

MELVISHARAM - 632 509.

SEMESTER EXAMINATIONS, NOVEMBER - 2018

SEMESTER V

U14MCH503 – PHYSICAL CHEMISTRY - I

Maximum: 75 Marks

SECTION - A (10 X 2 = 20 Marks)

Answer **ALL** Questions.

1. What are isotonic solution?
2. What do you understand by positive and negative adsorption?
3. What is it justified to use reduced phase rule equation for solids and liquids?
4. What is steam distillation?
5. What are ideal and non-ideal solution?
6. State the Raoult's law.
7. What is meant by rate of a reaction?
8. What are different methods of determining order of reaction?
9. What is enzyme catalysis?
10. What is Van't Hoff reaction isotherm?

SECTION - B (5 X 5 = 25 Marks)

Answer **ALL** Questions.

11. a) At 298 K, the vapour pressure of water is 23.75 mm of Hg. Calculate the vapour pressure at the same temperature over 5% aqueous solution of urea.
(Or)

- b) Derive a relationship between elevation in boiling point of the solution and the molecular weight of the solute.
12. a) Deduce thermodynamically phase rule.
(Or)
- b) Explain the following terms (i) Phase (ii) Component (iii) Degrees of freedom.
13. a) Mention some applications of distribution law.
(Or)
- b) State and explain Henry's law.
14. a) Bring out the difference between order and molecularity.
(Or)
- b) Explain (i) Reversible reaction (ii) Parallel reaction.
15. a) State and explain the law of mass action.
(Or)
- b) What is Le-Chatelier's principle? Explain with examples.

SECTION - C (3 X10 = 30 Marks)

Answer ANY THREE Questions.

16. Discuss Freundlich adsorption isotherm of a gas on a solid.
17. Draw a labelled phase diagram of water system and discuss its salient features.
18. Write note on the applications of Nernst distribution law.
19. Discuss in detailed about the theory of absolute reaction rates.
20. Deduce Vant Hoff reaction isotherm.
