Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–III • EXAMINATION – SUMMER 2015

Subject Code: 132301 **Date:09/06/2015**

Subject Name: Introduction to Plastic Material Science

Time: 02.30pm-05.00pm **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)**	Give the classification of Polymer and Explain it in detail	**07**
	(b)	Explain condensation polymerization with example	**07**
Q.2	**(a)**	Compare: Thermoplastics with Thermosets	**07**
	(b)	Explain Bulk polymerization in detail	**07**
		OR	
	(b)	Explain about Tacticity with example.	**07**
Q.3	**(a)**	Define Glass transition temperature. Which factors affects the Tg? Explain in detail.	**07**
	(b)	Discuss ring opening polymerization	**07**
		OR	
Q.3	**(a)**	Compare: Suspension Polymerization with Emulsion Polymerization	**07**
	(b)	Give difference between amorphous & crystalline polymers	**07**
Q.4	**(a)**	Define Molecular Weight of Polymer. Explain Number Average Molecular Weight Concept	**07**
	(b)	List various steps of free radical polymerization and explain each with suitable example	**07**
		OR	
Q.4	**(a)**	Explain about Gas – Phase polymerization	**07**
	(b)	What is copolymer? Write down different types of copolymer.	**07**
Q.5	**(a)**	Explain Polydispersity & Molecular weight distribution in polymers	**07**
	(b)	Write a brief note on the following 1. initiator, 2. inhibitor 3. chain transfer agent	**07**
		OR	
Q.5	**(a)**	Explain cationic polymerization with suitable example	**07**
	(b)	Write down the effect of crystallinity on the mechanical, chemical and thermal properties of polymer.	**07**

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