Name Period Date

Chemical Interactions Study Guide

 1. In chemical reactions, what does the Law of Conservation mean?

 a. Matter is not created or destroyed

 b. The total mass of the reactants is greater than the total mass of the products

 c. The total mass of the reactants is less than the total mass of the products

 d. Matter is not changed by rearranging the atoms

 2. When a chemical reaction takes place in an open system,

 a. matter cannot move at all

 b. matter can enter from the surroundings but cannot escape to the surroundings

 c. matter is not allowed to enter from or escape to the surroundings

 d. matter can enter from or escape to the surroundings

 3. Neutralization is a reaction between a(n)

 a. acid and metal c. base and a salt

 b. acid and base d. salt and water

 4. What does a neutralization reaction produce?

 a. acids c. water and salt

 b. bases d. carbonated water

 5. The substances listed on the left side of a chemical equation are the

 a. products c. precipitates

 b. reactants d. coefficients

 6. Normal rainfall is slightly acidic, which means its pH must be

 a. less than 2 c. between 7 and 9

 b. between 5 and 7 d. between 9 and 14

 7. The Law of Conservation of Mass is true

 a. only for reactions in open systems

 b. only for reactions in closed systems

 c. for reactions in both open and closed systems but cannot be measured in open systems

 d. for no reactions at all

 8. When an atom loses an electron, it becomes a

 a. positive ion c. neutral ion

 b. negative ion d. neutral atom

 9. Which of the following terms means that metals can be rolled into thin sheets

 a. polar c. ductile

 b. alloy d. malleable

 10. Which group of elements shares characteristics with both metals and nonmetals?

 a. salts c. metalloids

 b. halogens d. lanthanides

 11. Which particles in atoms have a negative charge?

 a. electrons c. neutrons

 b. protons d. nucleus

 12. In a neutral atom, the number of protons equals the number of

 a. electrons c. neutrons

 b. protons d. nucleus

 13. The elements in a column (in the same family group) of the periodic table

 a. are in the same period

 b. have the same atomic mass

 c. have similar properties

 d. have very similar chemical symbols

 14. These two parts of the atom are about the same mass

 a. nucleus and neutrons c. protons and neutrons

 b. protons and electrons d. protons and nucleus

 15. What happens if you change the number of protons in an atom?

 a. It makes an ion c. It makes a molecule

 b. It makes an isotope d. It makes a new element

 16. The atomic number is the

 a. number of protons in an atom

 b. number of neutrons in an atom

 c. number of protons and neutrons in an atom

 d. number of nuclei in an atom

 17. If you were looking for a nonmetal on the periodic table you would look

 a. on the left side of the periodic table

 b. on the stair step of the periodic table

 c. on the right side of the periodic table

 d. in the middle of the periodic table

 18. Each row of a periodic table is called a

 a. group c. family

 b. period d. alkaline earth metal

 19. Which is a property of metals?

 a. brittle c. poor conductors

 b. powdery d. ductile

**Answer the following on a separate sheet of paper and attach it to your study guide:**

20. Draw a labeled diagram of the pH scale

21. How can you find the number of protons that are in an atom?

22. How can you find the number of electrons that are in an atom?

23. How can you find the number of neutrons in an atom?

24. How is an ion different from a neutral atom?

25. List 4 properties of metals.

26. List 4 properties of nonmetals.