VERY SHORT ANSWER QUESTIONS

1. When is the value of Van't Hoff factor more than one?
2. Define azeotropic mixture.
3. Why NaCI solution freezes at lower temperature than water but boils at higher temperature?
4. What will be the nature of the solution when ethyl alcohol and water are mixed?
5 . Which will have a higher boiling point, 0.1 M NaCI or 0.1M $BaCl_2$ solution in water?
6. Why does a solution of ethanol and cyclohexane shows positive deviations? (P.S.E.B.2005)
7. What is an antifreeze?
8. Define an ideal solution.
9. State any two characteristics of ideal solutions.
10. What type of liquids form ideal solutions?
11. What are constant boiling mixtures called?
12. What do you understand by colligative properties?
13. What is antifreeze '?
14, What is molal depression constant or cryoscopic constant?

SHORT ANSWER 'QUESTIONS

15. Write two differences between solutions showing positive deviations and negative deviations.
16. Give four points of difference between osmosis and diffusion.
17. (a) What are non-ideal solutions?
(b) What role does the molecular interaction play in deciding the vapour pressure of solutions
    (i) alcohol and acetone
    (ii) Chloroform and acetone?
18. State Raoult's law for solutions of volatile liquid components. Taking a suitable example, explain the meaning of positive deviations from Raoult's law.
19. What is meant by positive and negative deviations from Raoult's law and how is the sign of Δ_{sol} H related to positive and negative deviations from Raoult's law?
20. State Raouit's law. Discuss the factors for the deviations from this law.
21. How does a non-ideal solution differ from an ideal solution? When does the positive deviation occur from ideality?
22. Define osmotic pressure. Show that it is a colligative property.
23. Define elevation in boiling point. Show that the elevation in boiling point is a colligative property.

LONG ANSWER QUESTIONS

24. (a) What is Van't Hoff factor? What types of values can it have if in solution, the solute molecules undergo
(i) association (ii) dissociation?
(b) What are isotonic solutions?

25. (a) Give the biological significance of Osmosis.
(b) The osmotic pressure of blood is 8.21 atm. at 37°c. How much glucose should be used per litre for an intravenous injection that is at the same osmotic pressure as blood?
(c) Define boiling point and find out an expression for molecular mass of non-volatile solute from elevation in boiling point.
(c) Give unit of Kb.