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Question Paper Code: BCC003



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech I Semester End Examinations (Regular) - February, 2017

Regulation: IARE-R16

RAPID PROTOTYPE TECHNOLOGIES

(CAD/CAM)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) Explain the fundamentals of the Rapid prototype. [7M]
(b) Briefly discuss the historical development of Rapid Prototyping. [7M]
2. (a) Discuss the differences between Rapid prototype technology and numerical control technology. [7M]
(b) Describe the advantages and applications of Rapid prototype. [7M]

UNIT – II

3. (a) Explain with neat sketch laminated object manufacturing. [7M]
(b) State the merits and demerits of FDM. [7M]
4. (a) Explain the working principle of SGC and list out any four advantages. [7M]
(b) Explain the basic principle of stereo litho sintering process and discuss the materials used in stereo litho sintering process. [7M]

UNIT – III

5. (a) Discuss the working principle of selective laser sintering and list out any four advantages. [7M]
(b) Discuss the merits and de-merits of powder based rapid prototype system. [7M]
6. (a) What is Rapid tooling. Give a brief classification of rapid tooling. [6M]
(b) Explain any two methods of rapid tooling. [8M]

UNIT – IV

7. (a) Discuss SH file creation and errors in SH file. [7M]
(b) What are the features of RP software and explain briefly solid view, view expert, 3D view. [7M]

8. (a) Explain STL format. Discuss the generic and dedicated solution with an example. [6M]
(b) Write short notes on [8M]
 i. Influence of building orientation.
 ii. Part building errors.

UNIT – V

9. (a) Explain briefly the applications of the RP in jewel industry and coin making. [7M]
(b) With a case study explain the applications of RP in automotive industry. [7M]
10. Explain with an example / case study. Discuss the application of RP in following industries [14M]
 i. Aerospace industry.
 ii. Medical application.