

Chemistry Review #1
Periodic Table, Ions, Chemical Formulas, and Balancing Chemical Equations

Name: _____

Part A – True/False

Some of the statements are false; some are true. Write T to the left of the statement if it is true. If the statement is false, write F.

1. _____ Each shell of electrons around an atom can hold up to 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 – Multiple Choice

Circle the best response.

1. When nitrogen combines with oxygen a/an _____ bond is the result.
A) ionic
B) metallic
C) covalent
D) acidic
2. Calcium combines with bromine in the ratio
A) 1:2
B) 1:3
C) 2:1
D) 3:1
3. One molecule of chlorine is written as
A) Cl
B) Cl²
C) Cl₂.
D) Cl⁻

Part C – Fill in the Blanks

Fill in the blank with the appropriate term.

1. In a chemical equation, the abbreviation “aq” stands for _____.
2. In a chemical equation, the abbreviation “g” stands for _____.

Part D – Extended Answers

Answer the following questions in the spaces provided. Answers are worth the points indicated.

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

a) Li

b) Cl^-

2. Write the chemical formulas of the following compounds.

a) magnesium iodide _____

b) aluminum oxide _____

c) nitrogen dioxide _____

d) silicon tetrachloride _____

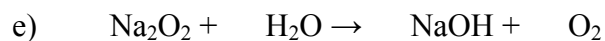
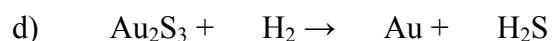
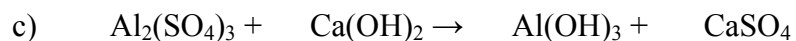
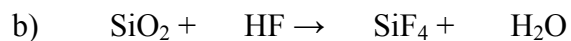
e) copper(II) sulfide _____

f) iron(IV) oxide _____

3. Write the chemical names of the following binary compounds. Some of the names may require use of the Stock system.



4. Balance the following chemical equations.



5. Write a balanced chemical equation using symbols for each of the word equations.

a) Iron metal and chlorine gas react to form iron(III) chloride.

- b) Hydrogen peroxide breaks down into water and oxygen.

- c) Methane reacts with oxygen to produce carbon dioxide and water vapor.

- d) Hydrogen gas and nitrogen monoxide react to form water and nitrogen gas.

- e) Aluminum bromide and chlorine gas react to form aluminum chloride and bromine gas.