Yakeen NEET 2.0 2026

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Solutions

DPP: 4

Q1 Osmotic pressure is $0.0821\ \text{atm}$ at temperature of $300\ \text{K}$. Find concentration in mole/litre
(A) 0.033
(B) 0.066
(C) 0.33×10^{-2}
(D) 3

Q2 A solution containing $6\ \text{g}$ of a solute dissolved in 250ml of water gave an osmotic pressure of $4.5\ \text{atm}$ at 27°C. Calculate the boiling point of the solution. The molal boiling point elevation constant for water is $0.52\ \text{K kg mol}^{-1}$.
(A) 100.095°C
(B) 10.095°C
(C) 1.095°C
(D) 1000.095°C

Q3 $1.00\ \text{g}$ of a non-electrolyte solute when dissolved in $50\ \text{g}$ of benzene lowered the freezing point of benzene by $0.40\ \text{K}$. K_f for benzene is $5.12\ \text{K kg mol}^{-1}$. Molecular mass of the solute will be
(A) $256\ \text{g mol}^{-1}$
(B) $2.56\ \text{g mol}^{-1}$
(C) $512 \times 10^3\ \text{g mol}^{-1}$
(D) $2.56 \times 10^4\ \text{g mol}^{-1}$

Q4 When mercuric iodide is added to the aqueous solution of potassium iodide, the
(A) freezing point is raised
(B) freezing point does not change
(C) freezing point is lowered.
(D) boiling point does not change

Q5 Osmotic pressure of a solution at a given temperature
(A) Increases with concentration
(B) Decreases with concentration
(C) Remains same
(D) Initially increases and then decreases

Q6 Which one is a colligative property?
(A) Boiling point
(B) Vapour pressure
(C) Osmotic pressure
(D) Freezing point

Q7 The osmotic pressure of a solution containing $1.71\ \text{g}$ of sucrose (mol. Wt. 348) dissolved to make a litre of solution at 27°C ($\text{R} = 0.082\ \text{L atm K}^{-1}\ \text{mol}^{-1}$) is
(A) 0.246 (B) 0.0273
(C) 0.164 (D) 0.123

Q8 Insulin is dissolved in a suitable solvent and the osmotic pressure π in atm of solutions of various concentrations C in g/cm^3 is measured at 27°C. The slope of plot of π against C is found to be $4.1 \times 10^{-3}\ \text{atm cm}^3\ \text{g}^{-1}$. The molecular mass of insulin is:
(A) 6×10^3
(B) 3×10^6
(C) 6×10^6
(D) 3×10^3

Q9 For determination of molar mass of colloids, polymers and protein, which property is used?
(A) Diffusion pressure
(B) Atmospheric pressure
(C) Osmotic pressure
(D) Turgor pressure

Q10 Desalination of sea water can be done by
(A) Osmosis
(B) Reverse osmosis
(C) Filtration
(D) Diffusion

Answer Key

Q1	(C)
Q2	(A)
Q3	(A)
Q4	(A)
Q5	(A)
Q6	(C)
Q7	(D)
Q8	(C)
Q9	(C)
Q10	(B)