Chapter 7 Review   Name _____

Having studied this chapter and done the problems, you should be able to:

1. Use the periodic table to find the number of valence electrons in an atom.

            a. Sodium _____   b. Carbon _____   C. Phosphorus _____

2. Draw electron dot formulas of the following representative elements

            K   Al   O   Cl.

3. State the octet rule.

4. State the importance of the noble-gas electron configuration in the formation of ions.

5. Describe the formation of the sodium ion using an electron dot structure.

6. Describe the formation of the sulfide ion using an electron dot structure.

7. Give the characteristics of an ionic bond.

8.   Explain why the compound NaF is an ionic compound.

10. Identify characteristics (properties) of ionic compounds.

11. Explain the electrical conductivity of melted and of aqueous solutions of ionic compounds.

12. Use the theory of metallic bonds to explain the physical properties of metals.
  a) Why do they conduct electricity?

  b) Why are they malleable?

13. For the element magnesium, give the following:

  a. the number of valence electrons

  b. the electron dot formula

  c. the formula for its most stable ion

14. How many valence electrons does the element iodine have? What is the formula for iodine's most stable ion?

15. Use electron dot formulas to predict the formula of the ionic compound formed when sodium and sulfur combine.

16. Using electron dot diagrams, determine the formula of the ionic compound formed when barium and phosphorus combine.

17. How many valence electrons does the element gallium have? What is the formula for gallium's most stable ion?

18. Write the formula for the ion formed when nitrogen gains electrons to attain a noble gas configuration.

19. Using electron dot diagrams, show the formation the ionic compound formed when astatine and strontium combine?