

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V EXAMINATION – WINTER 2025****Subject Code:3152307****Date:19-11-2025****Subject Name:Plastics Extrusion 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.

		MARKS
Q.1	(a) Define: Extrusion, Reduction Gear Box, Thrust Bearing	03
	(b) Fill in the blanks:	04
	1. Reduction Gear Box which gives highest efficiency is _____	
	2. Hopper Cooling is must due to _____	
	3. Function of Screen pack is _____	
	4. Thrust bearing block of Twin Screw Extruders uses _____ bearings	
	(c) Discuss various types of heating systems used on screw Extruders.	07
Q.2	(a) Discuss breaker plate and screen pack	03
	(b) What is significance of L/D ratio, Compression Ratio, Helix Angle, Pitch. Define each of these and explain	04
	(c) Discuss material selection criteria for Extrusion process.	07
	OR	
	(c) Differentiate between Single and Twin Screw Extruders.	07
Q.3	(a) Draw and explain a nylon screw	03
	(b) Explain grooved barrel technology	04
	(c) With a neat line diagram, explain manufacture of LDPE films	07
	OR	
Q.3	(a) Differentiate AC v/s DC motors used on extruder machines	03
	(b) Differentiate thrust bearing block of single and twin screw extruders.	04
	(c) With a neat line diagram, explain manufacture of HDPE Monofilaments.	07
Q.4	(a) Discuss manufacture of suction hoses	03
	(b) Calculate B-10 life of a thrust bearing given that: N=130rpm; P =40MPa, K =3 and 10/3 Assume : B10 std = 1,00,000 hrs	04
	(c) With a neat line diagram, explain manufacture of TQPP films	07

OR

Q.4	(a)	Draw a General purpose screw	03
	(b)	Differentiate counter and co rotating twin screw extruders	04
	(c)	With a neat line diagram, explain manufacture of wires and cables	07
Q.5	(a)	What is the role of thermocouple ?	03
	(b)	Discuss Ram Extruders	04
	(c)	With a neat line diagram, explain manufacture of Pipes	07
OR			
Q.5	(a)	With a neat line diagram, explain manufacture of braided hoses	03
	(b)	Draw sheet line	04
	(c)	What is devolatilization? Explain in detail with various designs	07