SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

B.Sc. (Hons)-PCM- I Year (I Sem.)	
Course Name: Physical Chemistry -I	**Code: BCY1002**
Time: 02 Hours	**Max Marks: 60**

University Roll No.															
(To be filled by the Student)															

Note: Please read instructions carefully:

a) The question paper has 03 sections and it is compulsory to attempt all sections.

b) All questions of Section A are compulsory; questions in Section B and C contain choice.

Section A: Very Short Answer type Questions **Attempt all the questions.**		**BL**	**CLO**	**Marks (10)**
1.	What is rate of reaction and how it is related to rate law?	BL1	CLO1	02
2.	What are the ideal and non-ideal gases?	BL1	CLO2	02
3.	What is meant by Reynolds number? What is its significance?	BL1,3	CLO2	02
4.	Discuss the Law of Corresponding state?	BL2	CLO3	02
5.	What are crystalline solids? Give their characteristics.	BL1	CLO4	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**		**BL**	**CLO**	**Marks (30)**
1.	What are the various factors which affect the rate of reaction?	BL2	CLO1	10
2.	What is Van der Waal's Equation? Discuss its limitations.	BL4	CLO2	10
3.	Discuss and differentiate Frenkel and Schottky defects.	BL2,4	CLO4	10
4.	Give reason for the deviation of real gases from ideal gas behavior?	BL5	CLO3	10
5.	Differentiate between molecularity and order of reaction.	BL4	CLO1	10
6.	What do you mean by unit cell? Draw the structure of monoclinic, tetragonal, and hexagonal unit cells.	BL2	CLO4	10
Section C: Long Answer Type Questions/Case Study **Attempt any 01 out of 03 questions.**		**BL**	**CLO**	**Marks (20)**
1.	Discuss about first order reaction and derive integrated rate equation for first order reaction and their half life.	BL2,3	CLO1	20
2.	Derive the Bragg's equation. Find out the inter-planer distance in a crystal in which a series of planes produce a first order reflection from a copper X-ray tube (λ =1.539A) at an angle of 22.5°.	BL3,5	CLO4	20
3.	What do mean by surface tension and viscosity? Calculate the height to which water will rise in a glass capillary if the radius of the tube is 0.02cm. The surface tension of water is 72.8 dynes cm^{-1}.	BL2,3	CLO3	20
