

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3172320****Date:27/12/2021****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 in short:	03
	(i) For what reason, we are doing machining? Give a simple one-line reason.	
	(ii) Name two operations used for lathe machines.	
	(iii) List out the four types of grinding machines.	
	(b) Define:	04
	(i) What is the heat treatment of metal?	
	(ii) List out the types of metal used for the mould. manufacturing.	
	(c) Explain lathe machine process and its operation for mould manufacturing, With a neat sketch.	07
Q.2	(a) Explain in short: Nitriding process	03
	(b) Fill in the blank:	04
	(i) Core and Cavity can be made by _____.	
	(ii) Gold and Silver are categorized as _____ metal.	
	(iii) For reduction of diameter _____ operation is performed in lathe machine.	
	(iv) _____ and _____ are the ferrous material.	
	(c) Explain the Heat treatment process with a suitable diagram.	07
OR		
	(c) Discuss the effect of carbon on the properties of steel. Provide a graph of Carbon % in the steel.	07
Q.3	(a) What are measuring instruments are being used for mould?	03
	(b) Name all typed of machining used for mould manufacturing.	04
	(c) Write a note on Vernier caliper with a neat sketch.	07
OR		
Q.3	(a) Write about G code and M code Used for CNC machines.	03
	(b) Write short note on (i) Hard chrome plating (ii) Nickel Plating	04
	(c) Explain CNC mold manufacturing techniques with Advantages and their applications.	07

- Q.4** (a) What do you understand by plating in a mold and giving its need in mold? **03**
(b) Give classification of metallic materials used for mold manufacturing. **04**
(c) Explain the milling machine process for mould manufacturing with a neat sketch. **07**

OR

- Q.4** (a) How do ferrous metals differ from non-ferrous metals? **03**
(b) Write a note on (i) Aluminium alloys and (ii) Zink based alloys **04**
(c) Discuss what care should be taken during mould storage and explain how maintenance steps extend mould service life. **07**
- Q.5** (a) Give a brief on measuring tapers and angles. **03**
(b) What are the non-metallic materials are being used for mould manufacturing explained with advantages and its application? **04**
(c) Explain the Shaper machine process for mould manufacturing with a neat sketch. **07**

OR

- Q.5** (a) Write a note on Micrometer. **03**
(b) Write a note on (i) Height Gauge (ii) Slip Gauge. **04**
(c) Write a note on EDM operation for Mold element manufacturing. **07**
