Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE –SEMESTER III(NEW)– EXAMINATION –SUMMER 2015

Subject Code:2132302 **Date:29/05/2015**

Subject Name: Manufacturing of Plastic Material-1

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)**	Define Polymer. Discuss linear, branched and cross-linked polymer structures.	**07**
	(b)	Differentiate between thermosetting and thermoplastic behavior of polymers.	**07**
Q.2	**(a)**	Draw Layout and arrangement of plastic material manufacturing plant.	**07**
	(b)	Define: (1) A-stage resin (2) B-stage resin (3) C-stage resin (4) Monomer (5) polymerisation (6) Rheology (7) Curing.	**07**
		OR	
	(b)	Give difference between Novolac and Resole resins.	**07**
Q.3	**(a)**	Give properties and applications of epoxy resin.	**07**
	(b)	Write briefly general characteristics polyester resin and various fields of their applications.	**07**
		OR	
Q.3	**(a)**	Explain manufacturing of Phenol formaldehyde resin (Novolac).	**07**
	(b)	How Urea and Melamine monomers are prepared? Explain.	**07**
Q.4	**(a)**	Give properties and applications UF and MF.	**07**
	(b)	Write a note on Naphtha cracking.	**07**
		OR	
Q.4	**(a)**	How is an unsaturated polyester prepared? What are the different types of alcohols and acids used for preparation?	**07**
	(b)	How Bisphenol-A and Epichlorohydrin monomers for epoxy resin are prepared? Explain.	**07**
Q.5	**(a)**	How phenol and formaldehyde monomers are prepared? Explain.	**07**
	(b)	Explain manufacturing of Urea formaldehyde resin.	**07**
		OR	
Q.5	**(a)**	Which raw materials are used to prepare polyurethane? Explain preparation of polyurethane.	**07**
	(b)	Give properties and applications of silicone resin.	**07**

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