B.Sc. DEGREE EXAMINATION,APRIL 2019
III Year V Semester
Physical Chemistry - I

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. State Henrys law.
2. What do you mean by depression of freezing point?
3. Find the number of phases and degree of freedom for the dissociation of calcium carbonate.
4. Mention the eutectic composition and eutectic temperature of Pb-Ag system.
5. Define Half life period.
6. Give the expression for the rate constant of a zero order reaction.
7. What do you mean by effective collision?
8. Give an example for consecutive reaction.
9. What is heterogeneous catalysis?
10. Distinguish adsorption from absorption.
11. What are colligative properties?
12. What is congruent melting point?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Derive Duhem Margulus equation.
14. State phase rule and explain the terms involved in it.
15. Derive the expression for the rate constant of first order reaction.
16. Discuss the salient features of collision theory.
17. Explain Frieundlich adsorption isotherm.
18. Discuss about azeotropic distillation.
19. Draw the phase diagram of $FeCl_3 - H_2O$ system.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Derive Clayperon Clausius equation and discuss its applications.
21. Draw the phase diagram of water system and discuss its salient features.
22. Discuss the various methods of determining order of a reaction.
23. Explain the theory of absolute reaction rate and derive the expression for rate constant.
24. Explain Langmuir adsorption isotherm.

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