GUJARAT TECHNOLOGICAL UNIVERSITY
BE MINOR- SEMESTER–IV EXAMINATION – WINTER 2025

Subject Code:114AN01   **Date:03-12-2025**
Subject Name:Introduction to Additive Manufacturing
Time:02:30 PM TO 05:00 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.**

			MARKS
Q.1	**(a)**	Define 3D Printing.	**03**
	(b)	Differentiate the additive manufacturing process and subtractive manufacturing.	**04**
	(c)	List out the advantages and limitations of an Additive manufacturing process. And write its application in industry.	**07**
Q.2	**(a)**	Write the advantages of Polyjet 3D printing.	**03**
	(b)	Write the challenges in 3D printing use.	**04**
	(c)	Discuss the Solid Object Ultraviolet-laser Printer (SOUP) with neat sketch	**07**
		OR	
	(c)	Write the industrial need of 3D printing in details.	**07**
Q.3	**(a)**	Write the material used in Liquid Based Processes.	**03**
	(b)	Differentiate SLA and SLS in rapid prototyping.	**04**
	(c)	Discuss the Stereo lithography process in detail with neat sketch.	**07**
		OR	
Q.3	**(a)**	Write the advantages of Colour jet Printing.	**03**
	(b)	Categorize the various Stereo lithography machines	**04**
	(c)	Write the principle and discuss the working of Multi Jet printing.	**07**
Q.4	**(a)**	Define the Colourjet printing.	**03**
	(b)	Write the process parameters of Laser Engineed Net Shaping.	**04**
	(c)	Write the principle and discuss the working of Selective Laser Sintering.	**07**
		OR	
Q.4	**(a)**	Define the Ultrasonic consolidation.	**03**
	(b)	Write the applications of the Ultrasonic consolidation	**04**
	(c)	Discuss the Electron Beam Melting.	**07**
Q.5	**(a)**	Define Fused Deposition Modeling.	**03**
	(b)	Write the challenges solid based processes for producing 3D parts.	**04**
	(c)	Discuss the Laminated Object Manufacturing (LOM).	**07**
		OR	
Q.5	**(a)**	Define Selective Deposition Lamination.	**03**
	(b)	Write the applications of Selective Deposition Lamination (SDL) process.	**04**
	(c)	List out the industrial applications of solid based processes for producing 3D parts.	**07**

****