

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- V EXAMINATION – SUMMER 2026

Subject Code:3152307

Date:25-05-2026

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

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|------------|---|-----------|
| Q.1 | (a) What is extrusion? Discuss Ram Extruders. | 03 |
| | (b) With a neat diagram, list the different types of screws used in extrusion | 04 |
| | (c) Which are the types of heating systems used on Extrusion machines? Discuss electrical heating in detail. | 07 |
| Q.2 | (a) Define:. | 03 |
| | (i) Drag flow | |
| | (ii) Pressure flow | |
| | (iii) Leak flow | |
| | (b) Differentiate between single screw and twin screw extruders.. | 04 |
| | (c) With a neat line diagram, discuss the manufacture of PVC films. | 07 |
| | OR | |
| | (c) Give any five troubleshooting for the manufacturing of pipes. | 07 |
| Q.3 | (a) What is the Compression ratio? Explain its Significance. | 03 |
| | (b) Write short note on nitriding process. | 04 |
| | (c) Which are the types of heating systems used on Extrusion machines? Discuss electrical heating in detail. | 07 |
| | OR | |
| Q.3 | (a) Define the following terms: helix angle, flight depth, and pitch. | 03 |
| | (b) Write short note on various types of reduction gear boxes. | 04 |
| | (c) What is Grooved barrel technology? Discuss in detail. | 07 |
| Q.4 | (a) Define screen pack and breaker plate. | 03 |
| | (b) Discuss electrical heating systems suitable for extruders. | 04 |
| | (c) Explain the pipe and tube manufacturing process with a neat diagram. | 07 |
| | OR | |
| Q.4 | (a) Differentiate between blown film with cast film. | 03 |
| | (b) Describe the proper reason for the uses of PVC screw and Nylon screw. | 04 |
| | (c) Explain the manufacture of wires and cables using a neat. | 07 |
| Q.5 | (a) Write down the manufacture of suction hoses. | 03 |
| | (b) Describe about AC v/s. DC motors for extruder machines. | 04 |
| | (c) With a neat line diagram, explain the manufacture of wires and cables. | 07 |
| | OR | |
| Q.5 | (a) Discuss about RAM extruders. | 03 |
| | (b) Draw the diagram of straight through die and crosshead die. | 04 |
| | (c) Write down the extrusion process problems, its causes and remedies. | 07 |
