

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

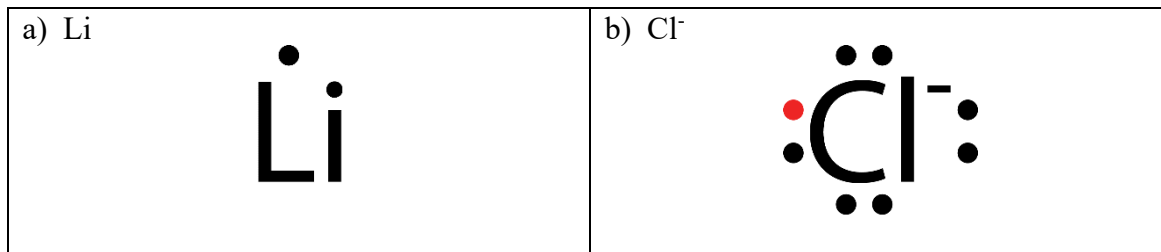
Fill in the blanks with the appropriate words.

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 Cl₂ .

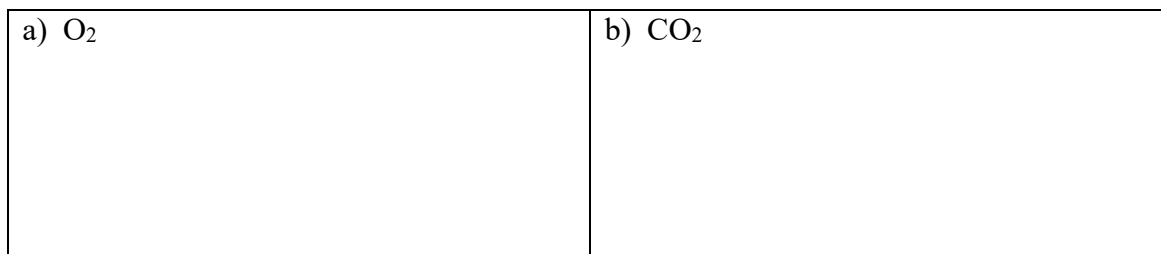
Part C – Extended Answers

Answer the following questions in the spaces provided.

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



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



3. Write the chemical formulas of the following compounds.

- | | |
|--------------------------|---|
| a) magnesium iodide | <i>MgI₂</i> |
| b) aluminum oxide | <i>Al₂O₃</i> |
| c) nitrogen dioxide | <i>NO₂</i> |
| d) silicon tetrachloride | <i>SiCl₄</i> |
| e) dinitrogen pentoxide | <i>N₂O₅</i> |
| f) copper(II) sulfide | <i>CuS</i> |
| g) lead(IV) oxide | <i>PbO₂</i> |
| h) sodium nitrate | <i>NaNO₃</i> |
| i) ammonium sulfate | <i>(NH₄)₂SO₄</i> |
| j) lead(II) nitrate | <i>Pb(NO₃)₂</i> |

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 decaoxide*
- g) CuCl_2 *copper(II) chloride*
- h) FeO *iron(II) oxide*
- i) H_2SO_4 *hydrogen sulfate*
- j) $\text{Pb}(\text{NO}_3)_2$ *lead(II) nitrate*