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SCHOOL OF CHEMICAL & LIFE SCIENCES
M.SC. CHEMISTRY/SEMESTER II
PAPER CODE: MCHCC--201
PAPER TITLE: PHYSICAL CHEMISTRY-II

Time 2 hours

Maximum Marks 60

Abbreviations Used
CLO- Course Outcome, PLO- Program Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Section A **(10x2=20Marks)**

Q.	Very Short Type Questions (Attempt all)	BTL	CLO	PLO
A 1.	What is surface active agents?	1	1	1
A 2.	What is chemical kinetics?	2	2	1
A 3.	What is statistical mechanics?	2	3	1
A 4.	What is order of reaction?	2	4	1
A 5.	What is system and assembly?	1	4	1
A 6.	What is critical micelles concentration?	2	4	1
A 7.	What is pseudo-unimolecular reaction?	2	2	1
A 8.	Why are reactions with molecularity 3 rare?	2	3	1
A 9.	Give four examples of Microemulsion.	2	3	1
A 10.	What is the unit of the Partition function?	2	4	1

Section B **(10x2=20 Marks)**

Q.	Long Type question (Attempt any two out four)	BTL	CLO	PLO
B 1.	Drive expression for rate constant using concepts of Thermodynamics & Statistical Mechanics.	6	1	3
B 2.	What are fast reactions? Explain three techniques to study fast reactions.	5	2	3
B 3.	Derive an expression Translational, Rotational, vibrational, and electronic partition function.	5	2	3
B 4.	What are the factors which affect CMC? How will you determine CMC?	6	3	3

Section C **(7x5=35Marks)**

Q	Short Type questions. (Attempt all questions)	BTL	CLO	PLO
1.	What is the Kinetics of salt effect? OR What is Oscillatory reaction? .	3	1	2
2.	Explain Lindemann Theory of Unimolecular reaction. OR Explain Rice-Ramsperger-Kassel-Marcus Theory	4	2	2
3	What are the different types of Ensembles? OR Derive Thermodynamics properties in terms of partition function?	3	3	2
4	What are the applications of Microemulsion? OR Discuss the classification of surfactants.	3	4	2
5	What do you mean by solubilization? OR Derive Arrhenius Equation?	4	4	2

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