

CBCS SCHEME

BAE405A

USN

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024

Additive Manufacturing (3D Printing)

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module - 1			M	L	C
Q.1	a.	Explain Additive manufacturing process with its significance.	10	L1	CO1
	b.	List and explain the potential benefits and drawback of Additive manufacturing.	10	L2	CO2
OR					
Q.2	a.	Differentiate between Additive Manufacturing (AM) and Computer Numerical Control (CNC) process.	10	L1	CO1
	b.	Explain in brief about stages of Additive manufacturing.	10	L2	CO1
Module - 2					
Q.3	a.	Explain the process of Stereolithography and list the materials used in the process.	10	L2	CO2
	b.	Sketch and explain powder bed fusion process.	10	L1	CO2
OR					
Q.4	a.	Sketch and explain electron beam process.	10	L2	CO1
	b.	Give a brief note on powder bed fusion mechanism.	10	L2	CO2
Module - 3					
Q.5	a.	Brief on research achievements in printing deposition.	10	L2	CO3
	b.	Explain material modification methods in printing and list any 4 benefits of binder printing.	10	L2	CO2
OR					
Q.6	a.	Brief on ultrasonic consolidation and explain its application.	10	L2	CO3
	b.	Sketch and explain beam deposition process.	10	L2	CO3
Module - 4					
Q.7	a.	Explain the selection method and for a part in additive manufacturing.	10	L2	CO3
	b.	Explain production planning and control in AM process.	10	L2	CO3
OR					
Q.8	a.	Explain the process of creating STL file from CAD system.	10	L2	CO3
	b.	Discuss about major problems associated with STL files.	10	L2	CO4
Module - 5					
Q.9	a.	Discuss about multiple, discrete, porous material approaches.	12	L2	CO3
	b.	List and explain the commercial applications of multiple materials.	08	L2	CO2
OR					
Q.10	a.	Give brief note on direct digital manufacturing process.	10	L1	CO4
	b.	With the help of key characteristics contrast the process of rapid prototyping and direct digital manufacturing.	10	L2	CO4
