

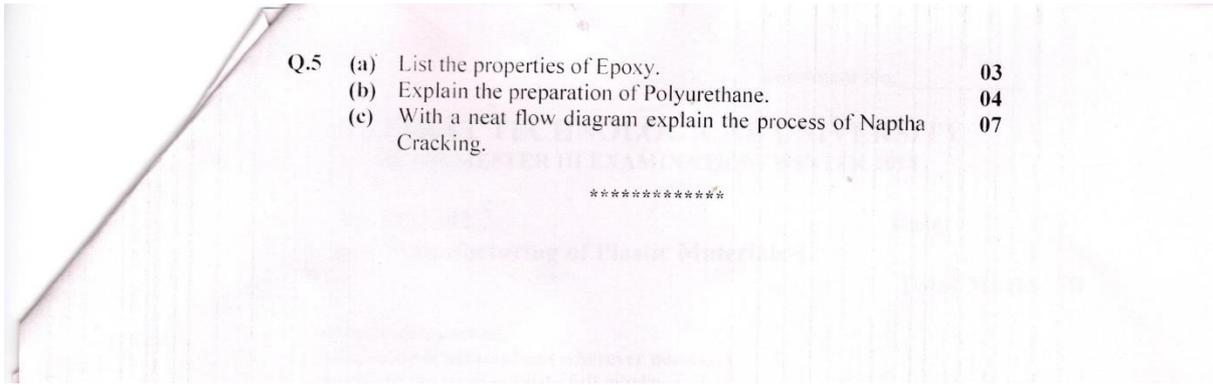
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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (New) EXAMINATION – WINTER 2018****Subject Code:2132302****Date:01/12/2018****Subject Name:Manufacturing of Plastic Materials-1****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

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

		MARKS
Q.1	(a) Define giving examples i) Monomer ii) Polymer iii) Polymerization.	03
	(b) List the differences between thermoplastics and thermosets.	04
	(c) Draw a flow chart and explain the manufacturing of Melamine Formaldehyde.	07
Q.2	(a) Explain the preparation of Unsaturated Polyester resin.	03
	(b) List the applications of Epoxy.	04
	(c) Write a short note on curing mechanism of Urea Formaldehyde	07
	<b>OR</b>	
	(c) Explain the cross linking of Polyester resin by styrene linkages	07
Q.3	(a) Name the appropriate thermoset material used in the production of the following items i) Dinnerware ii) Adhesives and coatings iii) O-rings	03
	(b) Explain the preparation of Melamine and Formaldehyde monomers.	04
	(c) List the properties and applications of Urea Formaldehyde Resin.	07
	<b>OR</b>	
Q.3	(a) Explain the manufacturing of Silicone Resin.	03
	(b) Explain the Dow process and Sulphonation process to manufacture Phenol.	04
	(c) List the properties and applications of Melamine Formaldehyde.	07
Q.4	(a) List the uses of Polyurethane.	03
	(b) State the properties and applications of Phenol Formaldehyde.	04
	(c) Explain the preparation Bis-phenol A and Epichlorhydrin monomers for Epoxy Resin.	07
	<b>OR</b>	
Q.4	(a) List the properties and applications of Polyester resin.	03
	(b) Explain the preparation and curing of Diglycidyl ether in manufacturing of Epoxy resin.	04
	(c) Draw a flow chart and explain the manufacturing of Urea Formaldehyde.	07
Q.5	(a) How is Urea monomer prepared?	03
	(b) List the properties and applications of Silicon Resin.	04
	(c) How are Novolac and Resols formed? Explain.	07
	<b>OR</b>	



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