

Solutions

NEET previous year questions · Chemistry

6 questions from the official papers: NEET 2026 (2), Re-NEET 2026 (2), NEET 2020 (2). Each is followed by its answer and a worked solution written by BrainIt. Generated on 23 October 2026.



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1. NEET 2026 · Q71

Identify the correct statements. Choose the correct answer from the options given below.

Statement I: The molality of 2.5 g of ethanoic acid (Molar mass: 60 g mol^{-1}) in 75 g of benzene solution is 0.556 m.

Statement II: The molarity of a solution containing 5 g of NaOH (molar mass: 40 g mol^{-1}) in 450 mL of solution is 0.278 M at 298 K.

Statement III: Aquatic species are more comfortable in cold water.

Statement IV: The solubility of gas increases with decrease in pressure.

Statement V: For a binary mixture of A and B, the number of moles of A and B are n_A and n_B respectively. The mole fraction of B will be $x_B = \frac{n_B}{n_A + n_B}$.

- (1) I, II and III only (2) I and II only
(3) I and III only (4) I, IV and V only

Answer (1)

Sol. (I) molality = $(2.5/60) \times (1000/75) \approx 0.556 \text{ m}$, correct. (II) molarity = $(5/40) \times (1000/450) \approx 0.278 \text{ M}$, correct. (III) correct: gas solubility rises as temperature falls, so cold water holds more dissolved O_2 and aquatic life is more comfortable. (IV) wrong: by Henry's law gas solubility increases with increasing pressure. (V) wrong: mole fraction of B is $n_B/(n_A + n_B)$, not $n_A/(n_A + n_B)$. Hence only I, II and III are correct.

2. NEET 2026 · Q89

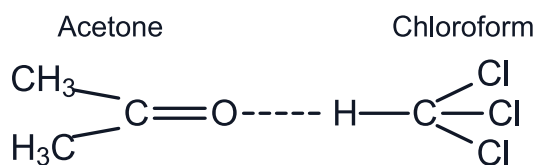
Mixture of chloroform and acetone forms a solution with negative deviation from Raoult's law due to:

- (1) Increase in escaping tendency of molecules of each component.
- (2) Formation of hydrogen bonding between acetone and chloroform.
- (3) Stronger intermolecular forces between chloroform molecules than those between chloroform and acetone molecules.
- (4) Repulsive forces.

Answer (2)

Sol. An acetone-chloroform mixture shows negative deviation because a new hydrogen bond forms between the chloroform C-H and the carbonyl oxygen of acetone, making the A-B interactions stronger than the A-A and B-B interactions. This lowers the escaping tendency and hence the vapour pressure, so (2) is correct. Increased escaping tendency or repulsive forces would instead cause positive deviation.

Escaping tendency decreases, $\therefore$ vapour pressure decreases and $\therefore$ boiling point increases.



3. Re-NEET 2026 · Q54

Assertion (A): For an ideal solution formed by mixing liquids **P** and **Q**, $\Delta_{mix}H = 0$ and $\Delta_{mix}V = 0$

Reason (R): No interactions occur between **P** and **Q**

In the light of the above statements, choose the most appropriate answer from the options given below.

- (1) Both A and R are correct and R is the correct explanation of A
- (2) Both A and R are correct but R is NOT the correct explanation of A
- (3) A is correct but R is not correct
- (4) A is not correct but R is correct

Answer (3)

Sol. The assertion is a defining property of an ideal solution: because the molecules pack and interact just as they did before mixing, neither heat nor volume changes on mixing. The reason misstates why. Interactions certainly DO occur between P and Q - the requirement is that the P-Q interaction be equal in strength to the P-P and Q-Q interactions it replaces, so the energy terms cancel. A solution with no intermolecular forces at all would be a gas, not a liquid mixture. NCERT Class 12, Solutions (ideal and non-ideal solutions).

4. Re-NEET 2026 · Q71

Consider the following statements about the solutions formed by mixing two liquids.

Statement I: An ideal solution thus formed obeys Raoult's law throughout the composition range.

Statement II: Mixture of chloroform and acetone shows negative deviation from Raoult's law.

Statement III: Mixture of aniline and phenol shows positive deviation from Raoult's law.

- (1) I and II only
- (2) II and III only
- (3) I only
- (4) I and III only

Answer (1)

Sol. Statement I is the definition of ideality - Raoult's law must hold over the whole composition range, not merely at the dilute ends. Statement II is correct because chloroform's C-H is acidic enough to hydrogen-bond to acetone's carbonyl oxygen, an interaction stronger than either pure liquid had, so escaping tendency drops and the deviation is negative. Statement III is wrong for the same underlying reason: aniline and phenol also form strong hydrogen bonds with each other, which gives a NEGATIVE deviation, not a positive one. NCERT Class 12, Solutions.

5. NEET 2020 · Q113

The freezing point depression constant (K_f) of benzene is $5.12 \text{ K kg mol}^{-1}$. The freezing point depression for the solution of molality 0.078 m containing a non-electrolyte solute in benzene is (rounded off upto two decimal places) :

- (1) 0.80 K
- (2) 0.40 K
- (3) 0.60 K
- (4) 0.20 K

Answer (2)

Sol. The freezing point depression ΔT_f is given by $\Delta T_f = K_f \times m$. Substituting the values, $\Delta T_f = 5.12 \times 0.078 = 0.40 \text{ K}$. Chapter: Solutions.

6. NEET 2020 · Q115

The mixture which shows positive deviation from Raoult's law is

- (1) Benzene + Toluene
- (2) Acetone + Chloroform
- (3) Chloroethane + Bromoethane
- (4) Ethanol + Acetone

Answer (4)

Sol. Ethanol and acetone show positive deviation from Raoult's law due to weaker intermolecular interactions in the solution compared to pure components. Chapter: Solutions.

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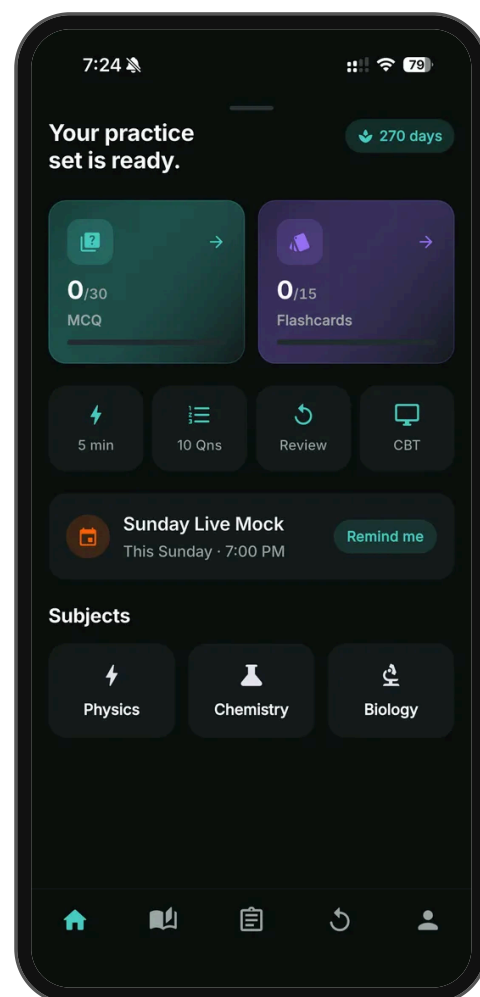
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