

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV EXAMINATION – SUMMER 2025

Subject Code:3141908

Date:19-05-2025

Subject Name: Manufacturing Processes

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) Give the detailed classification of machine tools. **03**
- (b) Describe the working and auxiliary motions in machine tools **04**
- (c) Illustrate the single-point cutting tool geometry and tool signature with a sketch. **07**
- Q.2** (a) List out Operations carried on engine lathe machine tools. **03**
- (b) What is an alignment test? Describe in detail the alignment process for a lathe machine. **04**
- (c) Describe the construction and key components of an engine lathe, including all arrangements, and provide a relevant diagram. **07**
- OR**
- (c) Explain how thread cutting is performed on a lathe using the gear train and the chasing dial. **07**
- Q.3** (a) Enumerate the different types of drilling machines and their particular functions. **03**
- (b) Explain any four operations carried out on the Radial drilling machine. **04**
- (c) Describe the steps involved in performing an alignment test on a drilling machine, and include a clear diagram. **07**
- OR**
- Q.3** (a) List out the functions, advantages, and disadvantages of a boring machine. **03**
- (b) Differentiate between drilling machines and boring machines. **04**
- (c) Describe the Horizontal boring machines with a neat diagram. **07**
- Q.4** (a) Categorize milling machines according to their applications and construction. **03**
- (b) Describe milling cutters and include a drawing to illustrate them. **04**
- (c) Explain any five milling operations with a neat sketch. **07**
- OR**
- Q.4** (a) Write advantages and limitations of broaching **03**
- (b) Outline the differences between up milling and down milling. **04**
- (c) Explain single indexing and compound indexing in milling machine. **07**
- Q.5** (a) Give the classification of Planner, Shaper and Slotter Machine tools. **03**
- (b) How grinding wheel is specified? **04**
- (c) Explain about crank and slotted link quick return mechanism in shaper machine. **07**

OR

Q.5	(a) Describe the coding of the grinding wheel as per ISI	03
	(b) Explain about dressing and truing of grinding wheel.	04
	(c) Write a short note on: “Band Sawing Machine”	07
