**CW #2 - % Composition, Empirical and Molecular Formulas**

**Name**

**Period: 2 3 4**

Directions: Solve each problem, SHOW YOUR WORK AND HAVE ANSWERS WITH CORRECT UNITS AND 2 DECIML POINTS !

% Composition – Find the % of the element indicated in each the compound.

1. The percent of copper in copper (II) bromide
2. The percent of oxygen in sodium hydroxide
3. The percent of manganese in potassium permanganate
4. The percent of oxygen in magnesium nitrate
5. The percent of aluminum in aluminum sulfate
6. The percent of silver in silver (I) carbonate
7. The percent of nitrogen in nitrous acid
8. The percent of carbon in magnesium acetate
9. The percent of hydrogen in sucrose, C12H22O11
10. The percent of tungsten in tungsten (VI) oxalate.

Empirical Formulas – Determine the empirical formulas from the experimental data

1. Rubbing alcohol, or isopropyl alcohol, contains 60.0% carbon, 13.4% hydrogen and the remaining amount is oxygen. Determine the empirical formula for isopropyl alcohol.
2. A sample of indium chloride weighing 0.5000g is found to contain 0.2404g of chloride and the rest indium. What is the empirical formula for indium chloride?
3. Phosphoric acid is found in some soft drinks. A sample of this acid contains 0.3086g of hydrogen, 3.161g of phosphorous, and 6.531g of oxygen. What is the empirical formula for phosphoric acid?
4. A compound consists of 72.2% magnesium and the rest nitrogen by mass. What is the empirical formula for this compound?

Molecular Formulas – Determine the molecular formulas from the information provided.

1. A compound has an empirical formula of NO2 and a molecular mass of 92.02g/mol. Determine the molecular formula.
2. Ibuprofen, a common headache remedy, has an empirical formula of C7H9O and a molecular mass of approximately 215g/mol. Determine its molecular formula.
3. Nicotine is 74.1% carbon, 8.6% hydrogen, and 17.3% nitrogen by mass/ Its molecular mass is about 160 g/mol. Determine its molecular formula.
4. Epinephrine (adrenaline) is a hormone secreted into the bloodstream in times of danger and stress. It is 59.0% carbon, 7.1% hydrogen, 26.2% oxygen, and 7.7% nitrogen by mass. Its molecular mass is about 180 g/mol. Determine its molecular formula.