

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2152301****Date: 06/06/2019****Subject Name: Injection Molding Technologies****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.

		MARKS
Q.1	(a) Define i) Maximum Day light ii) Purging iii) Nozzle	03
	(b) Compare injection molding of thermoplastics with injection molding of thermosets.	04
	(c) List the advantages and disadvantages of Injection Molding.	07
Q.2	(a) Draw the sketch of a screw used to process Nylon. Explain its importance.	03
	(b) Explain the startup and shut down procedure in injection molding.	04
	(c) Draw a general purpose injection molding screw and explain its terminologies.	07
OR		
	(c) Write a short note on Gas assisted injection molding technique.	07
Q.3	(a) Calculate the clamping force of a press with a 12 inch diameter ram operating at a pressure of 3000 psi.	03
	(b) List the points of difference between hydraulic and electrical drive system used in injection molding.	04
	(c) Explain the process steps of reciprocating type injection molding machine.	07
OR		
Q.3	(a) Explain the following i) L/D ratio ii) Compression ratio	03
	(b) What is predrying? Explain its importance. List the thermoplastic materials which require predrying before processing.	04
	(c) List the causes and remedies for the following defects found in injection molding i) Bubbles and Voids ii) Flash	07
Q.4	(a) How is MFI important while selecting material for injection molding? Which range of MFI grade material is used for injection molding?	03
	(b) With a neat sketch explain how melting happens in a screw.	04
	(c) List the types of nozzles used in Injection molding and explain anyone with a neat diagram.	07
OR		
Q.4	(a) Draw the screw used to process PVC and explain its importance.	03
	(b) Explain briefly about nitriding of screw and its importance.	04
	(c) Draw and explain the ring type non return valve used in injection molding.	07
Q.5	(a) Describe briefly about the three zones of an injection screw.	03
	(b) List the injection end specifications of a reciprocating screw type injection molding machine.	04
	(c) Explain briefly about control systems in injection molding.	07

OR

- Q.5** (a) List the types of toggle clamping mechanisms and draw a neat sketch of anyone. **03**
- (b) Define cycle time? Explain it briefly with a neat sketch. **04**
- (c) Compare hydraulic clamping with toggle clamping. **07**
