



CBCS SCHEME

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18ME741

Seventh Semester B.E. Degree Examination, Dec.2023/Jan.2024

Additive Manufacturing

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Differentiate between CNC and Additive Manufacturing. (10 Marks)
b. Explain Additive Manufacturing Process Chain. (10 Marks)

OR

- 2 a. What is Additive Manufacturing? What are the benefits of AM? (10 Marks)
b. With a block diagram, explain general integration of AM machine. (10 Marks)

Module-2

- 3 a. With a neat sketch, explain photopolymerization process. (10 Marks)
b. What are benefits and drawbacks of use of photopolymerization technology? (10 Marks)

OR

- 4 a. With a neat sketch, explain Selective Laser Sintering (SLS) process. (10 Marks)
b. What is extrusion based system? With a neat sketch, explain Fused Deposition Modelling (FDM). (10 Marks)

Module-3

- 5 a. With a neat sketch, explain the working of Laminated Object Manufacturing (LOM). (10 Marks)
b. Write a note on research achievements in printing deposition process. (10 Marks)

OR

- 6 a. Explain with neat sketch, Beam Deposition Process. List advantages and limitations of the process. (10 Marks)
b. What is direct write technology? Explain Ink based direct write technology. (10 Marks)

Module-4

- 7 a. Write a note on selection methods for a part. (10 Marks)
b. Explain the following post processing operations:
(i) Support material removal
(ii) Surface texture improvements (10 Marks)

OR

- 8 a. Explain different types of problems that occur in STL file. (10 Marks)
b. Explain the following post processing operations :
(i) Accuracy improvements
(ii) Preparation for use as pattern (10 Marks)

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.

Module-5

- 9 a. Write a note on AM applications in the field of
(i) Medical (10 Marks)
(ii) Automobile
- b. Write a note on:
(i) Align technology (10 Marks)
(ii) Siemens and phonak hearing
- OR**
- 10 a. Write a note on AM applications in the field of
(i) Aerospace (10 Marks)
(ii) Industrial design
- b. Write a note on:
(i) Life cycle Costing (10 Marks)
(ii) Future of direct digital marketing
