fuels
 - C. respire, returning carbon dioxide into the atmosphere
 - D. help convert nitrogen into a form that organisms can use
7. Which process is part of the hydrologic cycle?
 - A. nitrification
 - B. transpiration
 - C. sedimentation
 - D. decomposition
8. Transpiration in trees is a part of which cycle?
 - A. water cycle
 - B. carbon cycle
 - C. nitrogen cycle
 - D. phosphorous cycle

9. Which of these is common to the carbon cycle, the nitrogen cycle, and the water cycle?
- A. The largest reserves of the substance are always in organisms.
 - B. The substance must pass through organisms in order to complete its cycle.
 - C. The ocean is a reservoir for all three substances.
 - D. The substance is required by all living things and is involved in many processes that occur in all living things.
10. When humans and animals die, phosphorus _____.
- A. returns to the soil
 - B. is dissolved in water
 - C. evaporates into the atmosphere
 - D. is decomposed by decomposers

Read each statement. Write your answer on the lines.

11. What is the source of energy for the water cycle?

12. How do animals participate in the carbon and oxygen cycles?

13. How does photosynthesis in plants affect the carbon cycle?

14. In the nitrogen cycle, how is nitrogen gas converted into form that can be used by organisms?

15. How do animals participate in the phosphorus cycle?
