**CHEMISTRY 11 – *‘Welcome Back from the Holidays and get yourself back to work’* – Worksheet**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Blk: \_\_\_\_**

*Some Review:*

1. How many particles of dinitrogen tetraoxide gas are in a balloon, if the balloon is filled with 40.00L of the gas at STP?
2. How many particles of dinitrogen tetraoxide gas are in a balloon, if the balloon is filled with 40.00L of the gas at room temperature. The density of N2O4 is 1.44 g/mL.
3. What is the percentage composition of oxygen in the compound:

*Lithium phosphate heptahydrate*

1. One of the most harmful pollutants which are expelled from burning coal is composed of gaseous sulphur mixing with oxygen in the air. A sample of coal was burned and the resulting sulphur gas has a mass of 82g and when mixed in the air the resulting molecule has a mass of 204g. What is the empirical formula for this resulting compound?
2. A sample of an unknown gas, which has a density of 27.3 g/L at STP, is run through a GCMS machine to determine the percentage of each atom. The data received for the percentage composition is: 60.8% phosphorus and 39.2% oxygen.

Determine the molecular formula of this gas.