MOLE CONCEPT

(1)

* Mole (n) = molar mass expressed in g
* $n = \frac{w}{M}$ | w = wt, g; M = molar mass, $g\,mol^{-1}$
* $n = \frac{w}{A}$ | A = atm mass $g\,mol^{-1}$

* n = no. of moles
* Avogadro's Hypothesis

Equal volume of gases contain equal no. molecules at ~~same~~ STP

* Avogadro's Volume

$V_A = 22.4\ L$

(2)

$V_A = 22,400\ mL$

$V_A = 22.4 \times 10^{-3}\ m^3$

$V_A = 2.24 \times 10^{-2}\ m^3$

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* Avogadro's no.

6.02×10^{23} molecules/mol (or) atoms/mol

no. of molecules

$(n') = n N_A$

$n' = \frac{w}{M} N_A$

no. of atoms

$n'' = \frac{w}{A} N_A$

n = mole

$n = \frac{w}{M}$

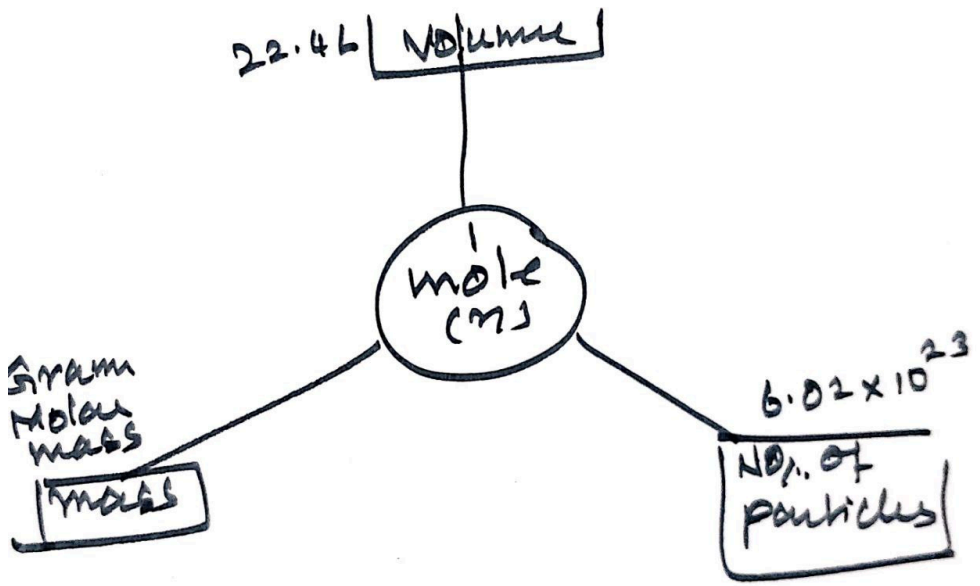
M = molar mass

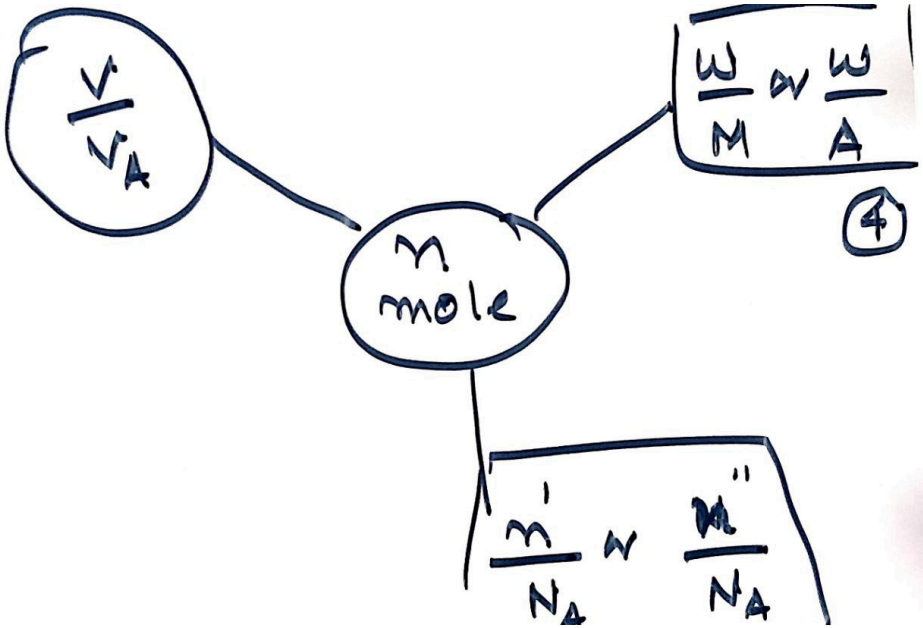
A = atm. mass

Vapour density

$$V.D. = \frac{\text{mass of given vol. of gas at STP}}{\text{mass of same vol. of hydrogen}}$$

$$V.D. = \frac{\text{Relative molecular mass}}{2}$$





1 mol gas = 22.4 L at STP

1 mol particle = 6.02×10^{23}

1 mol mass = Molar mass expressed in g

1 mol H_2O = 18 g H_2O