Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code:3141908 Date:03-07-2024

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.**

			MARKS
Q.1	**(a)**	Give the classification of Machine tools	**03**
	(b)	Explain any six operations carried out on lathe machine.	**04**
	(c)	Explain Grinding wheel designation system in detail.	**07**
Q.2	**(a)**	Describe in brief how you can machine circular surface in a slotting machine.	**03**
	(b)	Why cutting forces are measured? what are the different ways to measure cutting forces.	**04**
	(c)	Draw single point cutting tool and explain tool signature as per ASA	**07**
		OR	
	(c)	Explain primary and auxiliary motions with reference to machine tool.	**07**
Q.3	**(a)**	List the methods / equipment for mounting cutters on a horizontal boring machine.	**03**
	(b)	Describe methods of taper turning on center lathe.	**04**
	(c)	Explain radial drilling machine with neat sketch.	**07**
		OR	
Q.3	**(a)**	Describe the various types of operations that can be performed by a vertical boring machine in brief.	**03**
	(b)	What are the basic parts of Engine lathe? Discuss the function of head stock.	**04**
	(c)	Draw a sketch of simple twist drill with tapered shank and show its various elements.	**07**
Q.4	**(a)**	What are the advantages of Hydraulic shaper over crank shaper? Discuss	**03**
	(b)	Differentiate Planner Machine and Shaper Machine.	**04**
	(c)	Explain whitworth quick return mechanism used in shaper in brief.	**07**
		OR	
Q.4	**(a)**	Define feed, speed and depth of cut in shaper.	**03**
	(b)	What type of operations can be performed efficiently by planner ? explain in brief,	**04**
	(c)	Name and describe the various work holding devices in shapers.	**07**

Q.5	**(a)**	What is Sawing? List different types of Sawing Machine.	**03**
	(b)	Compare between plain and universal milling machine.	**04**
	(c)	Describe various milling processes with neat sketch.	**07**

OR

Q.5	**(a)**	Sketch different elements of Broach and describe them briefly.	**03**
	(b)	Discuss how cutting force changes with variation of speed and angle of milling cutter.	**04**
	(c)	What are the different methods of indexing? Explain any one in detail.	**07**

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