



CBCS SCHEME

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18ME741

Seventh Semester B.E. Degree Examination, June/July 2023

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. Define additive manufacturing. How it is distinct form CNC machining. (10 Marks)
b. Briefly explain various classifications of AM processes. (10 Marks)

OR

- 2 a. Explain the eight steps involved in AM Process chain. (10 Marks)
b. Explain the following build related factors :
i) Part orientation ii) Removal of supports. (10 Marks)

Module-2

- 3 a. Explain the following concepts : i) Microstereolithography
ii) Photopolymerization materials. (10 Marks)
b. With a neat sketch, explain the process of selective laser sintering process. (10 Marks)

OR

- 4 a. List out the various process parameters of PBF and briefly explain them. (10 Marks)
b. With a neat sketch, explain the extrusion based system. (10 Marks)

Module-3

- 5 a. Explain the process of three dimensional printing. (06 Marks)
b. Mention the advantages of binder jetting. (04 Marks)
c. With a neat sketch, explain the process of ultrasonic consolidation. (10 Marks)

OR

- 6 a. Explain the process of Laminated object manufacturing with a neat diagram. (10 Marks)
b. Differentiate between form then bond and bond then form. (04 Marks)
c. List out the UC process parameters and explain how these effect bonding. (06 Marks)

Module-4

- 7 a. Explain decision theory concept for selection method for a part. (10 Marks)
b. Explain the concept of production planning and control. (10 Marks)

OR

- 8 a. Explain the various problems associated with STL file. (10 Marks)
b. List out various post processing technique s. Explain any two in detail. (10 Marks)

Module-5

- 9 a. Example the following concepts with respect to additive manufacturing :
i) Discrete multiple material processes ii) Porous multiple material process. (10 Marks)
b. Explain the various challenges faced by multiple materials for future direction. (10 Marks)

OR

- 10 a. Elaborate the various applications of AM. (10 Marks)
b. What are DDM drivers? Explain the various factors which enable applications. (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.