

Pretest: Matter and Energy in Living Systems

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

1. What is the term for an organism that makes its own source of chemical energy?
 - A. chloroplast
 - B. decomposer
 - C. producer
 - D. protist

2. The part of cellular respiration in which glucose is broken down is called _____.
 - A. glycolysis
 - B. photosynthesis
 - C. electron transport
 - D. aerobic respiration

3. Which of these is a reactant in photosynthesis?
 - A. O₂
 - B. CO₂
 - C. COOH
 - D. C₆H₁₂O₆

4. The basis for the energy in an ecosystem is provided by _____.
 - A. chemosynthesis
 - B. consumers
 - C. heterotrophs
 - D. producers

5. Which phrase describes the function of mitochondria?
 - A. packages proteins
 - B. breaks down chemicals
 - C. supplies energy to the cell
 - D. fluid-filled sac used for storage

6. What do all the biotic and abiotic factors in a given area make up?
 - A. a habitat
 - B. a population
 - C. a community
 - D. an ecosystem

7. Through photosynthesis, plants convert energy from sunlight into _____.
 - A. light energy
 - B. thermal energy
 - C. chemical energy
 - D. mechanical energy

8. Which organisms help convert gaseous nitrogen into ammonia in the nitrogen cycle?
 - A. bacteria
 - B. grasses
 - C. squirrels
 - D. trees

9. What do chloroplasts and mitochondria have in common?
 - A. production of ATP
 - B. presence in all cells
 - C. digestion of cell wastes
 - D. absorption of light energy

10. Which phrase about fermentation is correct?
 - A. is an aerobic process
 - B. occurs only in bacteria
 - C. takes place without oxygen
 - D. uses electron transport chain

11. Food webs are models that show _____.

- A. stored energy in food chains
- B. networks of feeding relationships
- C. only primary consumers in an ecosystem
- D. one sequence of producers and consumers

12. Where does most of the phosphorus cycle take place?

- A. in the atmosphere
- B. close to rocky terrain
- C. on fungi near plant roots
- D. at and below ground level

14. Refer to the illustration.

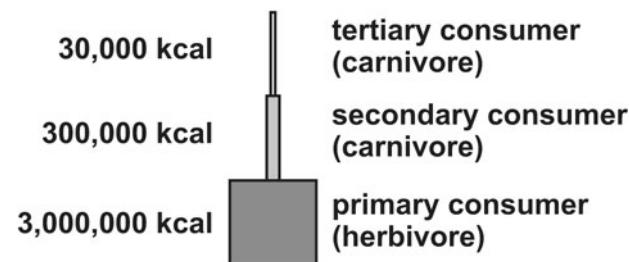
At each trophic level, the energy stored in the organisms in that level is about _____.

- A. 10% of the energy in the level above it
- B. 10% of the energy in the level below it
- C. 50% of the energy in the level below it
- D. 100% of the energy in the level below it

13. Which of these statements best describes cellular respiration?

- A. Sunlight and carbon dioxide are used to make ATP.
- B. ATP and oxygen are used to make sugars and starches.
- C. ATP and carbon dioxide are used to make ADP and water.
- D. Carbon-based molecules from food and oxygen are used to make ATP.

Energy Pyramid



15. Look at this diagram.

What does this diagram show?

- A. the water cycle
- B. the carbon cycle
- C. the oxygen cycle
- D. the nitrogen cycle

