

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**
