

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023****Subject Code:3141908****Date:19-07-2023****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.

	<b>MARKS</b>
<b>Q.1</b> (a) Explain primary motion and secondary motion in centre lathe.	<b>03</b>
(b) How is a lathe specified? Explain with a neat sketch the relevance. Of each of the specification points.	<b>04</b>
(c) Draw single point cutting tool and explain tool signature as per ASA.	<b>07</b>
<b>Q.2</b> (a) Differentiate between Orthogonal and Oblique cutting.	<b>03</b>
(b) What type of work holding devices are generally used in a lathe? Explain any two of them.	<b>04</b>
(c) Explain half-nut mechanism with sketch. Also draw facing, parting off operations with usual notations.	<b>07</b>
<b>OR</b>	
(c) What are the various methods available for taper turning on a centre lathe? Explain in detail with a sketch, the methods used for machining steep tapers of short length.	<b>07</b>
<b>Q.3</b> (a) What are the difference between Capstan and Turret lathes?	<b>03</b>
(b) What are different tool holding devices of drilling machine. Describe one with sketch.	<b>04</b>
(c) Sketch and describe in brief of a radial drilling machine.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Is it possible to correct an out of round hole with a reamer? If not, give reasons. If possible, specify the type of reamer used for the purpose.	<b>03</b>
(b) In a tap of out side diameter 10mm. Pitch of the thread 1.5 mm depth of the thread $d=0.61p$ then What is the diameter of nearest drill?	<b>04</b>
(c) Describe a tapping attachment in drill machine.	<b>07</b>
<b>Q.4</b> (a) Differentiate between Upmilling and Downmilling processes.	<b>03</b>
(b) Write any two milling machine operation with sketch.	<b>04</b>
(c) What is indexing? Describe direct indexing, with example.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Explain Gang milling and Form milling operations.	<b>03</b>
(b) Compare in detail shaper and Planner.	<b>04</b>
(c) Explain about crank and slotted link quick return mechanism in shaper machine.	<b>07</b>

- Q.5** (a) Write advantages and limitations of broaching. **03**  
(b) Explain dressing and truing of grinding wheel. **04**  
(c) Explain Indian standard marking system for grinding wheels. **07**

**OR**

- Q.5** (a) What is broaching? How broaches are classified? **03**  
(b) Write classification of sawing machine. Explain any one. **04**  
(c) Explain any one Alignment test of Lathe machine with neat sketch. **07**

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