

- 1.) Based on the electronegativity chart provided below, choose two atoms that will form a polar covalent bond. Write the atoms and their electronegativity values, and indicate the difference in their electronegativity values. Explain how polar covalent bonds are different from the other bond types in terms of their molecular structure.

H 2.1						
Li 1.0	Be 1.5	B 2.0	C 2.5	N 3.0	O 3.5	F 4.0
Na 0.2	Mg 1.2	Al 1.5	Si 1.8	P 2.1	S 2.5	Cl 3.0

- 2.) Explain why elements in the d-block of the periodic table are called Transition elements.
- 3.) Explain why the oxidation number for Group 13 is different than the oxidation number for Group 15. Which subatomic particles are involved? Give an example from each group by showing the electron configuration for the atom and the ion.
- 4.) Draw the Lewis dot structures for the following atoms:
- Ne S Cl Mg Si Ga N

- 5.) Explain how ionic bonding occurs. Which subatomic particles are involved? Use Lewis dots to show how atoms on the periodic table form an ionic bond. Label the cation and the anion formed
- 6.) Explain how covalent bonding occurs. Which subatomic particles are involved? Use Lewis dots to show how atoms on the periodic table form a covalent bond.

7.) Fill in the chemical names for the following compounds and molecules.

CCl_4 _____

PCl_3 _____

$\text{LiC}_2\text{H}_3\text{O}_2$ _____

HNO_3 _____

SiBr_4 _____

$\text{Ca}(\text{ClO}_4)_2$ _____

Ti_3P _____

$(\text{NH}_4)_3\text{N}$ _____

Ga_2O_3 _____

FeF_2 _____

8.) Fill in the chemical formulas for the following compounds and molecules.

boron trihydride _____

magnesium sulfite _____

lead II chromate _____

sodium hydroxide _____

sodium peroxide _____

dichlorine monoxide _____

water _____

iron III cyanide _____

hydrofluoric acid _____

dinitrogen pentasulfide _____

9) Indicate the number of atoms for each element in potassium permanganate.