

CBCS SCHEME

USN

18MT642

Sixth Semester B.E. Degree Examination, Dec.2024/Jan.2025 Rapid Prototyping

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the need for rapid prototyping (RP) development. (07 Marks)
- b. Discuss the principle behind the Stereo Lithography process. (07 Marks)
- c. Discuss growth of the RP industry. (06 Marks)

OR

- 2 a. Classify rapid prototyping techniques. (08 Marks)
- b. Explain applications of rapid prototyping. (08 Marks)
- c. Summarize the parameters for stereolithic processes. (04 Marks)

Module-2

- 3 a. Illustrate with a neat sketch, Fusion Deposition Modelling. (10 Marks)
- b. Briefly explain solid ground cutting and process parameter of FDM. (10 Marks)

OR

- 4 a. With a neat block diagram, explain Laminated Object Manufacturing. (10 Marks)
- b. Explain the applications of FDM and LOM. (10 Marks)

Module-3

- 5 a. Explain the principle of operation of Selective Laser Sintering (SLS). (10 Marks)
- b. Describe the process parameters and applications of SLS. (10 Marks)

OR

- 6 a. With a neat diagram explain the working of Thermal jet printer. (10 Marks)
- b. Describe the process of Data preparation in SLS. (10 Marks)

Module-4

- 7 a. Describe briefly about silicon rubber tooling. (10 Marks)
- b. Explain spray metal tooling. (10 Marks)

OR

- 8 a. Explain the quick cast process in brief. (08 Marks)
- b. Write short notes on : i) Sand casting tooling ii) Laminate tooling. (12 Marks)

Module-5

- 9 a. Explain Magic's and Mimic's software which are used for 3D printouts of RP machine. (10 Marks)
- b. List the internet based software for RP and explain how the solid view helps in development of 3D model. (10 Marks)

OR

- 10 a. Briefly explain Data Preparation Errors. (10 Marks)
- b. Briefly explain the factors influencing on the accuracy. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

