

Pretest: Chemistry in Living Systems

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

1. Which element are many of the molecules composing living things based on?
 - A. carbon
 - B. oxygen
 - C. nitrogen
 - D. hydrogen

2. What does an atom share when it bonds with another atom?
 - A. ions
 - B. protons
 - C. neutrons
 - D. electrons

3. Which of these includes sugars and starches?
 - A. proteins
 - B. carbohydrates
 - C. phospholipids
 - D. unsaturated fatty acids

4. Which is a major byproduct of respiration?
 - A. sugar
 - B. oxygen
 - C. nitrogen
 - D. carbon dioxide

5. What is the smallest basic unit of matter?
 - A. atom
 - B. cell
 - C. molecule
 - D. compound

6. What is a substance that is composed of only one type of atom?
 - A. cell
 - B. element
 - C. molecule
 - D. compound

7. Which of these is formed when an atom gains or loses electrons?
 - A. ion
 - B. element
 - C. molecule
 - D. compound

8. Which of these is what atoms are not composed of?
 - A. protons
 - B. neutrons
 - C. electrons
 - D. chemical bonds

9. What is the main function of phospholipids in a cell?
 - A. form the cell membrane
 - B. produce energy for the cell
 - C. contain genetic information
 - D. increase the rate of reactions

10. Which of these describes atoms?

- A.** parts of a nucleus
- B.** single-celled organism
- C.** positively charged particles
- D.** smallest basic unit of matter

11. What is a compound?

- A.** a molecule of two oxygen atoms
- B.** two atoms of a single element bonded together
- C.** separate atoms of multiple elements in varying ratios
- D.** atoms of different elements bonded together in certain ratios

12. What property of the carbon atom makes it unique?

- A.** ionic properties
- B.** bonding properties
- C.** hydrogen bonding strength
- D.** six outer unpaired electrons

13. Which of these is true for the electrons of an atom?

- A.** have a positive charge
- B.** found in the nucleus along with the protons
- C.** found in the space surrounding the nucleus
- D.** are attached to the positive charge of neutrons

14. Which of these is what the law of conservation of energy says cannot be done with energy?

- A.** changed from one form to another
- B.** taken from the surroundings in a reaction
- C.** released into the surroundings in a reaction
- D.** created or destroyed in a chemical reaction

15. Which of these is how enzymes affect chemical reactions in living organisms?

- A.** weakening bonds in reactants
- B.** increasing the temperature range
- C.** changing the direction of a reaction
- D.** breaking down molecules into starch