

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII EXAMINATION – WINTER 2025

Subject Code:3171926

Date:20-11-2025

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.

- Q.1** (a) Define term: Rapid Prototyping **03**  
(b) Write the limitation of manual prototyping. **04**  
(c) Discuss the importance of rapid prototyping technique in various industries. **07**
- Q.2** (a) Enlist the name of CAD modelling software. **03**  
(b) Write the limitation of NC/CNC. **04**  
(c) Differentiate between the traditional and rapid prototyping. **07**
- OR**
- (c) Write the classification of rapid prototyping process. **07**
- Q.3** (a) Write the importance of graphic standard. **03**  
(b) Write the importance of part orientation in building time. **04**  
(c) Discuss the layer thickness and hatch space on microstructure and part quality. **07**
- OR**
- Q.3** (a) Enlist the name of data interfacing formats. **03**  
(b) Write the effect of layer thickness in build time. **04**  
(c) Discuss the layer thickness and hatch space on mechanical properties with suitable graph. **07**
- Q.4** (a) Write the limitation of powder bed fusion process. **03**  
(b) Explain the post processing errors in RP process. **04**  
(c) Explain the fused deposition modeling with neat sketch. **07**
- OR**
- Q.4** (a) Write the importance of support structure in RP process. **03**  
(b) Explain the part building errors in SLA. **04**  
(c) Explain the selective laser sintering with neat sketch. **07**
- Q.5** (a) How RP is associated with reverse engineering? **03**  
(b) Write the medical application of RP. **04**  
(c) Explain the laminated object manufacturing with neat sketch. **07**
- OR**
- Q.5** (a) What is adaptive and direct slicing ? **03**  
(b) Write the aviation application of RP. **04**  
(c) Explain the stereolithography process with neat sketch. **07**

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