

June 2009

M. Sc. (Previous) IInd Semester Examination

CHEMISTRY

Paper VIII (III) : Physical Chemistry - II (MCH 408)

Time 3 Hours]

[Max. Marks 35

Note : Attempt all questions. All questions carry equal marks. The blind candidates will be given 60 minutes extra time.

1. What do you understand by Rate Law ? Describe the Collision Theory of unimolecular reaction and its criticism.
OR
What is Enzyme Catalysis ? Discuss the kinetics of enzyme catalysis. 7
2. Explain B. E. T. adsorption and derive B. E. T. equation
OR
Explain Critical Micellar Concentration and the factors which affecting the Critical Micellar Concentration (CMC). 7
3. What is Polymerisation ? Describe the kinetics and mechanism of Polymerisation.
OR
Define Macromolecules with example and explain light scattering method for the determination of their molecular weight. 7
4. Write notes on the following :
(a) Microscopic Reversibility and Onsager Reciprocity Relation. 4
(b) Entropy Production and Entropy Flow. 3
OR
Discuss Phenomenological Law and derive Phenomenological Equation. 7
- What do you understand by Exchange Current Density ? Derive Butler-Volmer equation by which an electric field can change the rate of an electrode reaction. 7
OR
Mention the postulates of Debye-Huckel Theory and describe Debye-Huckel-Onsager treatment and its application. 7