

PYQSide

JEE MAIN SOLUTIONS — ELEVATION OF BOILING POINT — PYQS

Max. Marks: 16

Questions: 4

Section A (MCQ)

- 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) III < I < II < IV (2) II < III < IV < I
 (3) II < III < I < IV (4) I < II < III < 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 PQ_2 . When 1 g of PQ is dissolved in 50 g of solvent 'A', ΔT_b was 1.176 K while when 1 g of PQ_2 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 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)

- Q.4** When 1 g each of compounds AB and AB_2 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)

Ques.	1	2	3								
Ans.	4	1	1								

Section B (Numerical)

Ques.	4										
Ans.	25										