

## ST. LAWRENCE HIGH SCHOOL A JESUIT CHRISTIAN MINORITY INSTITUTION WORKSHEET-43(CLASS-12) TOPIC- SOLUTION SUBTOPIC- COLLIGATIVE PROPERTIES



SUBJECT – CHEMISTRY DURATION – 30 mins F.M. - 15 DATE -18.07.20

1.1 Which one of the following will exhibit highest osmotic pressure at 25°C? a) KCl b) Glucose c) Urea d) Calcium chloride

1.2 What is the freezing point of 0.05 molal solution of a non-electrolyte in water? a) + 3.72°C b) - 0.093°C c) - 186°C d) -93°C

1.3 If ethylene glycol is added to water in radrator cars during winter then it would lead to: a) Reducing specific heat b) Reducing viscosity c) Lowering in freezing point d) Lowering in boiling point.

1.4 Haemolysis is the phenomenon on which cells are swelled up and then burst if placed in a: a) Isotonic solution b) None of these c) Hypertonic solutions d) Hypotonic solution

1.5 Two solutions C and D are separated by a semi-permeable membrane. If liquid flows from D to C then.

a) Both have same concentration b) D is less concentrated than C c) D is more concentrated than C d) None of these

1.6 When a thin slice of sugar beet is placed in a concentrated solution of NaCl then sugar beet will.....

a) Dissolve in solution b) Neither absorb nor lose water c) Absorb water from solution d) Lose water from its cell

1.7 ..... aqueous molal solution have highest freezing point.

a) Urea b) Barium chloride c) Potassium bromide d) Aluminium sulphate

#### 1.8 When a solute is dissolved in water it shows:

a) Decrease in freezing point of water b) Decrease in boiling point of water

c) Increase in vapour pressure of water d) all of the above

# 1.9 When sucrose is added to water, what is the change observed in boiling and freezing points of water?

a) Both boiling point and freezing point decreases

- b) Both boiling point and freezing point increases
- c) Boiling point increases and freezing point decreases
- d) Boiling point decreases and freezing point increases

1.10 ..... Shows the presence of strong intermolecular forces in a liquid.a) A low heat of vaporization b) A low critical temperature c) A low vapour pressured) A low boiling point

1.11 60 ml of an acidic solution is neutralized by 30 ml of 0.4 N base. The strength of acid solution is:

a) 0.1 N b) 0.3 N c) 0.4 N d) 0.2 N

### 1.12 The molarity of 4.6 N $H_2SO_4$ solution is:

a) 0.46 M b) 0.23 M c) 4.6 M d) 2.3 M

1.13 The osmotic pressure of 0.020 M solutions of KI and of sucrose ( $C_{12}H_{22}O_{11}$ ) are 0.565 atm and 0.345 atm respectively. The Van't Hoff factor for KI is: a) 0.63 b) 1.63 c) 1.90 d) 0.90

1.14 A solution contains 20.0g of glucose,  $C_6H_{12}O_6$ , in 100 g of water. What is the freezing point of the solution (Kf = 1.86°C / m)? a) - 2.06°C b) - 0.20°C c) + 0.32°C d) - 0.32°C

1.15 Which of the following does not changes with the change in temperature? i. Mole fraction. ii. Molality.

a) None of the above b) Both i & ii c) i d) only ii

### PREPARED BY: MR. ARNAB PAUL CHOWDHURY