

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– V (New) EXAMINATION – WINTER 2019****Subject Code: 2153606****Date: 29/11/2019****Subject Name: Polymer & Rubber Material-II****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) Give the Name of Modified alkyds	03
	(b) Name the polymer with structure for following applications and give reason for choice: mold release agent & mattress	04
	(c) Write a short note on alkyd resin. Explain with types.	07
Q.2	(a) Explain CNSL Resin	03
	(b) Write An Application & Properties of polyamides.	04
	(c) Write a short note on synthesis and applications of Amino resin	07
OR		
	(c) Why curing is important in case of thermosets? Discuss briefly the mechanism of curing of epoxy system with various curing agents	07
Q.3	(a) Compare sulfur vulcanization vs peroxide vulcanization.	03
	(b) Write an explanatory note on epoxy-novalac & epoxy-acrylate system.	04
	(c) Explain in short the vulcanization of rubber and also the cross linking technology.	07
OR		
Q.3	(a) What is fiber reinforced polyester?	03
	(b) Write Application of UF & MF	04
	(c) Thermoset polymers are very useful in the coating application. Name a thermoset polymer used for this purpose in washing machine application. Justify and describe the synthesis and properties of the polymer	07
Q.4	(a) Write an explanatory note on epoxy-novalac & epoxy-acrylate system.	03
	(b) Write a Application of Novolac Resin	04
	(c) Explain the synthesis; curing and applications of polyurethane resins	07
OR		
Q.4	(a) Write unique properties polyurethane resins.	03
	(b) Write application & Properties of Kevlar Fiber	04
	(c) Explain the reaction mechanism between phenol and formaldehyde and process of forming PF resins.	07
Q.5	(a) Write a Application of Epoxy Resin in Coating Industry.	03
	(b) Why Thermosetting Polymers are Amorphous	04
	(c) Explain the reaction mechanism between phenol and formaldehyde and process of forming PF resins?	07
OR		
Q.5	(a) Draw The Structure of Epoxy, MF, UF	03
	(b) What is silicones rubber? Mention its important application	04
	(c) Explain with example vulcanization & de-vulcanization of rubbers.	07