Chemistry - 11th Class Chemistry Short Questions Chapter 9 Preparation

Q1. Why the non-ideal solutions do not obey the Raoult's law?

Ans 1: Mnay solutions do not behave ideally as they show deviation from Raoult's law due to difference in their molecular structure I.e. Size, shape and intermolecular forces.During their formation change in volume and enthalpy take place.Hence they show deviation from ideality.

Q2. The total volume of the solution by mixing 100 cm^3 Of water 100 cm^3 Of alcohol may not be equal to 200 cm^3 Justify it?

Ans 1: Alcohol and water are mix in all proportions.However, the properties of such solutions are not strictly additive.Generally, the volume decreases ,mixing but in some cases it increases.Heat may be evolved or absorbed during the formation of such solutions.

Q3. Give the condition of colligative properties?

Ans 1: There are following conditions for colligative properties:

1. Solution must be dilute.
2. Solute must be non-volatile.
3. Solute must be non-electrolyte.

Q4. Can sugar cannot be dissolved in benzene.Give reason?

Ans 1: Can-sugar is apolar covalent substance and it is soluble in polar solvent like water. Sugar dissolve in water due to the formation of H-bonding between solute-solvent,but not in benzene.As we simply say that solubility based upon principle"Like dissolves like".

Q5. Why some properties are called colligative properties?

Ans 1: Colligative properties are called so because these depend upon the number of solute particle in definite amount of solvent and independent on the nature of solute.For example lowering of vapour pressure of water, caused by the addition of 6g of urea, 18 g of glucose and 34.2 g of sucrose is same although the solute particles are of different nature but their numbers are same.

Q6. NaCl and KNO_3 Lowers the melting point of ice.Give reason?

Ans 1: When NaCl andKNO_3 Is added to H_2O , is vapour pressure is lowered. Due to lowering of vapour pressure, solution freezes below than the freezing point of water.Hence NaCl and KNO_3 Is used to lower the melting point of ice.

Q7. Beckmann's thermometer is used to note the depression in freezing point.Explain with reason?

Ans 1: There is a very small difference between freezing point of pure solvent and its dilute solution.Ordinary thermometer can read up to 0.5K.Hence theses cannot differentiate between freezing point of pure solvent and solution.
Beckmann' sthermometer can read up to 0.01K.Hence it cn exactly measure the freezing point of pure solvent and solution.

Q8. What are the names major parts of apparatus used in Landsberger's method for elevation of boiling point?

Ans 1:

1. An inner tube with a hole in its side.This tube is graduated.
2. A boiling flask which send the solvent vapours into the graduated tube through a rosehead..
3. An outer tube, which receives hot solvent vapours coming from the side hole of the inner tube.
4. A thermometer which can read up to 0.01K.

Q9. The concentration in terms of molality is independent of temperature but molarity depends upon temperature .Why?

Ans 1: In molality mass of solvent is taken.Mass us independent of temperature.In molarity volume of solution is take.Volume changes by change in temperature.

Q10. Define Colligative properties.Name important colligative properties?

Ans 1: Colligative Properties: The properties of a solution which is based upon the number of solute particles and independent of the nature of solute is called colligative properties.Name of some colligative properties are:

1. Lowering of vapour pressure
2. Depression in freezing point
3. Elevation in boiling point
4. Osmotic pressure
