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M.Sc. Chemistry/Semester I
Paper Code: MCHCC--101
Paper Title: Physical Chemistry-I

Time 2 hours Maximum Marks 60

Abbreviations Used
CLO- Course Outcome, PLO- Program Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Section A

Very Short Type Questions (10x2=20Marks)

Q. No	Question	Marks	BTL	CLO	PLO
1.	What is current exchange density?	2	1	1	1
2.	What are the three parts of Phase diagram?	2	2	2	1
3.	Define is quantum numbers?	2	2	3	1
4.	Define phase?	2	2	4	1
5.	State Le-chateliars Principal?	2	1	4	1
6.	What is application of Schodinger Equation?	2	2	4	1
7.	What is surface density fuction?	2	2	2	1
8.	What is ECG?	2	2	3	1
9.	Define surface tension?	2	2	3	1
10.	What are the advantages of nano catalyst?	2	2	4	1

Section B

Long Type question (Attempt any two out four) (10x2=20)

Q. No	Question	Marks	BTL	CLO	PLO
1.	Drive expression for Onsanger Treatment for Ion solvent treatment.	10	6	1	3
2	Derive Lipmann equaqtion.	10	5	2	3
3.	Derive an expression for Energy and position of particles in one dimensional box.	10	5	2	3
4	Explain applications of Quantum mechanics.	10	6	3	3

PTO

Section C

Short Type questions.(Attempt all questions) (4x5=20)

Q.NO	Questions	Marks	BTL	CLO	PLO
1.	Derive Langmuir adsorption isotherm equation? OR Explain the concept of catalyst and nanocatalyst? .	4	3	1	2
2.	Find out the commutator between kinetic energy & momentum? OR Derive the expression of Normalised φ for particle in one dimensional box.	4	4	2	2
3	What are the application of phase diagram of three components? OR How will you determine Excess volume of non ideal system?	4	3	3	2
4	What is Guoy Chapman model of electrified interfaces? OR Explain polarography theory.	4	3	4	2
5	What is electro kinetic phenomenon for surface films? OR Derive expression for vapour pressure of droplet.	4	4	4	2

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