

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