

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023**

**Subject Code:3172314**

**Date:08-12-2023**

**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.

		<b>MARKS</b>
<b>Q.1</b>	(a) Discuss the importance of surface treatment? List various surface treatment methods for plastics.	<b>03</b>
	(b) Describe the Hot Gas Welding Technique with a neat sketch.	<b>04</b>
	(c) Discuss the Electrostatic Fluidized Bed Coating technique for Powder Coating with plastics.	<b>07</b>
<b>Q.2</b>	(a) Explain the corona discharge technique with a neat sketch for surface treatment of plastics.	<b>03</b>
	(b) Discuss the In-mold decoration technique for decorating plastics.	<b>04</b>
	(c) Explain the Hot Foil Stamping Technique for decorating plastics with a neat sketch.	<b>07</b>
	<b>OR</b>	
	(c) Explain the Induction Welding Technique for assembling of plastics.	<b>07</b>
<b>Q.3</b>	(a) List the general rules to be observed for cementing of plastics.	<b>03</b>
	(b) Discuss the purpose of finishing & machining operations and explain the Tumbling process for finishing of plastics.	<b>04</b>
	(c) Describe the construction and working of an Ultrasonic Welding machine with a neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Explain the electrostatic spraying technique for powdered plastic coating	<b>03</b>
	(b) Explain the dip method and capillary method for applying solvents for solvent cementing.	<b>04</b>
	(c) Explain the process of Vacuum Metalizing with a neat sketch and list its applications.	<b>07</b>
<b>Q.4</b>	(a) Discuss the principal property considerations for machining of plastics.	<b>03</b>
	(b) Explain the process of Flocking.	<b>04</b>
	(c) Describe the pad printing process for decorating plastics.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) List and explain different forms of adhesives	<b>03</b>
	(b) Explain the Spin or friction welding technique.	<b>04</b>
	(c) Explain the Gravure printing process for decorating plastics.	<b>07</b>
<b>Q.5</b>	(a) Discuss briefly the Water Transfer process.	<b>03</b>
	(b) Explain the Flame treatment technique for surface treatment of plastics	<b>04</b>
	(c) Explain the screen printing technique for decorating plastics.	<b>07</b>

**OR**

- Q.5** (a) Explain the basic principle of adhesive bonding and selection criteria for adhesives, **03**
- (b) Discuss about jigs and fixtures used for machining of plastics **04**
- (c) Explain the stages of hot plate welding technique with neat sketches. **07**

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