

Chapter 4 Quiz

Part A: Modified True/False

Indicate whether each statement is true or false. If the statement is false, change the statement to make it true.

____ 1. Carbon is important to living organisms because it is the basis for most biological molecules.

____ 2. During photosynthesis, plants convert atmospheric carbon into proteins.

____ 3. The nitrogen cycle has no atmospheric component.

Part B: Completion

Complete the sentences below.

4. During _____, organisms use oxygen to release the energy in carbohydrates.

5. Living organisms need _____ because it makes up part of the backbone of DNA molecules and is an important part of cell membranes.

6. Nitrogen-fixing bacteria convert _____ into _____, which other organisms can use.

Part C: Multiple Choice

Circle the letter beside the answer that best completes the statement or answers the question.

7. Which of the following processes reduces the availability of phosphorus for living things?

A. weathering of rock

C. production of fertilizer

B. agricultural runoff

D. burial of marine skeletons

8. How do consumers get the nitrogen their bodies need?

A. by eating other organisms

B. by breathing the nitrogen in the air

C. through symbiosis with nitrogen-fixing bacteria

D. through the uptake of nitrogen-containing fertilizers

Chapter 4 Quiz (continued)

9. Which of the following elements is required for the formation of nucleic acids and proteins, but not sugars?
- A. carbon
 - B. oxygen
 - C. nitrogen
 - D. hydrogen
10. Which of the following processes removes carbon from the atmosphere?
- A. cutting down trees
 - B. burning fossil fuels
 - C. decomposition of dead organisms
 - D. photosynthesis in ocean phytoplankton
11. All of the following materials are found in the human body. Which of them is not part of the phosphorus cycle?
- A. DNA
 - B. bones
 - C. cell membranes
 - D. starch molecules
12. Which of the following substances is an inorganic compound that is part of the nitrogen cycle?
- A. water
 - B. glucose
 - C. methane
 - D. ammonia

Part D: Short Answer

13. Describe the role of decomposers in the carbon, nitrogen, and phosphorus cycles.

14. Describe how fertilizers applied to crops on land can cause algal blooms in oceans and freshwater bodies.
