WORKSHEET-1
CLASS-XI (CHEMISTRY)
CH- 1 (SOME BASIC CONCEPTS OF CHEMISTRY)

TOPIC : LAWS OF CHEMICAL COMBINATION

1. 10.0g of $CaCO_3$ on heating gave 4.4 g of CO_2 and 5.6 g of CaO. Show that these observations are in agreement with law of conservation of mass.
2. 1.375 g of cupric oxide was reduced by heating in a current of hydrogen and the weight of copper that remained was 1.098g. In another experiment, 1.179g of copper was converted into 1.476g of cupric oxide by oxidation process. Show that these results illustrate law of constant proportion.
   (HINT : Find the % of Cu and O in both the cases . % of Cu will be same in both the cases , similarly % of O will be same in both the cases)
3. Hydrogen and oxygen are known to form two compounds. The hydrogen content in one of these is 5.93% while in other it is 11.2%. Show that this data illustrates law of multiple proportions.
4. Carbon and Oxygen are known to form two compounds. The carbon content in one of these is 42.9%, while in other; it is 27.3%. Show that this data is in agreement with law of multiple proportion.
5. Copper sulphate crystals contain 25.45% of copper and 36.07% of water. If the law of definite proportion is true ; then calculate the mass of copper required to obtain 40 g of crystalline copper sulphate.

TOPIC : MOLE CONCEPT

1. Calculate:-
(a) mass of 2.5 gram atom of Mg.
(b) gram atoms in 60 g of Nitrogen.
© gram molecules in 4.9 g of H_2SO_4.
(d) mass of 0.72 gram molecules of CO_2.
(e) no. of atoms in 0.25 mole of C.

2. What weight of Calcium contains the same no. of atoms as are present in 3.2 g of Chlorine?
3. How many atoms of oxygen and hydrogen are present in 0.15 mol of H_2O?

EMPIRICAL FORMULA

1. A substance on analysis gave the following percentage composition.
   Na = 43.4% C = 11.3% O = 45.3%. Calculate its empirical formula.
2. What is the empirical formula of the compound which has the following percentage composition?
   C = 80% H = 20% . If the mass is 30 g, calculate its molecular formula.