

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

Class: IX

Chapter 1- 5

Subject: Chemistry

Teacher:- Anamika

Q:- Find the:-

a) number of molecules in 73g of HCl

$$\text{No. of moles} = \frac{\text{Given weight}}{\text{Molecular weight}}$$

$$\frac{73}{36.5} = 2$$

$$\begin{aligned} \text{Mol. wt. of} \\ \text{HCl} &= 1 + 35.5 \\ &= 36.5 \text{g} \end{aligned}$$

$$1 \text{ mole} = 6.022 \times 10^{23}$$

$$2 \text{ mole} \rightarrow 2 \times 6.022 \times 10^{23} = 1.2 \times 10^{24}$$

b) Weight of 0.5 mole of O_2

$$\text{No. of moles} = \frac{\text{Given weight}}{\text{Molecular weight}}$$

$$(\text{O}_2 = 32 \text{g})$$

$$0.5 = \frac{x}{32}$$

$$x = 16 \text{g}$$

c) no. of molecules in 1.8g of H_2O

$$\text{No. of moles} = \frac{\text{Given weight}}{\text{Molecular weight}}$$

$$= \frac{1.8}{18} = 0.1 \text{ mole}$$

$$1 \text{ mole} = 6.022 \times 10^{23} \text{ molecules}$$

$$0.1 \text{ mole} = 6.022 \times 10^{23} \times 0.1 = 6.022 \times 10^{22}$$

d) no. of moles in 10g of CaCO_3

$$\text{no. of moles} = \frac{\text{Given wt.}}{\text{mol. wt.}}$$

$$\frac{10}{100} = 0.1 \text{ mole}$$

e) weight of 0.2 mole of H_2 gas

$$\text{no. of moles} = \frac{\text{Given wt.}}{\text{mol. wt.}}$$

$$0.2 = \frac{x}{2}$$

$$x = 0.4 \text{ g}$$

f) number of molecules in 3.2g of SO_2

$$\text{no. of moles} = \frac{\text{Given wt.}}{\text{mol. wt.}}$$

$$\frac{3.2}{64} = 0.05 \text{ moles}$$

$$1 \text{ mole} = 6.022 \times 10^{23}$$

$$0.05 \text{ mole} = 6.022 \times 10^{23} \times 0.05 = 3 \times 10^{22}$$