Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading A

Section: Electrons and Chemical Bonding

COMBINING ATOMS THROUGH CHEMICAL BONDING

_____ **1.** Which of the following substances results from combining atoms of carbon, hydrogen, and oxygen?

a. sugar
b. salt
c. water
d. sulfuric acid

_____ **2.** Which of the following is NOT true about electrons when chemical bonds form?

a. Electrons are shared.
b. Electrons are lost.
c. Electrons are destroyed.
d. Electrons are gained.

_____ **3.** Which of the following is an interaction that holds two atoms together?

a. chemical hold
b. chemical bond
c. chemical interaction
d. bond of chemicals

4. The joining of atoms to form new substances is called _____.

5. An explanation of a phenomenon that is based on observation, experimentation, and reasoning is a(n) _____.

6. People can use _____ to discuss theories of how and why atoms form bonds.

ELECTRON NUMBER AND ORGANIZATION

_____ **7.** How can you determine the number of electrons in an atom?

a. valence number
b. atomic number
c. chemical number
d. ionic number

_____ **8.** How many valence electrons are in an oxygen atom?

a. 2
b. 4
c. 6
d. 8

_____ **9.** What do elements within a group number have the same number of?

a. valance electrons
b. protons
c. neutrons
d. atoms

Match the correct description with the correct term. Write the letter in the space provided.

_____**10.** an electron in the outermost energy level

_____**11.** number of protons in an atom

_____**12.** family on the periodic table to which an element belongs

a. group

b. valence electron

c. atomic number

13. Which electrons in an atom make chemical bonds? Why?

_____

_____

14. How can the periodic table help you determine the number of valence electrons?

_____

_____

TO BOND OR NOT TO BOND

_____**15.** What determines whether an atom will form bonds?

a. number of electrons
b. number of valence electrons
c. number of protons
d. number of neutrons

_____**16.** Which group on the periodic table contains elements that do not normally form chemical bonds?

a. Group 2
b. Group 6
c. Group 10
d. Group 18

17. The outermost energy level of an atom is considered full if the level contains _____ electrons.

18. Helium atoms need only _____ valence electrons to have a filled outermost energy level.

19. The first energy level of any atom can hold only _____ electrons.

20. Why is it uncommon for noble gases to form chemical bonds?

_____

_____