

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2021****Subject Code:3142310****Date:07/09/2021****Subject Name:Injection Molding 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) What is Injection Molding Process.? Explain its advantages and limitations.	03
	(b) Explain about Injection Molding Cycle with its Estimation in brief.	04
	(c) Compare: Reciprocating Screw Machine with Plunger injection molding	07
Q.2	(a) Explain the importance of Hopper throat cooling.	03
	(b) What is Nitriding? Why is it required for screw and barrel?	04
	(c) Draw neat sketch of Injection molding screw with its various terminologies.	07
OR		
	(c) List the types of Nozzles and Explain the Nylon Nozzle with a neat sketch.	07
Q.3	(a) State the Melt Mechanism of Injection Molding Screw.	03
	(b) What is Injection End specifications for an injection molding machine?	04
	(c) Explain about PVT profile in Injection molding machine.	07
OR		
Q.3	(a) Compare the Hydraulic & Toggle system for clamping.	03
	(b) What is Channel depth of screw and its effect on molding process.?	04
	(c) Explain about Cavity pressure profile in Injection molding.	07
Q.4	(a) Give short note on Back Pressure and Injection Shot capacity.	03
	(b) Describe Injection molding machine Start up and Shutdown procedure,	04
	(c) Explain the various types of Thermocouples with their functions.	07
OR		
Q.4	(a) What do you mean by Purging? Describe with its significance.	03
	(b) Explain Mold Temperature Regulators with its importance.	04
	(c) Write a full note on Thermoset injection molding technique.	07
Q.5	(a) Give the functions and importance of Hopper loader.	03
	(b) Describe the Screw Tip Assembly with neat sketch.	04
	(c) Write a note on Pre-drying of material with neat sketch of used Equipment.	07
OR		
Q.5	(a) Explain the various Process Variables in injection molding Process.	03
	(b) Short note: Material consideration for Injection molding process.	04
	(c) Give causes and remedies of the following defects: (1) Silver steaks (2) Warpage (3) Shrinkage (4) Bubbles & Voids (5) Sink mark (6) Shorts (7) Weld Line	07
