

JEE MAIN SOLUTIONS — ELEVATION OF BOILING POINT — PYQS

Max. Marks: 16

Questions: 4

Section A (MCQ) — 3 questions

Q.1 Consider the following aqueous solutions.

- I. 2.2 g glucose in 125 mL of solution.
- II. 1.9 g calcium chloride in 250 mL of solution.
- III. 9.0 g urea in 500 mL of solution.
- IV. 20.5 g aluminium sulphate in 750 mL of solution.

The **correct** increasing order of boiling point of these solutions will be :

[Given : Molar mass in g mol^{-1} : H = 1, C = 12, N = 14, O = 16, Cl = 35.5, Ca = 40, Al = 27 and S = 32]

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) $\text{III} < \text{I} < \text{II} < \text{IV}$ (2) $\text{II} < \text{III} < \text{IV} < \text{I}$
 (3) $\text{II} < \text{III} < \text{I} < \text{IV}$ (4) $\text{I} < \text{II} < \text{III} < \text{IV}$

Scan or tap for the full solution



Q.2 Elements P and Q form two types of non-volatile, non-ionizable compounds PQ and PQ₂. When 1 g of PQ is dissolved in 50 g of solvent 'A', ΔT_b was 1.176 K while when 1 g of PQ₂ is dissolved in 50 g of solvent 'A', ΔT_b was 0.689 K. (K_b of 'A' = 5 K kg mol⁻¹). The molar masses of elements P and Q (in g mol⁻¹) respectively, are :

[JEE Main 2026 (Online) 21st January Morning Shift]

- (1) 25, 60 (2) 60, 25 (3) 65, 145 (4) 70, 110

Scan or tap for the full solution



Q.3 2 moles each of ethylene glycol and glucose are dissolved in 500 g of water. The boiling point of the resulting solution is: (Given : Ebullioscopic constant of water = $0.52 \text{ K kg mol}^{-1}$)

[JEE Main 2025 (Online) 3rd April Morning Shift]

- (1) 377.3 K (2) 379.2 K (3) 375.3 K (4) 277.3 K

Scan or tap for the full solution



Section B (Numerical) — 1 question

Q.4 When 1 g each of compounds AB and AB₂ are dissolved in 15 g of water separately, they increased the boiling point of water by 2.7 K and 1.5 K respectively. The atomic mass of A (in amu) is _____ $\times 10^{-1}$ (Nearest integer)
(Given : Molal boiling point elevation constant is 0.5 K kg mol⁻¹)

[JEE Main 2025 (Online) 2nd April Evening Shift]

Scan or tap for the full solution



ANSWER KEY

Section A (MCQ) — 3 questions

Ques.	1	2	3							
Ans.	4	1	1							

Section B (Numerical) — 1 question

[illegible]