

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VIII (New) EXAMINATION – WINTER 2019****Subject Code: 2181914****Date: 21/11/2019****Subject Name: Rapid Prototyping****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.

		MARKS
Q.1	(a) Explain the importance of RP in product development process.	03
	(b) Enlist the advantages of additive manufacturing over subtractive manufacturing.	04
	(c) Explain the generic RP process with neat sketch.	07
Q.2	(a) Explain the importance of .STL file format in 3D printing.	03
	(b) List the various types of solid models and write the advantages and disadvantages of CSG models.	04
	(c) Explain Tool path generation in Rapid Prototyping with a flowchart.	07
	OR	
	(c) Explain slicing of tessellated cad model in detail with a flowchart.	07
Q.3	(a) Explain the importance of part orientation in 3D printing.	03
	(b) What are the different errors occurs in Part building process of RP?	04
	(c) Explain the difference Between ABS and PLA for 3D printing.	07
	OR	
Q.3	(a) Why are Support Structures Needed in FDM?	03
	(b) What are the different errors occurs in post processing of RP?	04
	(c) Explain in detail the direct rapid tooling process.	07
Q.4	(a) What do you mean by solid freeform fabrication technology?	03
	(b) What are the issues in any rapid prototyping process.	04
	(c) Explain with neat sketch the laminated object manufacturing process.	07
	OR	
Q.4	(a) Classify in detail the rapid tooling processes.	03
	(b) Explain the principle of Stereolithography process.	04
	(c) Describe SGC with neat sketch. State its advantages and disadvantages.	07
Q.5	(a) Enlist the different application of RP in automobile.	03
	(b) Explain the principle of spray metal tooling.	04
	(c) Explain Beam Deposition (LENS) Rapid Prototyping process in detail with neat sketch.	07
	OR	
Q.5	(a) Enlist the different application of RP in medical.	03
	(b) Explain the principle of liquid based RP process.	04
	(c) Explain SLS Rapid Prototyping process in detail with neat sketch.	07
