Solutions

1. Mole fraction of glycerine $C_3H_5(OH)_3$ in solution containing 36 g of water and 46 g of glycerine is
(a) 0.46
(b) 0.40
(c) 0.20
(d) 0.36

▼ **Answer**

Answer: c

---

2. Out of molality (m), molarity (M), formality (F) and mole fraction (x), those which are independent of temperature are
(a) M, m
(b) F, x
(c) m, x
(d) M, x

▼ **Answer**

Answer: c

---

3. 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

▼ **Answer**

Answer: d

---

4. 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.

▼ **Answer**

Answer: b

---

5. 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 $A1Cl_3$

▼ **Answer**

Answer: b

6. Osmotic pressure of a solution is 0.0821 atm at a temperature of 300 K. The concentration in moles/litre will be
(a) 0.33
(b) 0.666
(c) 0.3×10^{-2}
(d) 3

▼ **Answer**

Answer: c

---

7. People add sodium chloride to water while boiling eggs. This is to
(a) decrease the boiling point.
(b) increase the boiling point.
(c) prevent the breaking of eggs.
(d) make eggs tasty.

▼ **Answer**

Answer: b

---

8. The van't Hoff factor (i) accounts for
(a) degree of solubilisation of solute.
(b) the extent of dissociation of solute.
(c) the extent of dissolution of solute.
(d) the degree of decomposition of solution.

▼ **Answer**

Answer: b

---

9. Which relationship is not correct?

(a) $\Delta T_b = \frac{K_b.1000.W_2}{M_2.W_1}$ (b) $M_2 = \frac{K_f.1000.W_1}{W_2.\Delta T_b}$

(c) $\pi = \frac{n_2}{V}$ (d) $\frac{p^o - p_s}{p^o} = \frac{W_2}{M_2} \times \frac{M_1}{W_1}$

▼ **Answer**

Answer: b

---

10. The molal elevation constant depends upon
(a) nature of solute.
(b) nature of the solvent.
(c) vapour pressure of the solution.
(d) enthalpy change.

▼ **Answer**

Answer: b
