Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Examination January 2010

Subject code: 711607

Subject Name: Polymer Science & Synthesis of Polymers

Date: 27 / 01 /2010 **Time: 12.00 – 2.30 pm**

Total Marks: 60

Instructions:

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

Q.1	**(a)**	Explain in detail about the Carother's Equation.	**06**
	(b)	Discuss the difference between Thermosetting and Thermoplastic Polymers	**06**
Q.2	**(a)**	Write a brief note on Rubber as sources of Natural Polymers.	**06**
	(b)	Write the difference between Bulk Polymerization & Solution Polymerization Techniques.	**06**
		OR	
	(b)	Explain in detail about Polycondensation Polymerization Process.	**06**
Q.3	**(a)**	Discuss the Practical Significance of Polymer Molecular Weight.	**06**
	(b)	Write the Salient features of Cationic Polymerization Reactions.	**06**
		OR	
Q.3	**(a)**	Explain the Number- Average Molecular Weight Concept.	**06**
	(b)	Write a note on 'The Mayo equation & Evaluation of the Chain Transfer Constant.	**06**
Q.4	**(a)**	Explain the different Molecular arrangement & types of mesomer involved in Polymer.	**06**
	(b)	Discuss the Solubility of Crystalline and Amorphous Polymers.	**06**
		OR	
Q.4	**(a)**	Short note on 'Optical Isomerism'	**06**
	(b)	Explain in detail about the 'Effect of Molecular Weight on Solubility'.	**06**
Q.5	**(a)**	Short note on Mechanical Degradation.	**06**
	(b)	Describe the reactions of polymer molecules with Hydroxyl groups.	**06**
		OR	
Q.5	**(a)**	Discuss in detail about Ozone Oxidation.	**06**
	(b)	Explain the hydrogenation technique for Polymers.	**06**

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