

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024

Subject Code:3172320

Date:11-12-2024

Subject Name: Manufacturing of Molds for Plastic products.

Time:10:30 AM TO 01:00 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) Write working principle of Lathe machine and Milling machine.	03
(b) Enlist various mold making techniques and explain Metal Mold Making.	04
(c) Discuss various factors to be considered while preparing the mold.	07
Q.2 (a) List the common alloying elements in the steel.	03
(b) Write short note on Pantograph engraving.	04
(c) Explain the Shaper machine process for mould manufacturing with a neat sketch.	07
OR	
(c) Explain part programming structure of CNC milling with examples.	07
Q.3 (a) Enlist various non-metallic material used for preparing the mold.	03
(b) Enlist various measuring instruments used in tool room and explain Height Gauge with figure.	04
(c) Define EDM process and Explain its working principle with neat sketch.	07
OR	
Q.3 (a) Explain about Case Hardening.	03
(b) In modern tool room which type of machining operation employed for making core and cavities?	04
(c) Compare: CNC machines with conventional machines.	07
Q.4 (a) List the basic process steps of proto typing.	03
(b) Write Properties of steels.	04
(c) Write short not on Vernier caliper with figure.	07
OR	
Q.4 (a) List the work holding device used for Lathe.	03
(b) Discuss why mold repair and maintenance are crucial for ensuring the longevity and optimal performance of molds.	04
(c) What is Chemical Etching? what is the application of it in mold manufacturing?	07
Q.5 (a) Define Heat Treatment. Explain about carburizing in brief.	03
(b) Write short note on (i) Hard chrome plating (ii) Nickel Plating	04
(c) Explain mold assembly procedure in detail.	07
OR	
Q.5 (a) Short Note: CMM(Coordinate measuring machines)	03
(b) List the basic materials used polishing for the mold.	04
(c) What is cutting tools? List the characteristic of ideal cutting tools.	07
