Register Number:……..

KUMARAGURU
college of technology
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B. E./B.TECH. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Fourth Semester

COMMON TO ALL BRANCHES

U18MCR0002: Additive Manufacturing Processes

COURSE OUTCOMES

CO1: Understand the fundamentals of additive manufacturing
CO2: Describe the operating principles of liquid and solid based additive manufacturing process.
CO3: Describe the operating principles of solid based additive manufacturing process.
CO4: Explain the concepts of powder based additive manufacturing process.
CO5: Describe the principles of binder and LOM additive manufacturing process.
CO6: Understand the various types of post-processing in additive manufacturing process.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Define Additive Manufacturing.	CO1	[K_2]
2.	List the need for Additive Manufacturing.	CO1	[K_2]
3.	Define photo-polymerization.	CO2	[K_2]
4.	Enumerate any four process parameters of SLA.	CO2	[K_2]
5.	Write a few powder-bed fusion techniques of Additive Manufacturing Processes.	CO3	[K_2]
6.	List the different shapes of metal powders.	CO3	[K_3]
7.	Write a short note on multi-jet modelling.	CO4	[K_2]
8.	How thermal bonding influences the quality of a product?	CO4	[K2]
9.	Give a few limitations of Laminated Object Manufacturing.	CO5	[K_2]
10.	List out the post processing techniques used in additive manufacturing	CO6	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	Explain the procedure of product development in additive manufacturing.	16	CO1	[K_2]
12.	With the help of neat diagram explain the working principle of DLP.	16	CO2	[K_2]

13.	With respect to Laser Engineered Net Shaping (LENS), explain its process, materials used along with advantages and disadvantages.	16	CO3	[K_2]
14.	Explain the working principle of Binder Jetting with a simple sketch.	16	CO4	[K_2]
15.	Explain the working Laminated Object Manufacturing process.	16	CO5	[K_2]
16.	Explain how thermal and non-thermal techniques are used to enhance the properties of additively manufactured parts.	16	CO6	[K_2]

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