Name: _____

Physical Science Unit 5 Practice Sheet

Chapter 5:

1. List the correct symbol for each element name:
   a. oxygen
   b. chlorine
   c. carbon
   d. magnesium
   e. silver
   f. sodium
2. List the correct name for each element symbol:
   a. Cu
   b. K
   c. Zn
   d. S
   e. Al
   f. Fe
3. Check the correct column to show whether a property applies to a metal or a nonmetal.

Property	Metal	Nonmetal
malleable		
lustrous		
gas at room temperature		
forms positive ions		
brittle		

4. In order to form a full valence shell, what group of elements will atoms in Group 1 most likely bond with?
   a. alkali metals
   b. alkaline earth metals
   c. halogens
   d. noble gases
5. Fluorine (F) is a nonmetal. It has a strong tendency to complete its outermost shell of electrons and form an ion. How will F form its ion?
   a. It will gain one electron and form F^-.
   b. It will gain two electrons and form F^{2-}.
   c. It will lose one electron and form F^+.
   d. It will lose two electrons and form F^{2+}.
6. How many valence electrons does an atom of the element neon (Ne) have?
   a. one b. two c. eight d. ten
7. Which element reacts MOST similarly to chlorine?
   a. sulfur because they are both located in the same period
   b. fluorine because they both have seven valence electrons
   c. sulfur because they both gain tow electrons to form anions
   d. fluorine because they are both gases at room temperature

8. Janelle made a mistake in her notebook. Which statement BEST describes the mistake she made?

Janelle's Notes about Oxygen

-has six valence electrons

-is a nonmetal

-forms an anion when it gains one electron

   a. Oxygen is classified as a metal rather than a nonmetal.
   b. Oxygen has seven valence electrons rather than six.
   c. An oxygen ion is called a cation because it loses electrons.
   d. An oxygen atom gains two electrons when it becomes an anion.

9. Which statement BEST describes the elements in Group 18?
   a. They each have four valence electrons.
   b. They are gases a room temperature.
   c. They are highly reactive.
   d. They are metals.

10. Paul made a mistake on his list. Which BEST describes the mistake Paul made?

Paul's List about Alkaline Earth Metals

-lose two electrons
-are found in group two
-ions will be negative two
-include elements Be, Mg, and Ca

   a. Alkaline earth metals do not lose two electrons; they gain two electrons.
   b. Alkaline earth metals are not found in Group two; they are found in Group 1.
   c. Alkaline earth metal ions will not be negative two; the ions will be positive two.
   d. Alkaline earth metals do not include elements Be, Mg, and Ca; they include Co, Ni, and Cu.

11. A certain element is a solid that has a shiny gray appearance at room temperature. This element is very brittle in texture and cannot be hammered into a flat shape without falling apart. This element is MOST LIKELY classified as

   a. an alkali metal.
   b. a noble gas.
   c. a metalloid.
   d. a halogen.

12. What is the name for Group 1, and what type of ions will they form?
    a. They are called alkali metals, and they will each lose an electron to have a charge of +1 when they form ions.
    b. They are called alkali metals, and they will each gain an electron to have a charge of +1 when they form ions.
    c. They are called alkaline earth metals, and they will each lose an electron to have a charge of +1 when they form ions.
    d. They are called alkaline earth metals, and they will each gain an electron to have a charge of -1 when they form ions.
13. Which statement BEST describes neon?
    a. Neon is a halogen and is extremely reactive because it has a half valence shell.
    b. Neon is a noble gas and is extremely reactive because it has a full valence shell.
    c. Neon is a halogen and is extremely unreactive because it has a half valence shell.
    d. Neon is a noble gas and is extremely unreactive because it has a full valence shell.
14. Which element has chemical properties that are MOST similar to those of calcium?
    a. Sr b. K c. Co d. N
15. The elements selenium and oxygen are both poor electrical conductors. In which section of the periodic table are they found?
    a. halogens
    b. metalloids
    c. nonmetals
    d. noble gases

Chapter 6:

16. Classify the following compounds as ionic (metal and nonmetal) or covalent (nonmetal and nonmetal).
    a. $CaCl_2$
    b. CO_2
    c. H_2O
    d. NaF
    e. CH_4
    f. $FeCl_3$

Name the following compounds.

17. NaCl
18. K_2O
19. NO_2
20. Li_3N
21. N_2O_4
22. CaS

23. Fill in the chart with the correct formulas when the ions bond.

	Cl^-	O^{2-}	N^{3-}	SO_4^{2-}
Na^+				
Mg^{2+}				
Al^{3+}				
NH_4^+				

Write the formulas for the following compounds.

24. carbon tetrachloride

25. magnesium bromide

26. aluminum iodide

27. dinitrogen pentoxide

28. sodium chloride

29. aluminum oxide

30. Metals are good conductors of heat and electricity. Which particles are free to move and give metals this property?

a. protons
b. neutrons
c. electrons
d. nuclei