

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2132302****Date: 07/06/2019****Subject Name: Manufacturing of Plastic Materials-1****Time: 02:30 PM TO 05:00 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) Explain about linear, branched and crosslinked structures in polymers.	03
	(b) Differentiate between thermoplastics and thermosets.	04
	(c) Explain the process of Naptha cracking with a neat flow diagram.	07
Q.2	(a) Define: Monomer, Curing and Polymerization.	03
	(b) Give the chemical reactions for formation of phenol and formaldehyde monomers.	04
	(c) Explain preparation of Urea formaldehyde resin.	07
	OR	
	(c) Which raw materials are used for preparation of epoxy resin? Explain manufacturing of Epoxy resin.	07
Q.3	(a) Give chemical reaction for preparation of Urea monomer.	03
	(b) List the Properties and applications of unsaturated polyester resin.	04
	(c) Explain the preparation and curing mechanism of Melamine Formaldehyde resin.	07
	OR	
Q.3	(a) List various applications of Urea Formaldehyde resin.	03
	(b) Draw layout and arrangement of any Plastic material manufacturing plant.	04
	(c) Which are the properties and applications of silicon? Discuss.	07
Q.4	(a) How Bisphenol A monomer is prepared?	03
	(b) Which are the properties of Epoxy resin? Discuss.	04
	(c) Explain the preparation and cross linking mechanism of unsaturated polyester resin.	07
	OR	
Q.4	(a) Give difference between Novolac and Resol.	03
	(b) List Properties and applications of Polyurethane resin.	04
	(c) How Silicon resin is prepared? Explain.	07
Q.5	(a) Give application of Melamine formaldehyde.	03
	(b) List various properties of Urea Formaldehyde resin.	04
	(c) How Novolac and Resol resin prepared? Explain.	07
	OR	
Q.5	(a) List the applications of Phenol formaldehyde.	03
	(b) What are A-stage, B-stage and C-stage resins? Discuss.	04
	(c) Discuss manufacturing of Polyurethane resin.	07
