Physical Science 10: Chemistry Review Chapter 5

1. Be able to match each of the following words to their definition:
   a. Alkaline earth metals
   b. Chemistry
   c. Matter
   d. Group
   e. Period
   f. Alkali metals
   g. Covalent bond
   h. Molecular compound
   i. Ionic compound
   j. Polyatomic ion
   k. Chemical property
   l. Physical property
   m. Chemical Change
   n. Physical Change
   o. Atom
   p. Molecule
   q. Compound
   r. element

2. a) Where are valance electrons located?

   b) How many valence electrons are in each of the following:
   i) Oxygen ii) Carbon iii) Nitrogen

   c) What is the most reactive group of elements on the periodic table? The most un-reactive?

3. Draw Bohr diagrams of the following atoms/ions:
   a. nitride
   b. Nitrogen
   c. Aluminum
   d. Argon
   e. Chloride
   f. Magnesium^{2+}

4. Identify the following elements based on their position on the periodic table:
   a. Period 4, group 5
   b. Period 5, group 1
   c. Period 2, group 17

5. Why do elements gain or lose electrons?

6. State the charge that each ion would have if it:
   a. Lost 2 electrons
   b. Lost 1 electron
   c. Gained 3 electrons
   d. Gained1 electron

7. For each of the following state whether it is a physical or chemical change.
   a. A popsicle melts on the pavement
   b. Gasoline burns in the air
   c. Water freezes at 0^oC

8. What is the difference between an ionic compound and a molecular compound in terms of:
   a. The bonds formed between them
   b. The elements involved

Write the name for each of the following Ionic Compounds:

1. $NaBr$ _____
2. $Ti(SO_4)_2$ _____
3. $FePO_4$ _____
4. K_3N _____
5. $CuOH$ _____
6. VCl_4 _____
7. Mg_3P_2 _____
8. $Sr(HCO_3)_2$ _____
9. Ba_3N_2 _____
10. $Zn(NO_3)_2$ _____

Write the name for each of the following Molecular Compounds:

1. CO _____
2. P_2O_5 _____
3. CO_2 _____
4. CH_4 _____
5. CF_4 _____
6. SO_2 _____
7. N_2O _____
8. N_2O_4 _____
9. BCl_3 _____
10. C_2S_4 _____

Write the formula for each of the following Ionic Compounds:

1. nickel (III) sulfide_____
2. copper (II) sulfate _____
3. manganese (II) phosphate _____
4. aluminum phosphate _____
5. magnesium hydroxide _____
6. potassium carbonate _____
7. silver oxide _____
8. tin (IV) selenide _____
9. lithium nitride _____
10. copper (I) sulfide _____

Write the formula for each of the following Molecular Compounds:

1. silicon dioxide _____
2. diboron tetrabromide _____
3. carbon tetrachloride _____
4. nitrogen monoxide _____
5. sulfur dioxide _____
6. hydrogen peroxide _____
7. dicarbon tetrasulfide _____
8. nitrogen tribrominde _____
9. methane _____
10. oxygen _____