

Name:			
Enrolment No:			
UPES End Semester Examination, December 2024			
Course: Inorganic Materials of Industrial Importance		Semester: V	
Program: B.Sc. (H) Chemistry		Time : 03 hrs.	
Course Code: CHEM3037P		Max. Marks: 100	
Instructions: Read all the below mentioned instructions carefully and follow them strictly: 1). Mention Roll No. at the top of the question paper. 2). ATTEMPT ALL THE PARTS OF A QUESTION AT ONE PLACE ONLY.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Define and classify rocket propellants with examples.	4	CO4
Q 2	Differentiate homogenous and heterogenous catalyst, providing examples for each type.	4	CO1
Q 3	Write the working principles of solar cells.	4	CO3
Q 4	Examine the differences between Super phosphate and Diammonium phosphate (DAP) fertilizers.	4	CO2
Q 5	Explain the intermediate compound formation mechanism of catalyst action.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 6	Describe the industrial process for synthesizing super phosphate of lime using suitable chemical reactions and flow diagram.	10	CO2
Q 7	What are explosives. Discuss the preparation methods of cyclonite (RDX).	10	CO4
Q 8	Define the following term with suitable examples 1. Auto catalyst 2. Catalyst poison 3. Catalyst promoter 4. Catalyst inhibitor	10	CO1
Q 9	Discuss the working principle of Li-ion batteries with suitable chemical reactions. Or What do you mean by solid state battery? Give an example. What are the advantages of solid-state battery over lithium-ion battery?	10	CO3
SECTION-C (2Qx20M=40 Marks)			

Q 10	Explain the classification of surface coatings and elaborate the formulation and composition of paints and pigments.	20	CO2
Q 11	Describe the synthesis methods, properties, and applications of fullerenes and carbon nanotubes, emphasizing on their significance in advanced ceramic materials science. OR Write short notes on the followings 1. Soda lime glass 2. Safety glass 3. Borosilicate glass 4. Armored glass	20	CO2