



Code: 13A03808

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2018

RAPID PROTO TYPING

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- Explain the need for rapid prototyping.
- Explain the fundamental principle of stereo lithography process.
- What are the factors that influence the performance of FDM process?
- List out the advantages and application of solid ground curing.
- Explain the working principle of thermal jet printing.
- Sketch the Sander's model used for products.
- Compare rapid tooling with conventional tooling.
- What is meant by rapid tooling?
- List out the factors influencing accuracy in rapid manufacturing process.
- Explain the need for surface digitization.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain rapid prototyping process chain along with the applications.

OR

3 Briefly explain the materials used in SLS and their importance.

UNIT – II

4 Explain the path generation in fusion decomposition modeling (FDM).

OR

5 Narrate laminated object manufacturing with neat sketch.

UNIT – III

6 What are the factors that influence the performance of the 3D printing process? Explain in detail.

OR

7 With a neat sketch, explain the following concept modeling techniques:

- Genisys Xs printer.
- Object quadra system.

UNIT – IV

8 Explain the following methods of tooling techniques with the help of neat sketch:

- Sand cast tooling.
- Laminate tooling.

OR

9 Describe the importance of magic's, mimics, solid view, view expert operations in rapid prototyping software.

UNIT – V

10 Write short notes on the following:

- Influence of building orientation.
- Errors in SH files.

OR

11 With a neat sketch, explain different steps involved in vacuum casting.

