Name: **Enrolment No:**	

UPES

End Semester Examination, May 2024

Course: Polymerization Techniques & Processing **Semester: VIII**

Program: B.Sc Chemistry by Research **Time : 03 hrs.**

Course Code: CHEM 4020P **Max. Marks: 100**

Instructions:

1. **Write your enrolment number on the top left of the question paper.**
2. **Do not write anything else on the question paper except your enrolment number.**
3. **Attempt all parts of a question at one place only.**
4. **Internal choice is given for question number 9 of Section B and question number 11 of Section C only.**

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Explain, the process of 3D printing.	**4**	**CO2**
Q2.	Why do polymers break in pieces below the Tg?	**4**	**CO3**
Q3.	Explain the base catalyzed mechanism of PF resins.	**4**	**CO1**
Q4.	Describe the process of suspension polymerization, giving its benefit over solution polymerization.	**4**	**CO1**
Q5	Depict, different forms in which PP is available commercially.	**4**	**CO1**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Contrast thermodynamics of low and high molecular weight substances.	**10**	**CO1**
Q 7	Giving technical details, describe the process of PVC sheet using L-shaped calendars.	**10**	**CO2**
Q 8	What are composites? Explain main component of polymer composites.	**10**	**CO2**
Q9	Discuss any two methods to determine the thermal behavior of the polymers. **OR** Compare Tg and Tm w.r.t. polymers.	**10**	**CO3**

SECTION-C (2Qx20M=40 Marks)			
Q 10 a	Compare the behavior of polymer solution and the low molecular weight solution.	**10**	**CO1**
b	Giving formulation of paints, explain how is it manufactured industrially?	**10**	
Q11 a	Describe the conversion of polymer granules into polymer sheet using casting process. Also compare the variation in different techniques.		**CO2**
b	Explain polymer adhesives. Give formulation for any one type of adhesive.		
	OR	**10**	
a	Explain the technique used for making disposable articles. Highlight any 3 possible variations that can be made to enhance the product quality.	**10**	
b	Describe in detail the different components of tyres.		