

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- V EXAMINATION-SUMMER 2023

Subject Code: 3152307

Date: 26/06/2023

Subject Name: Plastics Extrusion Technology

Time: 02:30 PM TO 05:00 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) In extrusion, describe the melt mechanism?	03
	(b) With a neat diagram, list the different types of screws used in extrusion.	04
	(c) Distinguish between single screw and twin screw extruders.	07
Q.2	(a) Define the terms "breaker plate," "L/D ratio," and "feeder hopper."	03
	(b) Distinguish between corotating and counterrotating twin screw extruders.	04
	(c) Discuss the production of multilayer films using a neat line diagram.	07
	OR	
	(c) Discuss in depth the raw material selection criteria for the extrusion process.	07
Q.3	(a) Define the following terms: helix angle, flight depth, and pitch.	03
	(b) Discuss the operating principles of single and twin screw extruders.	04
	(c) What is the significance of devaloatilization? Discuss the various methods of devaloatilization on extruders.	07
	OR	
Q.3	(a) What is the definition of GODET?	03
	(b) Discuss nitriding in depth.	04
	(c) Discuss the manufacture of PP monofilaments using a neat line diagram.	07
Q.4	(a) Discuss the differences between AC and DC drives on extruder machines.	03
	(b) List the different types of dies used in blown film extrusion. Draw any two with neat diagram.	04

	(c) Discuss the manufacture of PVC pipes using a neat line diagram.	07
	OR	
Q.4	(a) Describe the caterpillar takeoff unit in extrusion lines.	03
	(b) Explain the concepts of drag flow and pressure flow.	04
	(c) Explain the manufacture of wires and cables using a neat line diagram.	07
Q.5	(a) Discuss about how braided hoses are made.	03
	(b) Discuss in depth the thrust bearing block of single screw extruders.	04
	(c) Give any five troubleshooting approaches to pipe manufacturing.	07
	OR	
Q.5	(a) Distinguish between blown films and cast films.	03
	(b) What exactly is grooved barrel technology? Discuss?	04
	(c) Discuss the heating systems used on extruder machines in depth.	07
