Chapter 6 and 7 Review

1. Fill in the chart listing the unique characteristics of ionic compounds and molecular compounds and what they also have in common.

Ionic	Compare(what do they have in common)	Molecular
1)_____	1)_____	1)_____
2)_____	2)_____	2)_____
3)_____	3)_____	3)_____
4)_____	4)_____	4)_____

2. For each of the following bonds determine if they are polar or nonpolar. Draw in Dipole arrows and assign partial charges.

1) Cl – Cl 2) H – F 3) H – I 4) Br – Br 5) Br- I

Which bonds from the 5 above are the most polar and why?

_____
_____
_____
_____

3. Draw the Lewis structure for the following molecules. Assign each molecule its specific geometry, hybridization and determine if it is a polar or nonpolar molecule. Then determine what intermolecular forces are possible in the molecule

1) Silicon Tetrafluoride
Formula:_____

2) Sulfur Dichloride
Formula:_____

3) Phosphate Ion
Formula:_____

Geometry:_____
Polar of Nonpolar
Hybridization:_____
IMFs?_____

Geometry:_____
Polar of Nonpolar
Hybridization:_____
IMFs?_____

Geometry:_____
Polar of Nonpolar
Hybridization:_____
IMFs?_____

4. Discuss VSEPR theory and use its definition to explain why the bond angle for the bent water molecule is 105° and the bond angle for the trigonal pyramid NH_3 is 107°.

_____
_____
_____
_____

5. What are the conditions necessary for Hydrogen Bonding to occur between molecules?

_____
_____
_____
_____

6. Using the intermolecular forces discussed in class discuss why NH_3 has a boiling point 130° higher than CH_4.

_____
_____
_____
_____
_____

7. Complete the chart: (attach separate sheet for work if needed)

Compound Name	Ionic or Molecular	Chemical Formula
		BrF_5
Copper (II) Phosphate		
		$Sn(SO_3)_2$
Tetraphosphorous Hexasulfide		

8. Draw the Lewis structure and name each compound below.

a. PO_4^{3-}

b. SO_3

c. C_2H_6

c. HCN

Things to know……

1) **Identify the name and formula of the first ten organic hydrocarbon chains.**
2) **List the order of the strength of the IMFs**
3) **Identify the difference between ionic and covalent bonds. Explain the difference in strength between ionic, covalent and intermolecular forces.**
4) **Draw all lewis structures, including double and triple bonds, expanded octets, ions with resonance.**
5) **Name all ionic and molecular compounds**
6) **Write formulas from the names of ionic and molecular compounds.**