Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII(NEW) EXAMINATION – SUMMER 2019

Subject Code: 2181914 **Date: 09/05/2019**

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.**

Q.1	**(a)**	Discuss the applications of RP systems.	**03**
	(b)	What are the important challenges for selection of material in RP	**04**
	(c)	Write the difference between rapid prototyping and computer numerical control.	**07**
Q.2	**(a)**	Discuss the different scan patterns use in stereolithography (SL).	**03**
	(b)	What are the merits and demerits of laminated Object manufacturing?	**04**
	(c)	With a neat sketch explain Selective Laser Sintering.	**07**
		OR	
	(c)	Write the applications of powder bed fusion processes.	**07**
Q.3	**(a)**	What are the advantages and limitations of solid based system compared with liquid based system?	**03**
	(b)	Which Rapid Prototyping processes are best suited for production of ceramic parts, Why?	**04**
	(c)	Describe Fused deposition modeling process with a neat diagram.	**07**
		OR	
Q.3	**(a)**	Discuss the technical challenges of 3D printing.	**03**
	(b)	Describe 3D printing process.	**04**
	(c)	Explain SGC process with neat sketch.	**07**
Q.4	**(a)**	Explain Rapid tooling.	**03**
	(b)	Briefly explain the materials used in SLA.	**04**
	(c)	Explain in detail the process chain of Rapid Prototyping.	**07**
		OR	
Q.4	**(a)**	What is the difference between rapid tooling and rapid manufacturing?	**03**
	(b)	Explain silicon rubber tooling.	**04**
	(c)	Explain procedure of slicing and tool path generation with flowchart.	**07**
Q.5	**(a)**	Compare STL and SLC file format.	**03**
	(b)	Explain rapid tooling process.	**04**
	(c)	Explain the concept of support structure and material in RP process with neat sketch.	**07**
		OR	
Q.5	**(a)**	Compare RP and CNC.	**03**
	(b)	Differentiate between direct and indirect Rapid tooling.	**04**
	(c)	Discuss errors in RP processes.	**07**

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