

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2023****Subject Code:3132304****Date:18-01-2024****Subject Name:Thermoset Plastics: Materials and Processing Techniques****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.
4. Simple and non-programmable scientific calculators are allowed.

		Marks
Q.1	(a) What are the basic characteristics of Thermoset Materials?	03
	(b) Describe the manufacturing process of Phenol from benzene.	04
	(c) State the difference between Thermoplastics and Thermosets.	07
Q.2	(a) Which raw materials are used in the production of Bisphenol-A?	03
	(b) What are the primary raw materials required for manufacturing Phenol Formaldehyde resins?	04
	(c) Explain the production process of polyurethane resins, including the key reaction steps.	07
	OR	
	(c) Explain the manufacturing process of Melamine Formaldehyde resins.	07
Q.3	(a) List three common properties and applications of UF.	03
	(b) Draw a neat sketch of the Pot type transfer mold.	04
	(c) Describe the common defects encountered in compression molding.	07
	OR	
Q.3	(a) Differentiate between Novolac and Resols.	03
	(b) Explain the factors that influence the compression molding process.	04
	(c) Discuss the specific properties and applications of epoxy resins.	07
Q.4	(a) Explain the role of bulk factor in compression molding.	03
	(b) Explain the processing considerations for polyurethanes.	04
	(c) Explain the key steps involved in the production process of epoxy resins.	07
	OR	
Q.4	(a) Explain the advantages and disadvantages of using hot oil heaters in compression molding.	03
	(b) Explain the processing characteristics of phenol formaldehyde in terms of curing behavior.	04
	(c) Explain the manufacturing process of silicon resins.	07
Q.5	(a) What are the limitations or disadvantages of compression molding?	03
	(b) What is compression molding? Explain the basic principle of compression molding.	04
	(c) Differentiate between compression molding and transfer molding.	07
	OR	
Q.5	(a) Explain the basic principle of transfer molding.	03
	(b) Describe the common defects encountered in transfer molding.	04
	(c) Explain the properties and application of silicon resins and epoxy resin.	07
