

Biology Chapter 3 Study Guide

1. The three particles that make up atoms are
 - a. Protons neutrons, and isotopes
 - b. Neutrons, isotopes, and electrons
 - c. Positives, negatives, and neutrals
 - d. Protons, neutrons, and electrons
2. What are found in the space surrounding the nucleus of an atom?
 - a. Protons
 - b. Electrons
 - c. Neutrons
 - d. Ions
3. Isotopes are atoms of the same element with the same number of protons and a different number of
 - a. Electrons
 - b. Molecules
 - c. Neutrons
 - d. Ions
4. Which of the following is a substance formed by the chemical joining of two or more elements in definite amounts?
 - a. Compound
 - b. Isotope
 - c. Nucleus
 - d. Enzyme
5. What type of ion forms when an atom loses electrons?
 - a. Neutral
 - b. Positive
 - c. Negative
 - d. Radioactive
6. When a sugar is dissolved in water, water is the
 - a. Reactant
 - b. Solution
 - c. Solute
 - d. Solvent
7. While preparing a cell culture, a scientists places a colony of bacteria into distilled water and stirs it. This mixture of water and living cells would best be called
 - a. A solution
 - b. A Suspension
 - c. A Buffer
 - d. An Adhesion

8. A map of eastern North America, showing the pH of rainfall in various states indicates that the pH of rain in New York State varies from 4.22 to 4.40. According to these figures, the most acidic rainfall in New York State has a pH of
- 4.22
 - 4.30
 - 4.35
 - 4.40
9. Which of the following is NOT a function of proteins?
- Store and transmit genetic information
 - Help to fight disease
 - Control the rate of reactions
 - Move substances into or out of cells
10. What is the process that changes one set of chemicals into another set of chemicals?
- Cohesion
 - Hydrogen bonding
 - Chemical reaction
 - Dissolving
11. The energy needed to get a reaction started is the
- Adhesion energy
 - Activation energy
 - Cohesion energy
 - Chemical energy
12. Which of the following statements is true about catalysts?
- Catalysts slow down the rate of chemical reactions
 - All catalysts are enzymes
 - Catalysts are used during a chemical reactions
 - Catalysts lower the activation energy of a chemical reaction.
13. If an atom contains 3 protons, 4 neutrons, and 3 electrons, its mass number is
- 3
 - 4
 - 7
 - 11
14. If an atom contains 11 protons and 12 neutrons, its atomic number is
- 1
 - 11
 - 12
 - 23
15. Which of the following makes up a molecule of water?
- One atom of hydrogen and one atom of oxygen
 - One atom of sodium and one atom of chlorine
 - One atom of hydrogen and two atoms of oxygen

- d. Two atoms of hydrogen and one atom of oxygen
16. A covalent bond is formed as a result of
- a. Transferring electrons
 - b. Sharing electrons
 - c. Transferring protons
 - d. Sharing protons
17. Water molecules are polar, with the
- a. Oxygen side being slightly positive and the hydrogen side being slightly negative
 - b. Oxygen and hydrogen sides being slightly positive
 - c. Oxygen and hydrogen sides being slightly negative
 - d. Oxygen side being slightly negative and the hydrogen side being slightly positive
18. If you stir salt into boiling water, you produce a
- a. Mixture called a suspension
 - b. Mixture called a solution
 - c. Solution and suspension
 - d. Mixture only
19. A substance with a pH of 3 is called
- a. An acid
 - b. A base
 - c. Water
 - d. A suspension
20. Why is carbon so special compared to other elements?
- a. Carbon atoms can bond to one another and form a lot of different structures
 - b. Carbon atoms can form quadruple bonds
 - c. Only carbon atoms can form covalent bonds with oxygen and hydrogen
 - d. Only carbon atoms can be dissolved in water solutions and suspensions
21. In chemical reactions, atoms are
- a. Created
 - b. Destroyed
 - c. Rearranged
 - d. Neutralized
22. When hydrogen and oxygen combine to form water, water is
- a. A product
 - b. A reactant
 - c. An enzyme
 - d. A catalyst

- Proton-
- Neutron-
- Electron-
- Isotope-
- Compound-
- Element-
- Covalent Bond-
- Ionic Bond-
- Chemical Reaction-
- Catalyst-
- Enzymes-

- Cohesion-
- Adhesion-
- Solution-
- Solvent-
- Acid –
- Base-
- Buffer-
- Carbohydrates-
- Lipids-
- Nucleic Acids-
- Proteins-

