Chemistry Review #1

Periodic Table, Ions, Bonding, and Chemical Formulas

Part A – True/False

If the statement is true, write T in blank. If the statement is false, write F in the blank.

1. __*F*__ Each shell of electrons around an atom can a maximum of eight electrons.
2. __*T*__ A positively charged ion is called a cation.
3. __*T*__ Valence electrons are located in the outermost electron shell of the atom.
4. __*F*__ Lithium oxide is a molecular compound.
5. __*T*__ A covalent bond forms when atoms share electrons.

Part B – Fill in the Blanks

Fill in the blanks with the appropriate words.

1. When nitrogen combines with oxygen a/an _*covalent*_____ bond is formed.
2. An anion is an atom that has __*gained*_____ electrons.
3. All metals ___*lose*_____ electrons to become __*positively*__ charged ions.
4. A metal and a non-metal combine to form a/an ___*ionic*_____ compound.
5. One molecule of chlorine gas is written as _____*Cl_2*_____.

Part C – Extended Answers

Answer the following questions in the spaces provided.

1. Draw electron dot diagrams for each of the following elements or ions.

a) Li	b) Cl^-
	

2. Draw an electron dot diagram for the following molecular compounds.

a) O_2	b) CO_2

3. Write the chemical formulas of the following compounds.

a) magnesium iodide *MgI_2*

b) aluminum oxide *Al_2O_3*

c) nitrogen dioxide *NO_2*

d) silicon tetrachloride *$SiCl_4$*

e) dinitrogen pentoxide *N_2O_5*

f) copper(II) sulfide *CuS*

g) lead(IV) oxide *PbO_2*

h) sodium nitrate *$NaNO_3$*

i) ammonium sulfate *$(NH_4)_2SO_4$*

j) lead(II) nitrate *$Pb(NO_3)_2$*

4. Write the chemical name of the following compounds.

a) MgI_2 *magnesium iodide*

b) $LiCl$ *lithium chloride*

c) Be_3N_2 *beryllium nitride*

d) CH_4 *carbon tetrahydride*

e) N_2O_4 *dinitrogen tetroxide*

f) P_5O_{10} *pentaphosphorus decaoxdride*

g) $CuCl_2$ *copper(II) chloride*

h) FeO *iron(II) oxide*

i) H_2SO_4 *hydrogen sulfate*

j) $Pb(NO_3)_2$ *lead(II) nitrate*