

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- VII EXAMINATION – SUMMER 2026

Subject Code:3172320

Date:05-06-2026

Subject Name: Manufacturing of Molds for Plastic products.

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 (i) Machining (ii) Heat treatment (iii) Surface hardening	03
	(b) List various non ferrous materials used in mold manufacturing. Explain about copper alloy in detail.	04
	(c) Explain about non metallic mold materials.	07
Q.2	(a) List advantages of CNC machines.	03
	(b) List alloying elements added in the steel. Which properties can be improved in steel by adding the alloying elements?	04
	(c) Explain about Steel should posses the properties for mold construction. Also list the various steel which are used for manufacturing various parts of the mold.	07
	or	
	(c) Define Calipers. Explain Venire principle in detail	07
Q.3	(a) List types of Micrometers.	03
	(b) Explain about CMM in brief.	04
	(c) List purpose and methods of Heat Treatment. Explain about Case Hardening.	07
	OR	
Q.3	(a) Explain about Cryogenic Heat Treatment in brief.	03
	(b) Define Lathe. List types of Lathe.	04
	(c) Explain chemical etching and its application in mold manufacturing.	07
Q.4	(a) Give classification of Machining Process.	03
	(b) Explain Principle of EDM. List various parts of EDM.	04
	(c) Explain EDM process in details with neat sketch. Also list advantages and disadvantages and application of EDM	07
	OR	
Q.4	(a) What is cutting Tool? List the ideal material characteristic for cutting tool.	03
	(b) Draw line diagram of Job Planning for Mold making.	04
	(c) Explain Mold cost estimation process in detail.	07
Q.5	(a) Define Prototyping. List the basic steps of Prototyping.	03
	(b) List various methods of Prototyping. List advantages and disadvantages of Prototyping.	04
	(c) Compare: CNC machine with conventional machine for mold manufacturing.	07

OR

- Q.5**
- (a)** Explain G code programming with examples. **03**
 - (b)** List the different coordinate systems. Explain rectangular co-ordinate system. **04**
 - (c)** Give full form of the following: **07**
 - (i) AJM (ii) MAF (iii) ECM (iv) ECDG (v) LBM (vi) USM (vii) WJM
