

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V EXAMINATION – SUMMER 2025

Subject Code:3152307

Date:15-05-2025

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) Define any four: (1) Extrudate (2) L/D ratio and (3) Feed Hopper (4) Reduction gearbox	03
(b) Fill in the blanks:	04
1. Single screw extruder works on _____principle.	
2. Highest efficiency of reduction gear box is seen in _____	
3. Function of Screen pack is _____	
4. Advantage of grooved barrel technology is _____	
(c) Discuss the working principle of a twin screw extruder and compare single screw with twin screw extruder.	07
Q.2 (a) Discuss manufacture of braided hoses.	03
(b) What is Grooved barrel technology? Discuss.	04
(c) Which are the types of heating systems used on Extrusion machines? Discuss electrical heating in detail.	07
OR	
(c) Give any five troubleshooting for the manufacturing of pipes.	07
Q.3 (a) Estimate the B-10 life of a thrust bearing given that: P = 40 MPa N =120 rpm K = 10/3 B-10 std = 1,00,000 hrs	03
(b) Explain: Drag flow, Pressure flow	04
(c) Discuss raw material selection criteria for extrusion process in detail.	07
OR	
Q.3 (a) Discuss screen pack and breaker plate in short.	03
(b) Discuss the difference between corotating and counter rotating twin screw extruders.	04
(c) Discuss manufacture of HDPE Films with a line diagram.	07
Q.4 (a) Discuss about GODET.	03
(b) Discuss about AC v/s. DC motors for extruder machines.	04
(c) Discuss in detail, Various screw designs. Give applications, advantages and Disadvantages.	07
OR	
Q.4 (a) Discuss manufacture of HMHDPE films.	03
(b) Discuss thrust bearing blocks of single and twin-screw extruders with diagrams.	04
(c) What is the significance of devaloatilization? Discuss the various methods of devaloatilization on extruders.	07

- Q.5** (a) What is the Compression ratio? Explain its Significance. **03**
(b) Explain: Drag flow, Pressure flow **04**
(c) With a neat line diagram, discuss about manufacture of PVC Pipes. **07**
- OR**
- Q.5** (a) Compare Blown film with Cast film. **03**
(b) Explain the coextrusion process in short with neat diagram. **04**
(c) Discuss the production of multilayer films using a neat line diagram. **07**
