

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023****Subject Code:3140204****Date:19-07-2023****Subject Name:Automotive Manufacturing Processes and Technology****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 importance of super finishing process in automobiles? List out at list six number of super finishing processes used in automobile.	<b>03</b>
	(b) Explain following lathe operations with neat diagrams. (i) Facing (ii) Knurling (iii) Reaming (iv) Forming	<b>04</b>
	(c) Differentiate between a turret lathe and a capstan lathe.	<b>07</b>
<b>Q.2</b>	(a) State the major differences between Planer and Shaper.	<b>03</b>
	(b) Describe: (i) Counter sinking (ii) Counter boring (iii) Tapping (iv) Spot Facing	<b>04</b>
	(c) Discuss briefly the crank and slotted lever type Quick Return Mechanism of a shaper with neat sketch.	<b>07</b>
	<b>OR</b>	
	(c) Show the various parts of Horizontal Milling machine in a diagram and explain the functions of each part.	<b>07</b>
<b>Q.3</b>	(a) Classify non conventional machining processes and explain characteristics of it.	<b>03</b>
	(b) Write the advantages of Laser Beam Machining.	<b>04</b>
	(c) Write the various plastic processing methods and explain in detail: (i) Blow moulding (ii) Thermoforming.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Give the comparison between Thermoplastic and Thermosetting materials.	<b>03</b>
	(b) Describe the various properties of Plastics.	<b>04</b>
	(c) Explain Electrical Discharge Machining (EDM) with neat sketch and write the merits and demerits of it.	<b>07</b>
<b>Q.4</b>	(a) Why is the crank shaft forged? Write the suitable forging sequence for making a crank shaft.	<b>03</b>
	(b) Explain pattern allowances.	<b>04</b>
	(c) Explain various rolling mills arrangement with neat diagrams.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Define forging and state the difference between drawing and upsetting.	<b>03</b>
	(b) Explain (i) Ring Rolling (ii) Thread Rolling	<b>04</b>
	(c) List out the types of patterns used in casting and explain any two patterns with neat sketch.	<b>07</b>
<b>Q.5</b>	(a) What is the difference between Fusion welding and Pressure welding? List out at list six modern welding techniques.	<b>03</b>

- (b) Explain extrusion process with its advantages. **04**
- (c) Discuss resistance spot welding with neat diagram. **07**

**OR**

- Q.5**
- (a) Describe the types of flames of oxygen and acetylene mixture in brief. **03**
  - (b) Write the steps involved in making a casting and give the applications of casting in automobile. **04**
  - (c) Explain the working principal of electron beam welding with neat sketch. **07**

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