**Molar Mass and Mole Calculations Worksheet**

1. Calculate the molar mass for each of the following compounds:

a. NaCl

b. Fe2O3

c. MgCO3

d. Ba(OH)2

e. (NH4)3PO4

f. Ca3(PO4)2

g. C6H12O6

h. C5H5N

2. Calculate the number of moles in each of the following masses:

a. 45.0 g of acetic acid, CH3COOH

b. 7.04 g of lead (II) nitrate

3. Calculate the mass in grams of each of the following amounts:

a. 3.00 mol of selenium oxybromide, SeOBr2

b. 488 mol of calcium carbonate

4. Calculate the number of molecules or formula units in each of the following amounts:

a. 4.27 mol of tungsten(VI) oxide, WO3

b. 0.989 mol of nitrobenzene C6H5NO2

5. Calculate the mass of each of the following quantities:

a. 8.39 × 1023 molecules of fluorine

b. 6.82 × 1024 formula units of beryllium sulfate

6. A chemist needs 22.0 g of phenol, C6H5OH, for an experiment. How many moles of phenol is this?

7. A student needs 0.015 mol of iodine crystals, I2, for an experiment. What mass of iodine crystals should the student obtain?

8. An Avogadro’s number (1 mol) of sugar molecules has a mass of 342 g, but an Avogadro’s number (1 mol) of water molecules has a mass of only 18 g. Explain why there is such a difference between the mass of 1 mol of sugar and the mass of 1 mol of water.

9. A chemist weighs a steel cylinder of compressed oxygen, O2, and finds that it has a mass of 1027.8 g. After some of the oxygen is used in an experiment, the cylinder has a mass of 1023.2 g. how many moles of oxygen gas are used in the experiment?