

Chemistry Review #1
Periodic Table, Ions, and Bonding

Part A – True/False

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

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

Part B – Fill in the Blank

Fill in the blanks with the appropriate words.

1. When nitrogen combines with oxygen a(n) _____ bond is formed.
2. When calcium combines with chlorine a(n) _____ bond is formed.
3. Non-metals _____ electrons to become _____ charged ions which are called _____.
4. Metals _____ electrons to become _____ charged ions which are called _____.
5. One molecule of chlorine gas is written as _____.

anions	Cl ₂	ionic	negatively
cations	covalent	lose	neutrally
Cl	gain	metallic	positively

Part C – Free Response

1. Predict the formula of the ionic compound formed when the following combine.

(a) magnesium and oxygen

(b) calcium and chlorine

(c) potassium and oxygen

(d) sodium and sulfide (SO_4^{2-})

2. Explain what is meant by

(a) an ionic compound.

(b) a molecular compound.