PVP 17

Code: **17MEMD1T5C**

I M.Tech - I Semester – Regular / Supplementary Examinations
February 2020

RAPID PROTOTYPING
(MACHINE DESIGN)

Duration: 3 hours Max. Marks: 60

Answer the following questions.

1. a) What are the main roles and functions for prototypes? How do you think rapid prototyping satisfies these roles? 8 M

   b) Describe the applications, benefits and limitations of Rapid Prototyping. 7 M

(OR)

2. a) Explain rapid prototyping process chain. 7 M

   b) What are the three types of automated fabricators? Describe them and give an example. 8 M

3. Describe the working principle, advantages and disadvantages of Stereo Lithography Apparatus process with a neat diagram. 15 M

(OR)

4. a) Describe the process flow of Cubital's Solid Ground Curing System. 8 M

b) Explain the process and principle involved in Rapid Freeze Prototyping. 7 M

5. a) Describe the process and principle of fused deposition modeling. 7 M

b) Write the models and specifications of different LOM machines used. 8 M

(OR)

6. a) Explain the principle of 3D systems multi-jet modeling system along with its advantages and disadvantages. 10 M

b) Compare and contrast the laser-based LOM process and the FDM systems. 5 M

7. a) Describe the principles relating to the Selective Laser Sintering process. 7 M

b) Explain the process and principle of OPTOMEC's LENS process. 8 M

(OR)

8. Discuss the advantages and disadvantages of powder-based RP systems compared with:
   (a) Liquid-based RP systems, (b) Solid-based RP systems.

15 M