



DPP-5 [Azeotropes]

Chapter: Solution

“No one fails because the paper is tough. They fail because preparation was weak.”

- An azeotropic mixture of two liquids has b.p. lower than either of them when it :-**
 - shows a (+ve) deviation from Raoult's law
 - shows no deviation from Raoult's law
 - shows (+ve) deviation from Henry's law
 - shows (-ve) deviation from Henry's law
- Azeotropic mixture are :**
 - Mixture of two solids
 - Those which boil at different temperatures
 - Those which can be fractionally distilled
 - Constant boiling mixtures
- An azeotropic mixture of two liquids boil at a lower temperature than either of them when**
 - It is saturated
 - It does not deviate from Raoult's law
 - It shows negative deviation from Raoult's law
 - It shows positive deviation from Raoult's law
- The azeotropic mixture of water (B.P 100.15°C) and HCl (B.P. -85°C) boils at 108.5°C. When this mixture is distilled, it is possible to obtain :**
 - Pure HCl
 - Pure water
 - Pure water as well as HCl
 - Neither HCl nor H₂O in their pure states
- Minimum boiling azeotropes and Maximum boiling azeotropes respectively on the examples of**
 - Non-ideal solution following +ve deviation and ideal solution
 - Ideal solution and non-ideal solution following negative deviation
 - Both are ideal solution
 - Non-ideal solution showing positive deviation and Non-ideal solution showing negative deviation
- The mixture that forms maximum boiling azeotrope is** [NEET-2019]
 - Water + Nitric acid
 - Ethanol + Water
 - Acetone + Carbon disulphide
 - Heptane + Octane
- Consider the following statement**
 - If one component in a binary solution shows positive deviation, the second component would also show positive deviation.

II. The gases which are easily liquefied, are more soluble in common solvents.

III. Maximum boiling azeotrope is formed by positive deviation.

Choose the correct statement

- (1) I & III
 - (2) II & III
 - (3) I & II
 - (4) I, II & III
8. **The boiling point of an azeotropic mixture of water and ethyl alcohol is less than that of theoretical value of water and alcohol mixture. Mixture shows**
- (1) Solution is highly saturated
 - (2) Positive deviation from Raoult's law
 - (3) Negative deviation from Raoult's law
 - (4) Nothing can be said
9. **A mixture of two liquids A and B having boiling point of A is 70°C , and boiling point of B is 100°C , distills at 101.2°C as single liquid, hence this mixture is** [NSEC-2002]
- (1) Ideal solution
 - (2) Non ideal solution showing +ve deviation
 - (3) Non ideal solution showing -ve deviation
 - (4) Immiscible solution
10. **Azeotropes are :**
- (A) liquid mixtures which distil unchanged in composition
 - (B) liquids which can mix with each other in all proportions
 - (C) solids which form solid solutions of definite compositions
 - (D) gases which can be separated
11. **Which of the following azeotropic solutions has the boiling point more than boiling point of the constituents A and B ?**
- (1) $\text{CH}_3\text{CH}_2\text{OH}$ and CH_3COCH_3
 - (2) CS_2 and CH_3COCH_3
 - (3) CHCl_3 and CH_3COCH_3
 - (4) CH_3CHO and CS_2