Notes of ch 2 chemistry class 12

1. A solution is a homogeneous mixture of two or 9. more chemically non-reactive substances. Components of a solution generally cannot be separated from filtration, installation or centrifugal. 2. A solution can be classified as a solid, liquid or gaseous solution. 3. Solubility is defined as the amount of solute in a saturated solution for 100g of a solvent. 4. The solubility of a gas in a liquid depends on (a) the nature of the gas and the nature of the liquid, (b) the temperature of the system, and (c) the gas pressure. 5. The effect of pressure on the solubility of a gas in a liquid is regulated by the law of Henry. It is stated that the solubility of a gas in a liquid at a given temperature in directly proportional to the partial pressure of the gas Mathematically, P = KHX where P is the partial pressure of the gas; and X is the fraction of the gas in the solution and KH is constant of Henry Law. 6. The steam pressure of a liquid is the pressure exerted by its steam when it is in dynamic balance with its liquid, in a closed container. 7. According to Raoults Law, the vapor pressure of a solution containing a non-volatile solute is directly proportional to the fraction of solvent molecules (XA.) The constant proportionality is the vapor pressure of the pure solvent, i.e. P× XA or P = P° XA. 8. A solution that obeys the Raoult Law at all concentrations and temperatures is known as an ideal solution. 9. Features of an ideal solution: (a) ╖sol V = 0, that is, there is no change in volume when an ideal solution is formed. (b) ▸sol H= 0; i.e., the heat is not evolved or absorbed during the formation of an ideal solution. 10. (a) The solution shows positive deviation from the Raoult Law if its vaporistic pressure is higher than that provided by the Raoult Law. (b) The solution shows negative deviation if its steam pressure is lower than the one provided by the Raoult Law. 11. The Colligative properties of the solutions are those properties that depend only on the number of particles found in the solution and not on their nature. Such properties are (a) Relative downfall in steam pressure, (b) Elevation of boiling point, (c) Depression of freezing point and (d) osmotic pressure. 12. Thus, according to the Raoult Law, the relative lowering of the vapor pressure of a solution is equal to the fraction of sulute molecules. 13. For a diluted solution, the elevation at the boiling point was proportional to the molocity of where (95)Tb is the elevation at the boiling point, 'm' is the molality and Kb is the constant Molal elevation 14. Depression in the freezing point is proportional to the molality of the solution. where Kf is constant molal depression (the constant depression freezing point.) 15. The spontaneous flow of solvent molecules from a diluted solution in aconcentrated when the two are separated by a perfect sernipermeable membrane is called osmosis. 16. Osmotic pressure (Ï) is the pressure which be applied on the side of the solution (most concentrated solution) to avoid the passage of the pure solvent through a sernipermeable membrane. Mathematically, RT where n is the osmotic pressure of the solution, C is the concentration of solution nB is the number of solute mols, V is the volume of the solution in liters, R is the gas constant and T is the temperature on the Kelvin scale. 17. Hisotonic solutions are the ones that have the same osmotic pressure. They also have the same molar concentration. For isotonic solutions, Ï1 = Ï2 In addition, C1 = C2 18. The vanât Hoff factor, «¡¡¡¡¡¡¡¡¡¡¡¡¡¡¡¡ is used to express the degree of association or dissociation of solutes in solution. It is the relationship between the normal and observed molar masses of the solute, that is, 19. In the case of association, the molar mass observed is higher than the normal value, the factor 'T' has a value less than 1. But in case of dissociation, the vanâ¦t Hoff factor is more than one because the observed molar mass has a lower value. 20. In the case of solutes which do not undergo any association or dissociation in a solvent, Vant Hoff's factor, '¡¡¡¡¡¡', will be equal to one because the molar masses observed and normal will be the same. 21. The inclusion of the vanâ¦t Hoff factor, “F”, changes the equations for colligative properties as follows: Chemistry Notes Class 12 Apni Kaksha Class 12 Chemistry Notes: The best handwritten notes for class 12. Here, we have organized all the PDF chapter notes for the Class 12 Chemistry. These are the best chemistry notes of the class 12 of Aman Dhattarwal and Apni Kaksha team. 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A solution is a homogeneous mixture of two or 9. More chemically non-reactive substances. The components of a solution generally cannot be separated from filtration, installation or centrifuge. 2. A solution can be classified as a solid, liquid or gaseous solution. 3. SOLUBILITY is defined as the quantity of soluto in a solution saturated per 100g of a solvent. 4. The solubility of a gas in a liquid depends on (a) the nature of the gas and the nature of the liquid, (b) the temperature of the system, and (c) the pressure of the gas. 5. The pressure effect on the solubility of a gas in a liquid is regulated by the law of Enrico. It is stated that the solubility of a gas in a liquid at a given temperature in directly proportional to the partial pressure of the gas mathematically, p = khx where p is the partial pressure of the gas; and x is the hamlet of gas in the solution and kh is constant of Henry Law. 6. The vapor pressure of a liquid is the pressure exerted by its steam when it is dynamic equilibrium with its liquid, in a closed container. 7. According to Raoults Law, the pressure of the vapor of a solution containing a non-volatile solute is directly proportional to the mass fraction of the solvent (XA). The constant proportional is the pressure of the vapor of the pure solvent, that is PÃ- XA or P = PÅ ° XA. 8. A solution that obeys the law of raoult to all concentrations and temperatures is known as an ideal solution. 9. Features of an ideal solution: (a) â † sol v = 0, ie, there is no change in volume when an ideal solution is formed. (b) â † sol h = 0; That is, heat has not evolved nor to the formation of an ideal solution. 10. (a) The solution shows positive deviation by the law of Rault if its vaporist pressure is higher than that provided by the law of Rault. (b) The solution shows negative deviation if its steam pressure is lower than that provided by the law of Rault. 11. The colligative properties of the solutions are those properties that only depend on the number of solute particles in the solution and not by their nature. These properties are (a) relative lowering in the steam pressure, (b) elevation of the boiling point, (c) depression of the freezing point and (d) osmotic pressure. 12. So, according to the law of Rault, the relative lowering of the steam pressure of a solution is equal to the fraction of mole of the solute. 13. For a diluted solution, the elevation at the point of It was proportional to the Molosity of the TB is the elevation at the boiling point, 'M' is the molality and KB is the elevation Molal Molal 14. Depression in the freezing point († TF) is proportional to the molability of the solution. Where KF is constant in moral depression (constant of the depression of the freezing point). 15. The spontaneous flow of solvent molecules from a diluted solution in a concentrated solution when the two are separated from a sergibly perfect membrane is called osmosis. 16. Osmotic pressure (ï €) is the pressure that must be applied to the side of the solution (most concentrated solution) to simply avoid the passage of the pure solvent in it through a sergipreable membrane. Mathematically, ï € = CRT = NB / V- RT where n is the osmotic pressure of the solution, c is the concentration of the NB solution is the number of solute jets, v is the volume of the solution in liters, r is the gas constant and T is the temperature on the Kelvin scale. 17. Hisotonic solutions are those solutions that have the same osmotic pressure. They also have the same molar concentration. For isotonic solutions, ï € 1 = ï € 2 also, c1 = c2 18. Van’ T Hoff Factor, “I’TM is used to express the extent of the association or dissociation of the SOLINE in solution. It's a relationship that dies of the normal molar masses and you look at the solute, me. E., 19. In case of association, the molar mass observed is more than normal, the factor â€ «has a value less than one. But in case of dissociation, the factor Hoff van’T is more than one because the observed molar mass has a lower value. 20. In case of solutes that do not undergo any association or dissociation in a solvent, the factor of hoff vase, Â € ~ Â », will be equal to one because the molar masses observed and normal will be the same. 21. Inclusion of the Hoff Van’ T factor, “F, changes the equations for colligative properties as follows: Class 12 Chemistry Notes Hsstive Chemistry