

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Engineering - SEMESTER - IV EXAMINATION - WINTER 2025

Subject Code: 3141908

Date: 24-11-2025

Subject Name: Manufacturing Processes

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) Describe primary and secondary motions used in the machine tools.	03
(b) Define Machine tool along with its classification.	04
(c) Illustrate single point cutting tool geometry and its signature with sketch.	07
Q.2 (a) Why is the Lathe machine called the 'Mother of Machine Tools'?	03
(b) Explain any eight operations carried out on lathe machine.	04
(c) List the methods of taper turning on a lathe machine. Describe a method suitable for long jobs with a neat sketch.	07
OR	
(c) Name the accessories commonly used to enhance lathe operations. Explain the different types of mandrels.	07
Q.3 (a) List the Common operations that can be carried out on Drilling machine and explain any three with neat sketches.	03
(b) Write a short note on radial drilling machine.	04
(c) Illustrate nomenclature of drill bit with a neat sketch	07
OR	
(a) Give any four field applications of drilling machine.	03
(b) What are the different tool holding devices used in a drilling machine? Describe any one with a neat sketch.	04
(c) Describe Horizontal boring machine with a neat sketch.	07
Q.4 (a) List out the alignment test required for milling machine.	03
(b) Demonstrate the different types of milling cutters with line diagrams.	04
(c) Describe Knee and column Vertical Milling machine with a neat sketch.	07
OR	
(a) Classify Milling machine as per application and structure.	03

- (b) Define indexing. Explain direct indexing with an example. 04
- (c) List out various milling machine operations and explain any six operations. 07
- Q.5** (a) Classify the Planner, Shaper, and Slotter Machine Tools. 03
- (b) Describe the coding of grinding wheel as per ISI. 04
- (c) Explain the crank and slotted link quick return mechanisms used in a shaper machine. 07

OR

- (a) Define dressing of a grinding wheel. Which operation is performed to alter the shape of a grinding wheel? 03
- (b) Explain centerless grinders along with their advantages and limitations. 04
- (c) Describe grinding wheel characteristics and wheel selection procedure in details. 07
