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22MAR242

Second Semester M.Tech. Degree Examination, June/July 2023
Additive Manufacturing Technologies

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.	Write a difference between AM and CNC machine.	10	L1	CO1
	b.	Illustrate fundamental principal of additive manufacturing.	10	L1	CO2
OR					
Q.2	a.	Explain advantages and limitation of CAD technologies.	10	L1	CO1
	b.	What is hybrid system in AM? How it enhance the production of complex parts?	10	L2	CO2
Module – 2					
Q.3	a.	Explain variation of AM machine to another (conversational). Also explain material handling issue.	10	L2	CO2
	b.	List out the sequential step involved in additive manufacturing process.	10	L2	CO2
OR					
Q.4	a.	Explain difference between laser scan vat photo polymerization and photo polymerization.	10	L2	CO2
	b.	What is vector scanning how does it help in SLS machine?	10	L2	CO2
Module – 3					
Q.5	a.	Explain the limitation of FDM and bio extrusion system.	10	L2	CO2
	b.	With neat sketch, explain extrusion process in AM.	10	L3	CO3
OR					
Q.6	a.	Explain the benefits and drawbacks of material of material jetting.	10	L2	CO2
	b.	How does material jetting work in additive manufacturing? Explain with example.	10	L2	CO3
Module – 4					
Q.7	a.	Explain hierarchical structure industrial design and these application.	10	L2	CO2
	b.	How does design of additive manufacturing optimize 3D model production?	10	L3	CO3
OR					
Q.8	a.	With a flow chart, explain composite manufacturing assembly system.	10	L2	CO2
	b.	What is investment casting and explain EDM electrodes manufacture by investment casting.	10	L3	CO3
Module – 5					
Q.9	a.	Write any 10 application of additive manufacturing system used in medical and software system.	10	L2	CO2
	b.	List out the rapid tooling system in additive manufacturing system and explain.	10	L3	CO3
OR					
Q.10	a.	What are the limitations associated with additive manufacturing system?	10	L2	CO4
	b.	List out limitation of additive manufacturing in medical application.	10	L3	CO4
