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 - NOV'2024
SEMESTER - V
22UCHCT5011 - Phase Equilibria and Chemical Kinetics

Total Duration : 2 Hrs.30 Mins.   Total Marks : 60

Section B

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

1. Explain the concept of phase rule with examples.
   Derive Gibbs' phase rule equation.

2. Discuss the application of the phase rule to water system.

3. Define an ideal solution. State and explain Raoult's law.

4. Discuss the principle of azeotropic distillation.

5. Explain the concept of pseudo-first-order reactions with examples.

6. Determine the order of a reaction using different methods.

7. Discuss the factors affecting reaction rates.

8. Compare homogeneous and heterogeneous catalysis with suitable examples.

Section C

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

9. Discuss the formation of compounds with congruent and incongruent melting points, using ferric chloride-water system.

10. Analyse the Nernst distribution law and its applications in association and dissociation.

11. Derive integrated rate equations zero, first, and second order reaction.

12. Explain the collision theory of bimolecular reaction in detail.

13. Deduce and explain ezyme catalysis using Michaelis-Menten equation.

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