

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019****Subject Code: 2142301****Date: 07/12/2019****Subject Name: Basic Plastic Processing and Thermal Engineering****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**
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|-----|--|-----------|
| (a) | Explain the Polymer processing with classification for thermoplastic and thermoset material. | 03 |
| (b) | Discuss the Polymer melt flow behavior in processing of plastic material. | 04 |
| (c) | Define the consideration for selection of particular method of processing. | 07 |

- Q.2**
- | | | |
|-----|--|-----------|
| (a) | Describe the Bulk factor with its significance. | 03 |
| (b) | List out the steps involved in compression molding process and machine specifications. | 04 |
| (c) | Explain Intermittent Extrusion Blow molding process in detail with neat sketch. | 07 |

OR

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|-----|---|-----------|
| (c) | Write the compression molding defects with causes and remedies. | 07 |
|-----|---|-----------|
- Q.3**
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|-----|--|-----------|
| (a) | Comparison between Transfer molding with Compression molding. | 03 |
| (b) | Differentiate between the Extrusion blow molding and Injection blow molding process. | 04 |
| (c) | Write the Transfer Molding process defects with causes and remedies. | 07 |

OR

- Q.3**
- | | | |
|-----|--|-----------|
| (a) | What are the Raw material criteria for roto molding process? Explain its advantages and limitations. | 03 |
| (b) | Explain the Melt stability and Plastic memory of material for thermoforming process. | 04 |
| (c) | Describe the types of molds used for transfer molding process with neat sketch. | 07 |
- Q.4**
- | | | |
|-----|--|-----------|
| (a) | State the differences between Vacuum and Pressure forming technique. | 03 |
| (b) | Explain Stretch blow molding with advantages and Limitations. | 04 |

- (c) Define the Parison programming with neat diagram, advantages and disadvantages. **07**

OR

- Q.4** (a) Explain the Gel time and its importance for Thermoset material processing. **03**
- (b) Describe the Flash type mold with advantages and limitations. **04**
- (c) What are the types of machine used for roto molding and explain in detail the Shuttle type machine with advantages and limitations. **07**
- Q.5** (a) Explain the modes of heat transfer in details. **03**
- (b) Write in detail about finned tube heat exchanger. **04**
- (c) What are the different applications of heat transfer principles in plastics industries? **07**

OR

- Q.5** (a) Explain the Law of heat transfer in details. **03**
- (b) Define the over all heat transfer coefficient. **04**
- (c) Give the detailed note on shell and tube heat exchanger with advantages and disadvantages. **07**
