

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III EXAMINATION – SUMMER 2025****Subject Code:3132304****Date:31-05-2025****Subject Name: Thermoset Plastics: Materials and Processing Techniques****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.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|---|-----------|
| Q.1 | (a) Define: (1) Curing (2) Bulk factor (3) Preform | 03 |
| | (b) Draw structure of Urea Formaldehyde. | 04 |
| | (c) Describe manufacturing process of Melamine Formaldehyde. | 07 |
| Q.2 | (a) Explain in brief about Bulk Factor. | 03 |
| | (b) Write properties and applications of Thermoset Polyurethane. | 04 |
| | (c) State the advantages and disadvantages of Transfer molding. | 07 |
| | or | |
| | (c) Write the comparison between Thermoplastic and Thermoset. | 07 |
| Q.3 | (a) Write properties of Phenol Formaldehyde. | 03 |
| | (b) Explain briefly about Breathing in Compression Molding Process. | 04 |
| | (c) Explain the preparation and curing mechanism of Epoxy resin. | 07 |
| | or | |
| Q.3 | (a) Explain about Heaters for Compression Mold. | 03 |
| | (b) List the properties and applications of Silicon. | 04 |
| | (c) Draw a neat sketch of the Pot type transfer mold and Explain the process in details. | 07 |
| Q.4 | (a) List the steps for compression molding process. | 03 |
| | (b) List the application of phenol formaldehyde. | 04 |
| | (c) Compare: Compression molding with Transfer Molding process. | 07 |
| | or | |
| Q.4 | (a) List factors affecting compression molding. | 03 |
| | (b) List the application of Epoxy. | 04 |
| | (c) Determine the height of powder well for a semi positive landed compression mold for a cylindrical hollow product having outer diameter 30mm and inner diameter 20mm. The height of the product is 20 mm. The bulk factor of the material is 8 and the land width is 5mm. | 07 |
| Q.5 | (a) Draw chemical structure of Bisphenol-A. | 03 |
| | (b) List the application of Thermoset Polyester. | 04 |
| | (c) Explain manufacturing process of Silicone. | 07 |
| | or | |
| Q.5 | (a) Explain in brief about role of pressure pad in compression mold. | 03 |

- (b) List advantages and disadvantages of Preform. **04**
- (c) Write the molding sequence of Compression molding along with its process parameters. **07**
