MEOE01

RAMAIAH
Institute of Technology

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(Autonomous Institute, Affiliated to VTU)
(Approved by AICTE, New Delhi & Govt. of Karnataka)
Accredited by NBA & NAAC with 'A+' Grade

SEMESTER END EXAMINATIONS – MARCH 2022

Program : **B.E. : Common to all Programs**
Course Name : **3D Printing**
Course Code : **MEOE01**

Semester : **V**
Max. Marks : **100**
Duration : **3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

		UNIT- I			
1.	a)	Distinguish between CNC and Additive Manufacturing.		CO1	(10)
	b)	With flow chart explain the AM information workflow.		CO1	(10)
2.	a)	With a sketch, explain the AM data formats.		CO1	(10)
	b)	Classify the non contact method of data collection process and explain any two methods.		CO1	(10)
		UNIT – II			
3.	a)	Explain the following AM process, i) Solid sheet system ii) Molten material system.		CO2	(10)
	b)	Write about i) What are the steps involved in hollowing the part? ii) How can be reduce the part count in an assembly?		CO2	(10)
4.		Write short notes on: i) Metal Systems ii) Hybrid Systems iii)Removal of Supports iv) Part Orientation.		CO2	(20)
		UNIT – III			
5.	a)	Illustrate the process parameter of SLA process with a neat sketch.		CO3	(10)
	b)	List the different Materials used in Photo polymerization process and explain Photo polymerization process.		CO3	(10)
6.	a)	With a neat sketch and discuss the working process of Powder bead fusion process.		CO3	(15)
	b)	List the process parameter in power bed fusion process and explain polymer laser sintering process.		CO3	(05)
		UNIT – IV			
7.	a)	Write about supporting and building materials for FDM.		CO4	(08)
	b)	What are the limitations of FDM?		CO4	(06)
	c)	List out the process parameters of FDM.		CO4	(06)
8.		Write a note on: i)Powder Feeding ii) Material Delivery iii)Wire Feeding iv)Laser Based Metal Deposition Processes		CO4	(20)
		UNIT – V			
9.	a)	Explain: i)Aluminum filled epoxy tooling ii) Spray metal tooling.		CO5	(12)
	b)	Discuss the applications of 3D printing in art models and engineering model analysis.		CO5	(08)
10.	a)	Explain Epoxy tools and Paper Pulp Molding Tools.		CO5	(12)
	b)	List out the benefits of 3D printing in various domain.		CO5	(08)

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