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CBCS SCHEME

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BME714A

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2026
Additive Manufacturing

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.	Define Additive Manufacturing Process. Write the advantages of Additive Manufacturing over CNC machining.	10	L3	CO1
	b.	Write a note on : i) Stereolithography ii) Rapid prototyping.	10	L3	CO1
		OR			
Q.2	a.	Write a note on 8 steps in Additive Manufacturing.	10	L3	CO1
	b.	Explain the application areas of Additive Manufacturing.	10	L3	CO1
		Module – 2			
Q.3	a.	With a neat sketch, explain stereolithography process along with its application.	10	L2	CO2
	b.	Explain briefly FDM process with its application advantages and disadvantages.	10	L2	CO2
		OR			
Q.4	a.	With a neat sketch, explain Electron beam melting process with its application.	10	L2	CO2
	b.	Explain briefly Selective Laser Sintering Process with its application, advantages and disadvantages.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain the technical challenges in 3D printing.	10	L2	CO3
	b.	Explain the following : i) Ultrasonic consolidation ii) Laminated object manufacturing	10	L2	CO3

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		OR			
Q.6	**a.**	Explain Beam Deposition process with its advantages and disadvantages.	**10**	**L2**	**CO3**
	b.	Explain Direct Write Technology.	**10**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	Explain the selection method and challenges in selection for a part.	**10**	**L2**	**CO4**
	b.	Explain the following : i) STL file ii) STL file manipulation	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	Explain post processing in Additive Manufacturing.	**10**	**L2**	**CO4**
	b.	Explain property enhancement using thermal and non-thermal technique.	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Explain the application of Additive Manufacturing in Biomedical and General Engineering Industries.	**10**	**L2**	**CO5**
	b.	Explain Multiple-material manufacturing approaches in Additive manufacturing.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain Direct Digital Manufacturing.	**10**	**L2**	**CO5**
	b.	Explain Additive Manufacturing Applications in Aerospace, Defense and Automobile Industry.	**10**	**L2**	**CO5**

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