

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2021****Subject Code:3141908****Date:04/01/2022****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) Define Tool Life and explain it with necessary equation.	<b>03</b>
	(b) Define Machine tool along with its classification.	<b>04</b>
	(c) Explain cutting tool angle and their importance with suitable sketches.	<b>07</b>
<b>Q.2</b>	(a) Lathe is father/mother of machine tool. Justify	<b>03</b>
	(b) Explain following parts of a lathe by neat sketches: (1) Lathe Bed (2) Carriage (3) Headstock (4) Tailstock.	<b>04</b>
	(c) Name the accessories commonly used to enhance the lathe operation. Explain the different type of mandrels.	<b>07</b>
<b>OR</b>		
	(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.	<b>07</b>
<b>Q.3</b>	(a) List the Common operations that can be carried out on lathe and explain any three with neat sketches.	<b>03</b>
	(b) Explain Jig boring machine with neat sketch.	<b>04</b>
	(c) Name the drilling operations. Explain counter boring and spot facing with neat sketches.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Draw the two conditions of Tumbler reversing mechanism in Lathe machine.	<b>03</b>
	(b) Explain Horizontal boring machine with neat sketch.	<b>04</b>
	(c) Classify drills. Explain nomenclature of twist drill with neat sketch.	<b>07</b>
<b>Q.4</b>	(a) List out the alignment test required for milling machine.	<b>03</b>
	(b) State difference between up milling and down milling.	<b>04</b>
	(c) Explain method of mounting and application of the following cutters used in milling machine: (1) End mills, (2) Slitting saws and (3) Slab milling cutters.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Classify milling machine.	<b>03</b>
	(b) List out various milling machine operations and explain any two.	<b>04</b>
	(c) Explain single indexing and compound indexing in milling machine.	<b>07</b>
<b>Q.5</b>	(a) What is meant by setting the saw teeth? Why it is done?	<b>03</b>
	(b) Which materials are used in the manufacture of grinding wheels? What properties they impart to the wheel?	<b>04</b>

(c) Explain crank and slotted quick return mechanism in shaper. **07**

**OR**

**Q.5** (a) Explain the following terms. (1) Glazing (2) Loading **03**  
(3) Dressing

(b) Describe the coding of grinding wheel as per ISI. **04**

(c) Explain working principal of planner. Explain types of planner. **07**  
Compare in detail Shaper and Planner.

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