

CBCS SCHEME

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18ME741

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 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. With neat sketch, explain Genetic A.M. process. (10 Marks)
b. Briefly distinguish any five differences between AM and ANC machining. (10 Marks)

OR

- 2 a. List and explain varieties of materials used in A.M. process. (10 Marks)
b. Discuss material handling issues in A.M. Process. Mention any five applications of A.M. process. (10 Marks)

Module-2

- 3 a. With neat sketch, explain Stereolithography process. (10 Marks)
b. Briefly explain the benefits and drawbacks of photopolymerization process. (10 Marks)

OR

- 4 a. Briefly explain the process of Selective Laser Sintering. (10 Marks)
b. With neat sketch, explain Fused Deposition Modeling (FDM) process. (10 Marks)

Module-3

- 5 a. What is Laminated Object Manufacturing? With neat sketch, explain gluing techniques. (10 Marks)
b. With neat sketch, brief the Ultrasonic Additive manufacturing. (10 Marks)

OR

- 6 a. Briefly explain Laser Transfer direct. Write with neat sketch. (10 Marks)
b. Briefly discuss the applications of direct write technology. (10 Marks)

Module-4

- 7 a. With neat sketch, brief the Flow chart of A.M. selection. (10 Marks)
b. Briefly explain the Surface Texture improvements and Accuracy Improvements in Post process of A.M. (10 Marks)

OR

- 8 a. With neat sketch, briefly explain the properties enhancements using Thermal techniques. (10 Marks)
b. Briefly discuss how STL file is manipulated in A.M. (10 Marks)

Module-5

- 9 a. Briefly explain Multi – material process mechanism in A.M. process. (10 Marks)
b. What are the factors enable the DDM application in A.M. process. (10 Marks)

OR

- 10 a. Briefly discuss the use of A.M. in Medical applications and Dental applications. (10 Marks)
b. Briefly explain the application of A.M. in Aerospace and Automobile sectors. (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.