

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc.(Chemistry) END SEMESTER EXAMINATIONS NOVEMBER -2023

SEMESTER -V

20UCHCT5011 - Physical Chemistry - I

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Elucidate azeotropic distillation.
2. Derive Gibbs-Duhem-Margulas equation.
3. Draw and discuss the phase diagram for water system.
4. Discuss any one method to determine the order of a reaction.
5. Describe various methods to determine the rate of reactions.
6. Explain consecutive, parallel and reversible reactions.
7. Discuss Homogeneous and heterogeneous catalysis with an example.
8. Distinguish between Physisorption and Chemisorption with example.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Deduce Clapeyron – Clausius equation.
10. Discuss and draw the phase diagram of lead – silver system and apply Gibbs phase rule.
11. Derive the rate constant for the first order reaction and explain its half-life time.
12. Explain the theory of absolute reaction rates and derive the rate constant for a bimolecular reaction.
13. Derive Langmuir adsorption isotherm and mention its application.
