B.Sc. DEGREE EXAMINATION,APRIL 2020
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 Raoult's law.
2. Write Clapeyron – Clausius equation.
3. State the Gibb's phase rule.
4. Write the reduced phase rule statement.
5. Define Molecularity.
6. Write the Arrhenius equation.
7. What are rate constant.
8. State the Collision theory.
9. Write the BET equation.
10. Write any two applications of adsorption.
11. Define – Freundlich adsorption Isotherm.
12. Write the Henry's law statement.

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

Answer any **FIVE** questions

13. Explain the calculation of molecular weight by using boiling point.
14. Explain the Lead – Silver system with diagram.
15. Derive the rate constants of Second order reactions.
16. Explain the Consecutive, Parallel and Reversible reactions with example.
17. Write differences between Physisorption and chemisorption.
18. Write note on Langmuir adsorption Isotherm.
19. Explain the Na – K system.

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

Answer any **THREE** questions

20. Derive Duhem – Margulas equation for binary mixtures.
21. Explain the Ferric Chloride – Water system with diagram.
22. Explain the methods to determine the order of reactions.
23. Derive rate constant for bimolecular reactions.
24. Write note on Homogeneous and Heterogeneous catalysis.

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