Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester –I Examination Feb. - 2012

Subject code: 711607N **Date: 21/02/2012**

Subject Name: Polymer Science & Synthesis of Polymers

Time: 10.30 am – 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1(A)	Classify Polymers mentioning the characteristics of each class.	(09)
Q.1(B)	What are the different methods used for determining the molecular weights of polymers? Explain one in detail.	(05)
Q.2(A)	Write a short note on use of Polymer in Organic Synthesis.	(07)
Q.2(B)	Discuss in detail about Polydispersity & Molecular weight distribution in Polymers.	(07)
	OR	
Q.2(B)	Write the practical significance of Polymer molecular weight.	(07)
Q.3(A)	Differentiate among bulk, solution, suspension & emulsion Polymerisation.	(07)
Q.3(B)	What is curing of a Polymer? Explain with example.	(07)
	OR	
Q.3(A)	Short note on Chain transfer agents.	(07)
Q.3(B)	Discuss the salient features of Free radical & Polycondensation Polymerisation reactions.	(07)
Q.4	Explain in detail about Carothers' equation.	(14)
	OR	
Q.4(A)	Name the different kinds of natural polymers. Discuss the occurrence, chemical composition, method of extraction & application of Shellac.	(07)
Q.4(B)	Explain in brief about Ziegler- Natta Catalyst.	(07)
Q.5(A)	Explain Optical Isomerism in Polymers taking suitable examples.	(07)
Q.5(B)	Write a note on Merrifield Synthesis.	(07)
	OR	
Q.5(A)	Give an account of Chemical reaction occurring due to different functional groups in a Polymer?	(07)
Q.5(B)	Differentiate between (i) Configurational & Conformational isomerism. (ii) Isotactic & Atactic Polymers.	(07)

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