Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER III–EXAMINATION – WINTER 2015

Subject code: 2734004 **Date: 04/12/2015**

Subject Name: Thermosetting Resins & Silane Technology

Time: 2:30 PM to 5:00 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)	Write the disadvantages of Phenolic resins.	(04)
	(b)	Discuss the Die Casting process for Thermoset resins with their schematic diagram.	(05)
	(c)	Give the name of various tests used for the evaluation of Thermoset resins.	(05)
Q. 2	(a)	List the additives used for Thermoset resins and explain any two in detail.	(07)
Q. 2	(b)	Explain the manufacturing of adhesive based on Acrylic resin.	(07)
		OR	
	(b)	Short note on: “Acrylic Sealants”.	(07)
Q. 3	(a)	Explain the chemistry for the formation of Urea formaldehyde resin.	(07)
	(b)	Discuss in detail about curing of Epoxy resin by giving reaction mechanism.	(07)
		OR	
Q. 3	(a)	Describe in detail about synthesis of Novolac-type Phenolic resin.	(07)
	(b)	Write the advantages & disadvantages of Epoxy resin.	(07)
Q. 4	(a)	List the methods for application of Silane on substrates and explain any one in detail.	(07)
	(b)	Discuss the types of Polyester resins in detail.	(07)
		OR	
Q. 4	(a)	Define the term Silane coupling agent and explain the Dipodal Silane in detail.	(07)
	(b)	Discuss the properties and applications of Unsaturated Polyester Resins.	(07)
Q. 5	(a)	Write the importance of characterization for Thermoset resins. Explain the NMR spectroscopy technique.	(07)
	(b)	Short note on: “Aromatic resins vs Aliphatic Resins”.	(07)
		OR	
Q. 5		List the various types of Hydrocarbon resins. Explain any two in detail.	(14)

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