REVIEW QUESTIONS

Chapter 5

1. Binary Ionic – Type I

   Assign charges for each ion below, and complete the table with formulas and names for compounds formed by the combination of each cation and anion.

	Ca ____	K ____	Al____	Zn___
S___				
Cl___				
N___				
O ___				

2. Binary Ionic – Type II

   Based on the charges given for each cation, complete the table with formulas and names (Stock and Classical) for compounds formed by the combination of each cation and anion.

	Fe _2+	Cu _1+	Fe_3+	Sn_4+
I___				
P___				
O___				

3. Polyatomic
Assign charges for each ion below, and complete the table with formulas and names for compounds formed by the combination of each cation and anion.

	Ba ____	Al ____	NH_4____	Pb_4+
SO_4___				
NO_3___				
CO_3___				
PO_4 ___				

4. Covalent
Complete the table below with missing formulas and names.

iodine heptafluoride	
bromine trifluoride	
N_2O_5	
OF_2	
disulfur hexachloride	
SF_4	

5. Complete the following table with the missing information:

Ion	Number of Protons	Number of Electrons	Electrons Lost/Gained
K^+			
	12	10	
	8		2 gained
		10	3 lost

6. Classify each of the following bonds as ionic, polar covalent or non-polar covalent:

a) P—F _____

b) Rb—Cl _____

c) N—O _____

7. Arrange the following bonds in order of increasing polarity:

N—O Br—Cl C—H I—I Zn—S Li—F

_____<_____<_____<_____<_____<_____
least polar most polar

8. Draw Lewis structures and use VSEPR to predict the shape and bond angles and polarity for each of the following molecules or ions:

a) SO_3^{2-}

Shape:_____

Bond angle:_____

Polarity (Y/N):_____

b) OCl_2

Shape:_____

Bond angle:_____

Polarity (Y/N):_____

c) $COCl_2$

Shape:_____

Bond angle:_____

Polarity (Y/N):_____

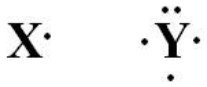
d) N_3^-

Shape:_____

Bond angle:_____

Polarity (Y/N):_____

9. Write the formula for the ionic compound formed from the combination of the elements indicated by the following electron-dot symbols:

a) 

b) 

c) 

10. Complete each of the following statements with a suitable word or phrase:

a) Polarity of a bond is caused by _____

b) Linear molecules with polar bonds are usually _____

c) Molecules with 3 bonding pairs and 1 non-bonding pair of electrons around the central atom have a _____shape.

d) Bonds that have unequal sharing of electrons are classified as _____.

e) Molecules with 2 bonding pairs and 2 non-bonding pair of electrons around the central atom have a _____shape.