

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2021****Subject Code:3142509****Date:04/01/2022****Subject Name:Manufacturing Technology -I****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) What is the role of machine tool in manufacturing?	<b>03</b>
	(b) Enlist different type's machine tools.	<b>04</b>
	(c) Draw a primary motion of workpiece and cutting tool of (i) Lathe machine (ii) Drilling machine (iii) Shaper machine.	<b>07</b>
<b>Q.2</b>	(a) Enlist different types of chips produce during cutting operation.	<b>03</b>
	(b) Explain the benefits of using Cutting fluid during cutting operation.	<b>04</b>
	(c) Draw geometry of Single point cutting tool with nomenclature.	<b>07</b>
	<b>OR</b>	
	(c) Explain merchant circle diagram with neat sketch.	<b>07</b>
<b>Q.3</b>	(a) Enlist types of the Lathe machine.	<b>03</b>
	(b) Write the generalized equation to find the cutting time.	<b>04</b>
	(c) Enlist different operations carried out in the lathe machine. Explain any three of them with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) What are the functions of Tail stock in lathe machine?	<b>03</b>
	(b) What is the unit of speed, feed and depth of cut for lathe machine?	<b>04</b>
	(c) Explain lathe parts with neat sketch.	<b>07</b>
<b>Q.4</b>	(a) Enlist different types of drilling machine.	<b>03</b>
	(b) Explain the role of indexing operation in milling machine.	<b>04</b>
	(c) Explain the comparison between planner and shaper.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) List the benefits of quick return mechanism.	<b>03</b>
	(b) Explain the role of abrasive particles in the grinding wheel.	<b>04</b>
	(c) Enlist the different operations carried out in the drilling machine. Explain any three of them with neat sketch.	<b>07</b>
<b>Q.5</b>	(a) Which machine tool is having quick return mechanism?	<b>03</b>
	(b) Draw twist drill.	<b>04</b>
	(c) Write the difference between up- milling and down- milling.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) What are the benefits of broaching and sawing operations?	<b>03</b>
	(b) Draw geometry of milling cutter	<b>04</b>
	(c) Explain Centreless grinder with neat sketch.	<b>07</b>

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