

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering - SEMESTER - VII EXAMINATION - WINTER 2025

Subject Code: 3172314

Date: 20-11-2025

Subject Name: Secondary Plastics 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) Draw a neat labeled diagram of Corona Discharge technique & state its use.	03
(b) List various forms of adhesives & explain any two briefly.	04
(c) Explain the Hot Gas Welding Technique to join plastics by thermal bonding	07
Q.2 (a) List various surface treatment methods & briefly discuss its importance.	03
(b) Identify and state the advantages, disadvantages and applications of screen printing.	04
(c) List the methods used for Powdered Plastic coating & explain the Fluidized Bed Coating technique with a neat labeled diagram.	07
OR	
(c) Explain the working of a Hot Plate welding technique used to join plastic parts, with a neat diagram.	07
Q.3 (a) List the different machining operations done on plastics & explain any one.	03
(b) Explain the working of a high frequency welding technique to join plastics with a neat diagram & list its applications.	04
(c) Describe with necessary diagram, the Vacuum Metallizing process to obtain Metallic coating on plastic parts.	07
OR	
(a) Draw a labeled diagram of Flexographic printing technique	03
(b) Describe the Electrostatic Spraying technique with a neat sketch for powdered plastic coating.	04
(c) Discuss with a neat diagram, the parts of an Ultrasonic welding assembly used for thermal bonding of plastics & explain its working.	07
Q.4 (a) Explain Flocking process & list its uses.	03
(b) Discuss the In Mold decorating technique to decorate plastic products during molding operation.	04
(c) Describe the working of a Rotogravure printing process with a labeled sketch.	07

OR

- (a)** State the steps of flame treatment process used for surface treatment of plastics. **03**
 - (b)** Explain the Electrolytic Plating technique for coating plastics. **04**
 - (c)** Describe the Hot foil stamping method used to decorate plastic part with a neat labeled diagram. **07**
- Q.5**
- (a)** Describe briefly the water transfer process used for decorating plastics. **03**
 - (b)** List & explain the general rules to be observed for good cementing of plastics. **04**
 - (c)** Discuss the steps in Pad Printing Process with necessary labeled diagram. **07**

OR

- (a)** List different finishing operations done on plastics and explain any one. **03**
- (b)** Explain briefly about molded- in and post-molded inserts used as mechanical fasteners. **04**
- (c)** Describe the working of Electrostatic Fluidized Bed coating used for powdered plastic coating with a neat sketch **07**
