Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–IV (NEW) EXAMINATION – WINTER 2024

Subject Code: 3141908 Date: 27-11-2024

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)**	Differentiate primary motion and secondary motion in the centre lathe.	**03**
	(b)	What are the basic requirements of the machining processes?	**04**
	(c)	Draw single point cutting tool geometry and explain tool signature as per ASA.	**07**
Q.2	**(a)**	Differentiate between Orthogonal and Oblique cutting.	**03**
	(b)	Enlist the work holding devices generally used in a lathe machine. Explain any two of them.	**04**
	(c)	List the methods of taper turning on lathe machine. Explain with neat sketch the taper turning method that can be used for taper turning long length job.	**07**
		OR	
	(c)	Explain half-nut mechanism with sketch. Also draw facing, parting off operations with usual notations.	**07**
Q.3	**(a)**	Give any four field applications/operations of drilling machine.	**03**
	(b)	Write a short note on horizontal boring machine.	**04**
	(c)	Describe Radial Drilling machine with all details.	**07**
		OR	
Q.3	**(a)**	Differentiate between drilling and boring operations.	**03**
	(b)	What are different tool holding devices of drilling machine? Describe one with sketch.	**04**
	(c)	Draw and explain nomenclature of drill bit.	**07**
Q.4	**(a)**	List out the alignment test required for milling machine.	**03**
	(b)	Differentiate between Up milling and Down milling processes.	**04**
	(c)	Describe Knee and column Vertical Milling machine with a neat sketch.	**07**
		OR	
Q.4	**(a)**	Classify Milling machine.	**03**
	(b)	List out various milling machine operations and explain any two.	**04**
	(c)	Explain single indexing and compound indexing in milling machine.	**07**
Q.5	**(a)**	What is broaching? How broaches are classified?	**03**
	(b)	Explain dressing and truing of grinding wheel.	**04**
	(c)	Explain Indian standard marking system for grinding wheels.	**07**
		OR	
Q.5	**(a)**	Explain how to cut internal keyway on slotter machine with neat sketch.	**03**
	(b)	Explain types of grinding wheel and its selection process.	**04**
	(c)	Explain about crank and slotted link quick return mechanism in shaper machine.	**07**

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