



## Sixth Semester B.E. Degree Examination, June/July 2024 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. Discuss in detail, the classification of RP systems. (10 Marks)
- b. Describe in brief the growth of RP Industry. (10 Marks)

OR

- 2 a. Discuss the principle behind SLA process and also discuss the various applications of SLA process. (10 Marks)
- b. Discuss the effect of various process parameters of SLA process. (08 Marks)
- c. Name any two photosensitive resins used in SLA process. (02 Marks)

### Module-2

- 3 a. Describe FDM process with neat sketch. (10 Marks)
- b. Explain different process parameters and applications of FDM. (10 Marks)

OR

- 4 a. Write a short note on LOM materials and applications. (10 Marks)
- b. Explain the principle of operation of solid ground curing with a suitable diagram. (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. Briefly describe Indirect Rapid tooling. (10 Marks)
- b. Explain Aluminium filled Epoxy tooling and 3Q Keltool. (10 Marks)

OR

- 8 a. Differentiate Soft tooling and Hard tooling with examples. (05 Marks)
- b. Describe: i) Sand Cast tooling    ii) Quick Cast process    iii) Laminate tooling. (15 Marks)

### Module-5

- 9 a. Write a short note on magics and Imics. (10 Marks)
- b. Write a short note on STL files. (10 Marks)

OR

- 10 a. Explain data preparation error. (10 Marks)
- b. Describe part building error in SLS process. (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.