

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 4 – EXAMINATION – SUMMER 2026

Subject Code: 3142310

Date: 04/06/2026

Subject Name: Injection Molding Technology

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.**

- Q.1**
- (a) Define (1) Injection Molding (2) Back Pressure (3) Nozzle. **03**
 - (b) List advantages of Injection Molding. **04**
 - (c) Compare: Injection Molding of Thermoplastic with Injection Molding of Thermoset. **07**
- Q.2**
- (a) List sequence of operation for Plunger type Injection Molding. **03**
 - (b) Define (1) Registering (2) Sprue (3) Tonng (4) Drooling. **04**
 - (c) Compare: Toggle clamping with Hydraulic clamping. **07**
- OR
- Q.2**
- (c) Explain about Plasticizing of thermoplastic material in Reciprocating screw type Injection Molding Machine. **07**
- Q.3**
- (a) List the process variables for Injection Molding. **03**
 - (b) Explain about heaters and heating system used for Reciprocating screw type Injection Molding. **04**
 - (c) List types of Nozzle. Explain any one with neat sketch. **07**
- OR
- Q.3**
- (a) Define (1) Shot Capacity (2) Plasticizing Capacity (3) Suckback **03**
 - (b) Write cause and remedies for: (1) Black spots (2) Warpage. **04**
 - (c) Compare: Hydraulic drive with Electric Drive. **07**
- Q.4**
- (a) Draw screw for Injection Molding of Thermoset. **03**
 - (b) List types of clamping system. Draw Double-Toggle clamping system. **04**
 - (c) Draw and explain PVT diagram in detail. **07**
- OR
- Q.4**
- (a) Explain importance of alignment of Nozzle in Injection Molding. **03**
 - (b) Explain Construction and working of cooling tower in brief. **04**
 - (c) Draw screw for Injection Molding of Thermoplastic. Label its terminology. **07**
- Q.5**
- (a) Define (1) Helix angle (2) L/D ratio (3) Compression ratio. **03**
 - (b) Explain about Barrel heating system for Injection Molding of Thermoset. **04**
 - (c) List different auxiliary equipment used for Injection Molding plant. Explain in brief about Mold temperature controller. **07**

OR

- Q.5**
- (a)** List types of zone for Injection Molding of thermoplastic. Explain in brief about feedzone. **03**
 - (b)** List start-up and shut-down process for Injection Molding of Thermoplastic. **04**
 - (c)** Explain Thermoset Injection Molding process with neat sketch. List the materials used for the process. **07**
