

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3163618****Date:14-07-2023****Subject Name:Polymer and Rubber Processing****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) What do you mean by mixing and compounding of polymeric material?	03
	(b) Define (a) L/D Ratio (b) Compression Ratio (c) Flight Depth (d) Screw Clearance	04
	(c) How many types of compression molds are there? Describe Semi-Positive mold with suitable figure.	07
Q.2	(a) What do you mean by Breathing process in case of compression molding?	03
	(b) Explain Rubber Mastication Process.	04
	(c) Define extrusion. With a simple sketch, show the different elements of an extruder explaining the functions of each.	07
	OR	
	(c) Write a short note on different types of clamping systems used in Injection molding.	07
Q.3	(a) Write a short note on two roll mill.	03
	(b) What is the procedure for development of compound?	04
	(c) Giving a simple sketch of the essential parts, explain the working of a continuous mixer.	07
	OR	
Q.3	(a) Give the comparison between compression and transfer molding.	03
	(b) Write down the advantages and drawback of compression molding process.	04
	(c) With suitable diagram, explain how a spherical hollow object is blow molded.	07
Q.4	(a) What is the difference between blow molding and rotational molding?	03
	(b) Write a short note on selection of Screws for specific Polymer.	04
	(c) What is thermoforming? Name the different techniques of thermoforming and describe any one process in detail with its diagram.	07
	OR	
Q.4	(a) Mention the steps involved in mixing process.	03
	(b) Explain the process of rotational molding with its diagram.	04
	(c) With a neat sketch of the unit, explain the working of a two-stage injection molding machine.	07
Q.5	(a) What are the advantages and limitations of rotational molding?	03
	(b) Define calendaring. How are calendars differentiated? Explain the arrangement of rolls.	04
	(c) Define transfer molding. Give a neat sketch, explain the working of transfer mold.	07
	OR	
Q.5	(a) What are the condition that may lead to uneven thickness in a calendared polymer sheet?	03
	(b) Explain the techniques of continues extrusion blow molding of thermoplastics.	04
	(c) Write a short note on runners, Gates and Vents used in transfer molding.	07
