BELPAHAR ENGLISH MEDIUM SCHOOL, BELPAHAR.

CLASS TEST

CLASS –X **TIME – 40 MINTS**

SUB – CHEMISTRY

MOLE CONCEPT AND STOICHIOMETRY

1. State how the Gay Lussac's Law explains the reaction between nitrogen and hydrogen to form ammonia?

2. How does Avogadro's Law explain the reaction between sulpher di oxide and oxygen to form sulpher tri oxide gas?

3. Define the following terms:
   (a) Mole (b) Vapour density (c) Atomic weight (d) Molar volume (e) Avogadro's number

4. Answer the followings:

a) Calculate the no of moles and corresponding volume at S.T.P of 0.233 gms of nitrogen di oxide

(b) Find out the gram molecular weight of 1.65 moles of $ZnSO_4.7H_2O$

(c) 560 cm^3 of an unknown gas X weighs 1.1gm, whereas same volume of hydrogen weighs 0.05 at S.T.P , find vapour density f the gas.

(d) Ordinary chlorine isotopes $_{17}Cl^{35}$ and $_{17}Cl^{37}$ in the ratio 3:1, calculate relative atomic mass of the gas.

(e) Calculate the percentage of water in blue vitriol crystals

5. An inorganic compound has the following compositions: Mg=9.76%,S= 13.01%, O=26.01%, H_2O=51.22%. Find out the simplest formula of the compound.

6. Quick lime CaO is obtained by the burning of lime stone $CaCO_3$ in a lime kiln and the reaction is as $CaCO_3 \rightarrow CaO = CO_2$ what mass of lime stone should be heated to obtain 112 Kg of quick lime? Find out the no of moles and volume of CO_2 (at STP) produced under the same condition

7. Air contains 21% of oxygen by volume.
   (a)Calculate the volume of such air required for the complete combustion of 700cm^3 of ethylene at 15^oC and 756 mm pressure.
   (b)Find of the no of moles of products under same condition

8. $Pb_3O_4 + 8HCl = 3PbCl_2 + 4H_2O + Cl_2$
   1.12 dm^3 of $Cl_2$was evolved according to the above reaction. Then calculate
   (a) No of moles of Cl_2 gas, red lead, HCl and H_2O
   (b) Weight of red lead. $PbCl_2$ and HCl (assuming 36% purity of the acid)

9. 7 litres of hydrogen and 5.5 litres of oxygen were taken to form water vapours, volumes are measured at STP.
   (a) Calculate the maximum amount of water vapours that can be obtained.
   (b) Calculate the amount of one of the reactants which remains unreacted.

(Periodic table is attested for calculation)