

Roll No.

Total No. of Pages : 02

Total No. of Questions : 08

M.Tech (Mechanical Engineering) (2017 Batch) (Sem.-2)

RAPID PROTOTYPING

Subject Code : MTME-208

M.Code : 74984

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. a) What do you mean by rapid prototyping? What are the various roles of prototype in product development process?
b) Explain in detail the common information workflow indicating the main stages of Rapid prototyping workflow.
2. a) Specify and explain the different process, parameters of SLA technique, the different material which may be used in manufacturing of products in SLA technique.
b) Explain with a neat sketch, principle and working of Selective Laser Sintering Process.
3. a) Narrate Laminated Object Manufacturing with the help of a neat sketch.
b) Explain Stereo lithography process with a neat sketch.
4. a) Which Rapid Prototyping process is best suited for production of Ceramic parts? Justify your statement.
b) What are the limitations and advantages of fused deposition modeling process?
5. a) What do you mean by investment casting? Explain how it is used for rapid tool production.
b) How FDM is used in Rapid Prototyping? What are its applications and limitations?

6.
 - a) What is Rapid Tooling? Explain about sand casting process with its advantages and disadvantages.
 - b) What are the merits and demerits of LOM?
7.
 - a) Discuss a case study, describe how reverse engineering process will be applied to rapid prototyping technique.
 - b) Categorize how the material relationship will contribute in rapid prototyping technique.
8.
 - a) Describe the principle and operation of three dimensional printing with neat diagram. Lists its merits and demerits.
 - b) Explain the application of Rapid Prototyping in medical field with examples.

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