

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3172320****Date:16-12-2023****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.

- 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) Enlist various non-metallic material used for preparing the mold. **03**
 (b) Write Properties of steels. **04**
 (c) Give detailed classification of Machining Processes. **07**
- OR**
- (c) Explain lathe machine process and its operation for mold manufacturing, With a neat sketch. **07**
- Q.3** (a) Enlist various surface treatments used for mold materials. **03**
 (b) Discuss the requirement of heat treatment process for preparing mold. **04**
 (c) What are the selection criteria of mold material? Explain in detail. **07**
- OR**
- Q.3** (a) Give the tips on successful heat treatment. **03**
 (b) What do you mean by chemical etching explain in detail. **04**
 (c) Enlist various heat treatment processes and explain any two in detail. **07**
- Q.4** (a) Write about G code and M code Used for CNC machines. **03**
 (b) Write short note on Rapid prototyping technique. **04**
 (c) Discuss various advantages and application of CNC machines. **07**
- OR**
- Q.4** (a) Short Note: CMM (Coordinate measuring machines). **03**
 (b) Write short note on Pantograph engraving. **04**
 (c) Give working principle and explain in detail CNC EDM with neat sketch. **07**
- Q.5** (a) Enlist Angle Measuring Tools and discuss any one. **03**
 (b) Enlist various measuring instruments used in tool room and explain Height Gauge with figure. **04**
 (c) Write short not on Vernier caliper with figure. **07**
- OR**
- Q.5** (a) Write short note on corrosion protection od mold. **03**
 (b) Discuss why mold repair and maintenance are crucial for ensuring the longevity and optimal performance of molds. **04**
 (c) Discuss the various steps & consideration involved in Estimating the cost of a mold. **07**
