## Based on Physical State Based on Concentration Mass percentage Mole fraction (x) Molarity (M) (W/W)Gas in Gas (Air) · Dilate Solution No. of moles of solute Mass of Solute No. of moles of solute · Gas in liquid (Soda water) · Concertated Solution Total moles in Solution × 100 Gas in Solid (Hydrogen in Pd) · Solurated Solution Volume of Solution (L) Total mass of solution Liquid in gas (Fog) · Saper Solurated Solution · Liquid in liquid (Alcohol in H<sub>2</sub>O) Concentration · Liquid in Solid (Amalgams) terms · Solid in gas (Smog) Parts per million (PPM) Solid in liquid (Sugar in water) Molatity (M) Solid in Solid (alloys) No. of moles of solute No. of Parts of Solute weight of the Solvent in Kg Total No. of Parts of all compounts of Solution Types of Solutions Volume % (V/V) Normatity (N) Solve of the solve Volume of Solute SOLUBILITY No. of grams equivalent of Solute × 100 Total volume of Solution Volume of Solution (L) Liquid in liquid Mass by volume % mass of solute (Max.amount) Total moles in Solution Substance Effect of Nature of Effect of pressure Effect of pressure Solute of Solvent ightarrow Like dissoles Like Elevation of Boiling Point Osmotic pressure Pressure applied to Stop the Solubility increases $K_b \times 1000 \times W_b$ flow of Salvent through Semi with increase permeable memberane in pressure Raoult'S Law Effect of temp $\rightarrow$ r = CRT Exothernic process:-Colligative Henry's Law Increase with rise property Partial vapour in temp. Depression in freezing Pressure = Parical Relating loucing of Effect → Endothermic partial pressure of Presssure \* Mole fraction Mole fraction POINE rapour pressure process:gas in of the gas (x) $K_{F} \times W_{2} \times 1000$ Decrease with rise in temp. $oldsymbol{W_2} imes oldsymbol{M_1} \ \_ oldsymbol{P_A} - oldsymbol{P_S}$ vapour phase $\Delta T_{\epsilon} =$ $m{P_S} = m{P_A^\circ} m{X_A} + m{P_B^\circ} m{X_B}$ Effect of prassure $M_2 \times W_1 \qquad P_A$ $M_2 \times W_1$ Ideal & Non ideal Solution P = KHX ightarrow No effect Non Ideal Ideal Does not obey Rault's law Raoult'S Law Van't hoff factor (i) $\mathbf{P_s} = \mathbf{P_A^\circ X_A} + \mathbf{P_B^\circ X_B}$ $P_{S} \neq P_{A}^{\circ} X_{A} + P_{B}^{\circ} X_{B}$ Azeofropeo P<sub>total</sub>= P<sub>A</sub>+ P<sub>A</sub> Constant boiling mixtures Ratio of the Normal mass to the Positive deviation Negative deviation obsered molecular mass of the Solute: V.P. Solution V.P. Solution Normal molor mass Positive deviation Nagative deviation -----Ab Normal molar malar mass mixture mixture X<sub>A</sub> = 0 X<sub>B</sub> = 1 $X_0 = 1$ MINIMUM boiling Maximum boiling azeotropes azeotropes Ex. 95% Ethonol Ex. 68% HN03 in water in water X<sub>A</sub> = 1 X<sub>B</sub> = 0 X<sub>A</sub> = 1 X<sub>B</sub> = 0