

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2022****Subject Code:3171926****Date:10-01-2023****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.

		MARKS
Q.1	(a) What is the difference between additive and subtractive manufacturing?	03
	(b) Elaborate on the structure of .STL file format in 3D printing.	04
	(c) Explain the generic 3D printing process with neat sketch.	07
Q.2	(a) How is 3D printing used in product design?	03
	(b) Enlist important process parameters of FDM and explain any two in detail.	04
	(c) Explain slicing of tessellated cad model in detail with a flowchart.	07
OR		
	(c) Explain the contour and tool path generation in detail with a flowchart.	07
Q.3	(a) List out the application of SLS.	03
	(b) How data points are acquired in reverse engineering? Enlist various methods.	04
	(c) List the various types of solid modeling techniques and explain in detail B-Rep models.	07
OR		
Q.3	(a) List out the application of Stereolithography.	03
	(b) Explain any one indirect rapid tooling process.	04
	(c) List the various types of solid modeling techniques and explain in detail constructive solid geometry.	07
Q.4	(a) Discuss the advantages and disadvantages of LENS.	03
	(b) Explain different errors in pre-processing part of RP processes.	04
	(c) Explain laminated object manufacturing process with neat sketch.	07
OR		
Q.4	(a) Discuss the advantages and disadvantages of SGC.	03
	(b) Explain different errors in post-processing part of RP processes.	04
	(c) Explain Stereolithography process with neat sketch.	07
Q.5	(a) Enlist the applications of RPT in manufacturing and tooling?	03
	(b) Enlist the different application of RP in construction industry.	04
	(c) How is rapid prototyping transforming the jewelry industry?	07
OR		
Q.5	(a) How does aerospace technology make use of rapid tooling application?	03
	(b) Enlist the different application of RP in automobile industry.	04
	(c) What are the applications of rapid prototyping in the medical field?	07
