IMPORTANT JEE-NEET FORMULAS

Stoichiometry Formula's

Topics	Formulas
Relative atomic mass	$$Relative\ atomic\ mass\ (R.A.M) = \frac{Mass\ of\ one\ atom\ of\ an\ element}{\frac{1}{12} \times mass\ of\ one\ Carbon\ atom}$$ $$= Total\ number\ of\ nucleons$$
Density	$$Specific\ gravity = \frac{density\ of\ the\ substance}{density\ of\ water\ at\ 4^0C}$$
For Gases:	$$Absolute\ density\left(\frac{mass}{volume}\right) = \frac{Molar\ mass\ of\ the\ gas}{Molar\ Volume\ of\ the\ gas}$$ $$\Rightarrow \rho = \frac{PM}{RT}$$ Vapor density $$V.D.. = \frac{d_{gas}}{d_{H_2}} = \frac{PM_{gas}}{PM_{H_2}} = \frac{M_{gas}}{M_{H_2}}$$ $$M_{gas} = 2\ V.D$$
Molarity(M):	$$Molarity(M) = \frac{w \times 1000}{(Mol.wt\ of\ Solute) \times V_{in\ ml}}$$
Molality(m):	$$Molality = \frac{number\ of\ moles\ of\ solute}{mass\ of\ solvent\ in\ gram} \times 1000 = 1000\frac{W_1}{M_1W_2}$$
Mole Fraction(x):	$$Mole\ Fraction\ of\ solution\ (x_1) = \frac{n}{n+N}$$ $$Mole\ fraction\ of\ solvent(x_2) = \frac{N}{n+N}$$ $$x_1 + x_2 = 1$$
% Calculation	$$\%\ \frac{w}{w} = \frac{mass\ of\ solute\ in\ gm}{mass\ of\ solution\ in\ gm} \times 100$$ $$\%\frac{w}{v} = \frac{Mass\ of\ solute\ in\ gm}{Volume\ of\ solution\ in\ ml} \times 100$$

	$\%\frac{v}{v} = \frac{\textbf{Volume of solute in ml}}{\textbf{Volume of solution}} \times 100$
Average/ Mean atomic mass:	$A_x = \frac{a_1x_1 + a_2x_2 + \cdots + a_nX_n}{100}$
Mean molar mass or molecular Mass	$M_{avg} = \frac{n_1M_1 + n_2M_2 + \cdots n_nM_n}{n_1 + n_2 + n_3 + \cdots n_n}$
Normality(N)	$\textbf{Normality}(N) = \frac{\textbf{Number of equivalents of solute}}{\textbf{Volume of Sodium}(\textbf{ in liters})}$
Measurement of Hardness	$\textbf{Hardness in ppm} = \frac{\textbf{mass of } CaCO_3}{\textbf{Total Mass of water}} \times 10^6$
Molarity in mole Fraction	$x_2 = \frac{MM_1 \times 1000}{\rho \times 1000 - MM_2}$
Mole Fraction into molality	$m = \left(\frac{x_2 \times 1000}{x_1M_1}\right)$
Molality into mole fraction	$x_2 = \frac{mM_1}{1000 + mM_1}$
Molality into molarity	$M = \frac{m\rho \times 1000}{1000 + mM_2}$
Molality into Molality	$m = \frac{M \times 1000}{1000\rho - mm_2}$ M_1 *and* M_2Are molar mass and ρ is the density of solution in (gm/mL).
Y-Map