MULTIPLE CHOICE QUESTIONS
CLASS-XII
SUBJECT: CHEMISTRY
CHAPTER: SOLUTION

Q. N	**MULTIPLE CHOICE QUESTIONS**	option
1	At equilibrium the rate of dissolution of a solid solute in a volatile liquid solvent is (a) less than the rate of crystallization (b) greater than the rate of crystallization (c) equal to the rate of crystallization (d) zero	C
2	Low concentration of oxygen in the blood and tissues of people living at high altitude is due to (a) low temperature (b) low atmospheric pressure (c) high atmospheric pressure (d) both low temperature and high atmospheric pressure	B
3	Considering the formation, breaking and strength of hydrogen bond, predict which of the following mixture will show a positive deviation from Raoulf s law? (a) Methanol and acetone (b) Chloroform and acetone (c) Nitric acid and water (d) Phenol and aniline	A
4	Colligative properties depend on (a) the nature of the solute particles dissolved in solution (b) the number of solute particles in solution (c) the physical properties of the solute particles dissolved in solution (d) the nature of solvent particles	B
5	Which of the following aqueous solution should have the highest boiling point? (a) 1.OM NaOH (b) 1.0M Na_2SO4 (c) 1.0M NH4NO3 (d) l.OM KNO3	B
6	In comparison to a 0.01 M solution of glucose, the depression in freezing point of a 0.01 M $MgCl_2$ solution is (a) the same (b) about twice (c) about three times (d) about six times	C
7	An unripe mango placed in a concentrated salt solution to prepare pickle, shrivels because (a) it gains water due to osmosis (b) it loses water due to reverse osmosis (c) it gains water due to reverse osmosis (d) it loses water due to osmosis	D
8	The value of van't Hoff factor.s for KCl, NaCl and K_2SO_4, respectively, are (a) 2, 2 and 2 (b) 2, 2 and 3 (c) 1, 1, and 2 (d) 1, 1 and 1	B
9	Value of Henry's constant KH (a) increases with increase in temperature (b) decreases with increase in temperature (c) remains constant (d) first increases then decreases	A
10	The value of Henry's constant KH is (a) greater for gases with higher solubility (b) greater for gases with lower solubility (c) constant for all gases (d) not related to the solubility of gases	B
11	4 L of 0.02 M aqueous solution of NaCl was diluted by adding one litre of water. The molality of the resultant solution is (a) 0.004 (b) 0.008 (c) 0.012 (d) 0.016	D
12	Isotonic solutions must have the same (a) solute (b) density (c) elevation in boiling point (d) All of the above	C

13	Which of the following statement is false? (a) Units of atmospheric pressure and osmotic pressure are the same. (b) In reverse osmosis, solvent molecules move through a semipermeable membrane from a region of lower concentration of solute to a region of higher concentration. (c) The value of molal depression constant depends on nature of solvent. (d) Relative lowering of vapour pressure, is a dimensionless quantity.	B
14	At a given temperature, osmotic pressure of a concentrated solution of a substance (a) is higher than that of a dilute solution (b) is lower than that of a dilute solution (c) is same as that of a dilute solution (d) cannot be compared with osmotic pressure of dilute solution	A
15	The unit of ebullioscopic constant is , – ; **(a)** K kg mol^{-1} or K $(molality)^{-1}$ (b) mol kg^{-1} K^{-1} or K^{-1} (molality) **(b)** kg mol^{-1} K^{-1} or K^{-1} $(molality)^{-1}$ (c) K mol kg^{-1} or K(molality)	A
16	Which of the following statement is false? (a) Two different solutions of sucrose of same molality-prepared in different solvents will have the same depression in freezing point. (b) The osmotic pressure of a solution is given by the equation 3.14(pi) = CRT (where C is the molarity of the solution). (c) Decreasing order of osmotic pressure for 0.01 M aqueous solutions of barium chloride, potassium chloride, acetic acid and sucrose is $BaCl_2$> KCl > CH_2COOH > sucrose (d) According to Raoult's law, the vapour pressure exerted by a volatile component of a solution is directly proportional to its mole fraction in the solution.	A
17	_____ obeys Raoult's law in all stages of concentration. (a) Ideal Solution (b) Non-Ideal solution (c) Real Solution (d) None of the mentioned	A
18	Which of the following condition is not satisfied by an ideal solution? (a) $\Delta H_{mixing} = 0$ (b) $\Delta V_{mixing} = 0$ (c) Raoult's Law is obeyed (d) Formation of an azeotropic mixture	D
19	The boiling point of an azeotropic mixture of water and ethanol is less than that of water and ethanol. The mixture shows (a) no deviation from Raoult's Law. (b) Positive deviation from Raoult's Law. (c) Negative deviation from Raoult's Law. (d) That the solution is unsaturated.	B
20	The molal elevation constant depends upon (a) nature of solute. (b) Nature of the solvent. (c) Vapour pressure of the solution. (d) Enthalpy change.	B
21	Which has the lowest boiling point at 1 atm pressure? (a) 0.1 M KCl (b) 0.1 M Urea (c) 0.1 M $CaCl_2$ (d) 0.1 M $A1Cl_3$	B
22	Partial pressure of a solution component is directly proportional to its mole fraction. This is known as (a) Raoult's law (b) Henry's law (c) Distribution law (d) Ostawald's dilution law	A
23	The molarity of the solution containing 7.1 g of Na2SO4 in 100 ml of aqueous solution is (a) 2 M (b) 0.5 M (c) 1 M (d) 0.05 M	B
24	If mole fraction of a solute in 1 kg benzene is 02, then molality of solute is---- (a) 3.2 (b)2 (c) 4 (d) 3.6	A
25	The osmotic pressure of a solution can be increased by (a) increasing the volume (b) increasing the number of solute molecules (c) decreasing the temperature (d) removing semipermeable membrane	B
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