

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3162308

Date: 30-05-2025

Subject Name: Advanced Plastic 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

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|------------|--|-----------|
| Q.1 | (a) Define Reaction Injection Molding. List the applications of RIM. | 03 |
| | (b) List the general production methods of foams. | 04 |
| | (c) Explain the process of Encapsulation with a neat sketch and list its advantages & disadvantages. | 07 |
| Q.2 | (a) Discuss about Silicon foams. | 03 |
| | (b) Draw a labelled diagram of typical Calendering line process. | 04 |
| | (c) Explain the Insert Molding technique and list its applications. | 07 |
| | OR | |
| | (c) Describe the manufacturing process for making Expandable Polystyrene foam with a neat diagram and list its applications. | 07 |
| Q.3 | (a) Explain the process of Casting with thermoset materials and list its applications. | 03 |
| | (b) Define Blowing agents & explain types of blowing agents. | 04 |
| | (c) Discuss different calender roll arrangements with neat diagram. | 07 |
| | OR | |
| Q.3 | (a) Define the following i) Syntactic foam ii) Cellular plastic iii) Compression Resistance of foam. | 03 |
| | (b) Discuss about different components used in Reaction Injection Molding process. | 04 |
| | (c) Explain the preparation of Open cell Vinyl foams & Closed cell Vinyl foams. | 07 |
| Q.4 | (a) Discuss about thermosetting foams. | 03 |
| | (b) List & explain the factors affecting final density of foam. | 04 |
| | (c) Explain the Multicolor Injection Molding technique and list its applications. | 07 |
| | OR | |
| Q.4 | (a) List the applications of calendered sheet. | 03 |
| | (b) Describe the manufacturing & applications of Polyurethane flexible foam. | 04 |
| | (c) Explain the steps of Low Pressure Structural foam molding technique with necessary sketch. | 07 |
| Q.5 | (a) List the advantages & disadvantages of Reaction Injection Molding. | 03 |
| | (b) Explain the process of crosslinking thermoplastics for wire & cable coating. | 04 |
| | (c) Discuss about Drilled Rolls and Cored Rolls used in calendering process. | 07 |
| | OR | |
| Q.5 | (a) List the post calendaring processes & explain any one briefly. | 03 |
| | (b) Explain the Internal Gas Assisted Molding technique with a diagram. | 04 |
| | (c) Define Structural foam. List the advantages, disadvantages & applications of structural foam. | 07 |
