

Code: 17MEMD1T5C

**I M.Tech - I Semester – Regular / Supplementary Examinations
December 2018**

**RAPID PROTOTYPING
(MACHINE DESIGN)**

Duration: 3 hours

Max. Marks: 60

Answer the following questions.

1. a) What are the key aspects of Rapid Prototyping and explain the need for Rapid Prototyping? 8 M

b) Discuss the evolution of RP systems indicating the history and their growth rate in the industrial sector. 7 M

OR

2. a) List the classification of RP systems and discuss the advantages of Rapid Prototyping. 7 M

b) Explain in detail the process chain of Rapid Prototyping. 8 M

3. a) What are the principles behind SLA process and briefly explain the materials used in SLA process? 8 M

b) Differentiate SLA and SLS in Rapid prototyping. 7 M

OR

4. a) Explain the working principle of Solid Ground Curing with a neat sketch. 8 M

b) Write a short note on the micro fabrication. 7 M

5. a) Narrate Laminated Object manufacturing with neat sketch. 8 M

b) What are the merits and demerits of 'Multi-jet Modeling system'? 7 M

OR

6. a) With a neat sketch explain Fusion Deposition Modeling (FDM) process. 7 M

b) Briefly explain applications of LOM techniques for 'Boeing Rocket dyne'. 8 M

7. a) Explain the process and principle of SLS with a neat sketch. 8 M

b) Which Rapid Prototyping processes are best suited for production of ceramic parts. Why? 7 M

OR

8. a) List out the limitations and advantages of SLS process. 7 M

b) Write a short note on the following:

8 M

i) Sinter Bonding

ii) Laser Engineering Net shaping (LENS)