CBCS SCHEME

USN

21ME731

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
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. List the differences between AM and CNC machining. (05 Marks)

b. List the benefits of AM (05 Marks)

c. Explain the steps involved in AM process with a flow diagram. (10 Marks)

OR

2 a. Classify AM processes. (06 Marks)

b. Explain Material handling issues in AM. (07 Marks)

c. Explain Reverse Engineering Technology. (07 Marks)

Module-2

3 a. Explain Stereo Lithography with a sketch. (10 Marks)

b. Explain selective Laser Sintering Process with a sketch. (10 Marks)

OR

4 a. Explain Electron Beam Melting Process with a sketch. (10 Marks)

b. Explain Fused Deposition Modelling Process with a sketch. (10 Marks)

Module-3

5 a. Explain Binder Jetting Process with a sketch. (08 Marks)

b. Explain Ultrasonic consolidation with a sketch. (08 Marks)

c. List the benefits of Beam Deposition System. (04 Marks)

OR

6 a. Explain Laminated Object Manufacturing Process with a sketch. (10 Marks)

b. Explain Aerosol Jet System with a sketch. (06 Marks)

c. List the advantages of Binder Printing. (04 Marks)

Module-4

7 a. Explain port processing techniques involved in AM. (10 Marks)

b. Explain the problems associated with STL files. (10 Marks)

OR

8	a.	Explain decision theory concept for selection method for a part.	(08 Marks)
	b.	Explain STL file manipulation on AM machine.	(08 Marks)
	c.	Describe non-thermal post processing techniques used to enhance the properties of AM parts.	(04 Marks)

Module-5

9	a.	Elaborate the various applications of AM.	(10 Marks)
	b.	Explain Discrete Multiple Material Process and Porous Multiple Material Processes.	(10 Marks)

OR

10	a.	Explain Multiple Material Approaches in Additive Manufacturing.	(10 Marks)
	b.	Describe Align Technology.	(05 Marks)
	c.	Describe DDM drivers.	(05 Marks)

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