Name _____ Class _____ Date _____

Skills Worksheet

Vocabulary and Section Summary B

Chemical Formulas and Equations

VOCABULARY

After you finish reading the section, try this puzzle! Use the definitions below to unscramble the vocabulary words.

1. a substance that forms in a chemical reaction

DORCUTP product

2. a combination of chemical symbols and numbers used to represent a substance

HACCILME AFLOUMR chemical formula

3. a representation of a chemical reaction that uses symbols to show the relationship between the reactants and the products

LEHCMACI NOQTEAUI chemical equation

4. a substance or molecule that participates in a chemical reaction

AANETTCR reactant

5. law that states that mass cannot be created or destroyed in ordinary chemical and physical changes

WAL FO VACESRONNOIT FO SAMS the law of conservation of mass

SECTION SUMMARY

Read the following section summary.

- A chemical formula uses symbols and subscripts to describe the makeup of a compound.
- Chemical formulas can often be written from the names of covalent and ionic compounds.
- A chemical equation uses chemical formulas, chemical symbols, and coefficients to describe a reaction.
- A balanced equation has the same numbers and kinds of atoms on each side of the equation.
- A balanced equation shows the law of conservation of mass: mass is neither created nor destroyed during ordinary physical and chemical changes.

Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading B

Section: Ionic and Covalent Compounds

b.

1. What is a chemical bond?
- **a.** the outermost energy level of an atom
- **b.** the interaction that holds atoms and ions together
- **c.** a repeating three-dimensional pattern
- **d.** a positively charged ion

valence electrons

2. What are the electrons found in the outermost energy levels of an atom called?
- **a.** valence electrons
- **b.** ionic electrons
- **c.** covalent electrons
- **d.** compound electrons

IONIC COMPOUNDS AND THEIR PROPERTIES

oppositely charged ion

3. An ionic bond is an attraction between
- **a.** positively charged ions.
- **b.** oppositely charged ions.
- **c.** negatively charged ions.
- **d.** metallic ions.

Na Cl Na

positively charged

4. When a metal meets a nonmetal, the metal atoms become
- **a.** positively charged.
- **b.** neutral.
- **c.** negatively charged.
- **d.** chemically charged.

Na Cl Cl

negatively charged

5. When a metal meets a nonmetal, the nonmetal atom becomes
- **a.** positively charged.
- **b.** neutral.
- **c.** negatively charged.
- **d.** chemically charged.

chlorine

6. Table salt is formed when an electron is transferred from a sodium atom to a
- **a.** metal atom.
- **b.** chlorine atom.
- **c.** nonmetal atom.
- **d.** positively charged atom.

at room temperature

7. Ionic compounds tend to be brittle solids
- **a.** at room temperature.
- **b.** at high temperatures.
- **c.** at any temperature.
- **d.** when wet.

b.

8. In a crystal lattice, each ion is bonded to the
- **a.** pattern it is made with.
- **b.** surrounding ions of the opposite charge.
- **c.** surrounding ions of the same charge.
- **d.** crystal's edge.

breaks apart

9. When an ionic compound is hit, the pattern shifts, ions repel each other, and the crystal
- **a.** becomes more solid.
- **b.** forms a new lattice.
- **c.** breaks apart.
- **d.** becomes bonded.

a high melting point

10. Because strong ionic bonds hold ions together, ionic compounds have
- **a.** a low melting point.
- **b.** a lukewarm melting point.
- **c.** a high melting point.
- **d.** a variable melting point.

in water

11. Many ionic compounds dissolve easily
- **a.** in air.
- **b.** at high temperatures.
- **c.** in water.
- **d.** in electric current.

12. When an ionic compound dissolves in water, why can it conduct electric current?

The electric current is the motion of the positive and negative ions in the water (aqueous aq) as they freely move to the opposite charged metal plates or wires.

COVALENT COMPOUNDS AND THEIR PROPERTIES

electrons

13. Covalent compounds are formed when atoms share
- **a.** uncharged particles.
- **b.** neutrons.
- **c.** protons.
- **d.** electrons.