

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024****Subject Code:3152007****Date:02-12-2024****Subject Name:Manufacturing Technology****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) List out the different types of manufacturing processes.	03
	(b) Share your viewpoint on choosing tool materials for working with both hard and soft raw materials.	04
	(c) Explain single point cutting tool geometry and tool signature with a proper diagram.	07
Q.2	(a) List out work-holding devices and its functions related to conventional machines.	03
	(b) Describe any four operations carried out on Lathe machine	04
	(c) Illustrate the taper turning attachments on lathe machine tools.	07
	OR	
	(c) Describe the procedure for performing an alignment test on a lathe.	07
Q.3	(a) Explain about drilling, boring and reaming operations	03
	(b) Classify milling cutters with a neat sketch.	04
	(c) Explain the differential indexing mechanism with a sketch.	07
	OR	
Q.3	(a) Define terms: Bending, Punching, Piercing, Blanking.	03
	(b) Explain the processes of backward and forward extrusion.	04
	(c) How grinding wheel is specified? Explain in detail.	07
Q.4	(a) List out types of patterns used in Casting process.	03
	(b) Discuss the factors to consider in casting design.	04
	(c) Explain the various casting defects, their causes, and potential remedies.	07
	OR	
Q.4	(a) Explain the different roles of the coating on consumable welding electrodes.	03
	(b) Clarify the concept of welding electrode polarity with a diagram.	04
	(c) Discuss with neat sketch TIG welding process. State advantages, limitation and application.	07
Q.5	(a) Define the investment casting method with a proper example.	03
	(b) Define operations: (i) lapping (ii) buffing (iii) polishing (iv) honing.	04
	(c) Describe how an electro discharge machine operates, including a suitable diagram. Also, outline its advantages, disadvantages, and applications.	07
	OR	
Q.5	(a) List the different types of oxy-acetylene gas flames and provide an explanation for one of them.	03

- (b) Why are shrinkage allowances and machining allowances included in the patterns? **04**
- (c) Describe the construction and operation of the Ultrasonic Machining (USM) process, including a clear sketch. **07**
