

NEET SOLUTIONS — VAPOUR PRESSURE OF LIQUID–LIQUID SOLUTIONS AND RAOULT'S LAW — PYQS

Max. Marks: 24

Questions: 6

Section A (MCQ) — 6 questions

Q.1 The correct option for the value of vapour pressure of a solution at 45°C with benzene to octane in molar ratio 3 : 2 is :

[At 45°C vapour pressure of benzene is 280 mm Hg and that of octane is 420 mm Hg. Assume ideal solution] [NEET (UG) 2021]

- (1) 350 mm of Hg (2) 160 mm of Hg
(3) 168 mm of Hg (4) 336 mm of Hg

Scan or tap for the full solution 

Q.2 Which of the following statements about the composition of the vapour over an ideal 1 : 1 molar mixture of benzene and toluene is correct? Assume that the temperature is constant at 25°C. (Given, vapour pressure data at 25°C, benzene = 12.8 kPa, toluene = 3.85 kPa) [NEET 2016 (Phase 1)]

- (1) The vapour will contain equal amounts of benzene and toluene.
(2) Not enough information is given to make a prediction.
(3) The vapour will contain a higher percentage of benzene.
(4) The vapour will contain a higher percentage of toluene

Scan or tap for the full solution 

Q.3 Vapour pressure of chloroform (CHCl_3) and dichloromethane (CH_2Cl_2) at 25 °C are 200 mm Hg and 41.5 mm Hg respectively. Vapour pressure of the solution obtained by mixing 25.5 g of CHCl_3 and 40 g of CH_2Cl_2 at the same temperature will be (Molecular mass of CHCl_3 = 119.5 u and molecular mass of CH_2Cl_2 = 85 u) [AIPMT 2012 (Mains)]

- (1) 173.9 mm Hg (2) 615.0 mm Hg
(3) 90.6 mm Hg (4) 285.5 mm Hg

Scan or tap for the full solution 

Q.4 p_A and p_B are the vapour pressures of pure liquid components, A and B, respectively of an ideal binary solution. If x_A represents the mole fraction of component A, the total pressure of the solution will be [AIPMT 2012 (Prelims)]

- (1) $p_A + x_A(p_B - p_A)$ (2) $p_A + x_A(p_A - p_B)$
(3) $p_B + x_A(p_B - p_A)$ (4) $p_B + x_A(p_A - p_B)$

Scan or tap for the full solution 

Q.5 The vapour pressure of two liquids P and Q are 80 and 60 torr, respectively. The total vapour pressure of solution obtained by mixing 3 mole of P and 2 mole of Q would be [AIPMT 2005]

- (1) 72 torr (2) 140 torr (3) 68 torr (4) 20 torr

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Q.6 A solution has a 1 : 4 mole ratio of pentane to hexane. The vapour pressures of the pure hydrocarbons at 20°C are 440 mm Hg for pentane and 120 mm Hg for hexane. The mole fraction of pentane in the vapour phase would be [AIPMT 2005]

- (1) 0.200 (2) 0.549 (3) 0.786 (4) 0.478

Scan or tap for the full solution 

ANSWER KEY

Ques.	1	2	3	4	5	6					
Ans.	4	3	3	4	1	4					