TENDER HEART HIGH SCHOOL, SEC-33B, CHD.

CLASS- X CHAPTER- 5

SUBJECT- CHEMISTRY TEACHER- ANAMIKA

Q:- If 6 l of Hydrogen & 4l. of Chlorine are mixed & exploded & if water is added to the gas formed, find vol. of Residual gas.

Ans:-

$$\underset{(6l)}{H_2} + \underset{(4l)}{Cl_2} \longrightarrow 2HCl$$

1 Vol. of H_2 combine with 1 Vol. of Cl_2

∴ 6 l " " " 6 l " Cl_2

But there is only 4l. of Cl_2. Therefore Cl_2 is limiting reagent

∴ Only 4 l of H_2 is used. Remaining 2 l remains unreacted. Water is added to the sol^n as HCl is highly soluble in water.

Q:- What vol. of propane is burnt for every 500cm3 of air used in the reaction under same condition?
(Assuming oxygen is 1/5th of air)

$$C_3H_8 + 5O_2 \longrightarrow 3CO_2 + 4H_2O$$

Ans:- In 500cm3 of air only 100cm3 of O_2 is present as O_2 is 1/5th of air.

5 vol. of O_2 require for combustion of 1 Vol. of C_3H_8

1 " " " $= \frac{1}{5}$

100 ——— 20

$\frac{1}{5} \times 100$

$= 20 cm^3$

Q:- $Al_4C_3 + 12H_2O \longrightarrow 3CH_4 + 4Al(OH)_3$

a) what mass of aluminium hydroxide is formed from 12g of Al_4C_3

b) what vol. of CH_4 is obtained from 12g of Al_4C_3.

Ans a) ---144g of Al_4C_3 produce 312g $Al(OH)_3$

1g ——— $\frac{312}{144}$

12g ——— $\frac{312}{144} \times 12 = 26g$

b) 144g of Al_4C_3 ——— 48g of CH_4

1 ——— $\frac{48}{144}$

12 ——— $\frac{48}{144} \times 12 = 4g$

Vol $= \frac{4}{16} \times 22.4 = 5.6l$