

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII EXAMINATION – WINTER 2025

**Subject Code:3171926**

**Date:20-11-2025**

**Subject Name:Rapid Prototyping**

**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>Q.1</b>	(a) Define term: Rapid Prototyping	<b>03</b>
	(b) Write the limitation of manual prototyping.	<b>04</b>
	(c) Discuss the importance of rapid prototyping technique in various industries.	<b>07</b>
<b>Q.2</b>	(a) Enlist the name of CAD modelling software.	<b>03</b>
	(b) Write the limitation of NC/CNC.	<b>04</b>
	(c) Differentiate between the traditional and rapid prototyping.	<b>07</b>
	<b>OR</b>	
	(c) Write the classification of rapid prototyping process.	<b>07</b>
<b>Q.3</b>	(a) Write the importance of graphic standard.	<b>03</b>
	(b) Write the importance of part orientation in building time.	<b>04</b>
	(c) Discuss the layer thickness and hatch space on microstructure and part quality.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Enlist the name of data interfacing formats.	<b>03</b>
	(b) Write the effect of layer thickness in build time.	<b>04</b>
	(c) Discuss the layer thickness and hatch space on mechanical properties with suitable graph.	<b>07</b>
<b>Q.4</b>	(a) Write the limitation of powder bed fusion process.	<b>03</b>
	(b) Explain the post processing errors in RP process.	<b>04</b>
	(c) Explain the fused deposition modeling with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Write the importance of support structure in RP process.	<b>03</b>
	(b) Explain the part building errors in SLA.	<b>04</b>
	(c) Explain the selective laser sintering with neat sketch.	<b>07</b>
<b>Q.5</b>	(a) How RP is associated with reverse engineering?	<b>03</b>
	(b) Write the medical application of RP.	<b>04</b>
	(c) Explain the laminated object manufacturing with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) What is adaptive and direct slicing ?	<b>03</b>
	(b) Write the aviation application of RP.	<b>04</b>
	(c) Explain the stereolithography process with neat sketch.	<b>07</b>

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