

CHEMSITRY**CLASS: XII****Solutions****Competitive**

o	Questions
1	Freezing point of the solution, prepared by dissolving 6 g urea in 100 g water is -1°C . What will be the freezing point of the solution prepared by dissolving 342 g sugar in 1000 g water? (Ans. -1°C)
2	How much mass of water is required to make $k_b = \Delta T_b$ when 18 g of glucose is dissolved in it? (Ans. 100 g water)
3	What should be the concentration of an unknown (x) undissociated solute so that its elevation in boiling point is equal to that of 0.1 M NaCl solution? (Ans. = 0.2 M)
4	Arrange the following in the decreasing order of their freezing point? 0.05 M AgNO_3 , 0.04 M Na_2SO_4 , 0.14 M urea, 0.075 M ZnSO_4
5	When acetic acid is dissolved in benzene, the molar depression measurement method gives its molar mass to be 120 g/mol. What is the value of Van't Hoff factor (i) for acetic acid? (Ans.= 0.5)
6	What is the relation between relations in boiling points T_1 and T_2 respectively for equimolar solutions of $\text{Ca}(\text{NO}_3)_2$ and $\text{Al}(\text{NO}_3)_3$? (Ans. $T_2 > T_1$)
7	Freezing point of an aqueous solution of non ionic solute is -0.186°C . The values of molal elevation constant and molal depression constant are respectively 0.512 and $1.86^{\circ}\text{C Kg/mol}$. What will be the elevation of the boiling point? (w = 72 g)
8	Whose elevation in boiling point will be same as for 0.1 m KNO_3 ? a) 0.1 m potassium sulphate b) 0.1 m urea c) 0.1 m Sodium Chloride d) 0.1 m Aluminium nitrate
9	What is the normality of 0.2 M H_3PO_3 solution? a) 0.1 N b) 0.2 N c) 0.6N d) 0.4N
10	6.02×10^{20} molecules of urea are present in 100 ml of its solution. The concentration of solution is _____ a) 0.02 M b) 0.001 M c) 0.10 M d) 0.0001M
11	Which of the following pairs of solutions contain isotonic solutions at normal temperature? a) 0.1 M urea and 0.1 M NaCl b) 0.2 M BaCl_2 and 0.2 M urea c) 0.1 M NaCl and 0.1 M K_2SO_4 d) 0.1 M $\text{Ba}(\text{NO}_3)_2$ and 0.1 M Na_2SO_4
12	10 ppm hardness of Ca^{+2} in water means _____ a) 0.001 g CaCl_2 is present in 1 Kg water b) 10 g CaCl_2 is present in 1000 g water c) 0.01 g CaCl_2 is present in 1Kg water d) 0.1 g CaCl_2 is present in 10,000 g water
13	What will be the normality of 250 ml solution of H_2SO_4 having the value of pH =0? a) 2 N b) 1 N c) 0.5 N d) 0.25 N
14	Two liquids X and Y form an ideal solution at 300K, the vapour pressure of the solution containing 1 mole of X and 3 moles of Y are 550 nm. At the same temperature, if 1 mole of Y is further added to this solution, vapour pressure of the solution increases by 10nm. Hence vapour pressure of X and Y in their pure states will be respectively _____ a) 200 nm and 300 nm b) 300 nm and 400 nm c) 400 nm and 600 nm d) 500 nm and 600 nm
15	A solution containing 30 g of non volatile solute exactly in 90 g of H_2O has a v.p. of 2.8 K Pa at 298 K. Further 18 g of H_2O is then added to the solution, a new v.p. becomes 2.9 K Pa at 29 K. Calculate a) molar mass of solute b) vapour pressure of H_2O at 298 K. (Ans. 3.4 K Pa)