CP Chem

Name Key

Ch. 7 Review: Ionic Bonding

1. Draw Electron Dot Structures for the following elements: Na, B, N, S.

   ·Na ·B· ·N· :S·

2. Write the symbols for the most common ion formed by: K, N, Ca, and Br . Ex(magnesium is Mg^{2+})

   K^+ N^{3-} Ca^{2+} Br^-

3. What is the Octet Rule?

   Atoms are most stable with 8 valence electrons

4. Ionic compounds are composed of a metal, which forms a cation, and a nonmetal, which forms an anion.

5. Under what two conditions do ionic compounds conduct electricity?

   melted and dissolved in water

6. List three properties of ionic compounds.

   (a) solid at room temperature

   (b) Brittle

   (c) high melting point

7. When the ionic compound KBr is formed, electrons from K are transferred to Br

8. What is the definition of the word "alloy"? Give one example of an alloy.

   A mixture of more than one type of metal.

   example: Brass is an alloy of copper and zinc

9. What are some of the advantages that alloys have over pure metals?

   alloys can be stronger or less reactive than pure metals

10. In the "sea of electrons" model, B are free to move around
    (a) all of the electrons
    (b) the valence electrons
    (c) the protons
    (d) the valence neutrons

11. Why can metals conduct electrical current?

    Because their valence electrons can move

3.) Name the following ions

a. P^{3-}	b. CN^-	c. Cu^{2+}	d. SO_4^{2-}	e. Mg^{2+}
Phosphide	cyanide	copper (II) ion	Sulfate	magnesium ion
f. $C_2H_3O_2^-$	g. OH^-	h. CO_3^{2-}	i. NH_4^+	j. Zn^{2+}
acetate	hydroxide	Carbonate	ammonium	Zinc ion
k. K^+	l. O^{2-}	m. HSO_4^-	n. Pb^{2+}	o. $C_2O_4^{2-}$
Potassium ion	oxide	hydrogen sulfate	lead (II) ion	Oxalate

4.) Write the formulas of the following pairs of ions. (See part "a" as an example)

a. sulfate and sulfide
SO_4^{2-} and S^{2-}

b. nitride and nitrate
N^{3-} NO_3^-

c. hydroxide and oxide
OH^- O^{2-}

d. chlorate and chloride
ClO_3^- Cl^-

e. phosphate and phosphide
PO_4^{3-} P^{3-}

f. carbonate and cobalt ion
CO_3^{2-} Co^{+x}

5.) Name each compound

FeO
Iron (II) oxide

Fe_2O_3
iron (III) oxide

Na_3PO_4
Sodium phosphate

CrI_3
chromium (III) iodide

$CaCO_3$
Calcium carbonate

$AgNO_2$
Silver nitrite

$Fe_2(C_2O_2)_3$
iron (III) oxalate

$MgBr_2$
magnesium bromide

6.)Write each formula.

copper(II) chlorate
~~copper~~ $Cu(ClO_3)_2$

calcium nitrate
$Ca(NO_3)_2$

aluminum sulfate
$Al_2(SO_4)_3$

silver chloride
$AgCl$

beryllium hydroxide
$Be(OH)_2$

aluminum sulfide
Al_2S_3