

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Seventh Semester**Artificial Intelligence and Data Science***OME352 – Additive Manufacturing****(Common to Agricultural Engineering, Computer Science and Engineering &
Information Technology)***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Classify Additive manufacturing processes.	L2	1	2
2.	Illustrate your understanding about Rapid Tooling.	L2	1	2
3.	Define vat polymerization.	L1	2	2
4.	List any four applications of FDM process.	L1	2	2
5.	Write the principle of Selective Laser Melting.	L2	3	2
6.	Indicate the types of Binder Jetting.	L1	3	2
7.	Mention the types of materials used in Material Jetting.	L1	4	2
8.	Which mode of droplet formation ensures placement accuracy in Material Jetting?	L2	4	2
9.	Name the different materials used in LOM process.	L1	5	2
10.	What is mean by Direct Write Technology.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Elaborate about data processing for Rapid prototyping.	L2	1	8
	ii Discuss briefly the unique capabilities of Additive Manufacturing.	L2	1	8
	Or			
	b Explain the step-by-step process of building printing with the help of a neat illustration.	L2	1	16
12.	a Explain, with the aid of a neat sketch, the steps involved in product fabrication through the SLA process. Also, mention their merits and demerits.	L2	2	16
	Or			
	b Sketch and explain the working principle, process parameters, applications, and limitations of FDM process.	L2	2	16

13.	a	i	Demonstrate the process of Selective Laser Melting.	L2	3	8
		ii	Discuss in detail the working principle and applications of Electron Beam Melting.	L2	3	8
			Or			
	b		Describe the steps involved in the Binder Jetting Process with practical examples.	L2	3	16
14.	a		In a biomedical application, customized anatomical models are required for surgical planning. With reference to this case, describe how the Material Jetting process can be employed for producing such models.	L4	4	16
			Or			
	b		Illustrate and explain the operational procedure of the Laser Engineering Net Shaping (LENS) process with reference to a real-world case study.	L4	4	16
15.	a		Illustrate and explain the LOM technique, highlighting the step-by-step fabrication process, equipment used, and challenges involved in producing complex geometries.	L3	5	16
			Or			
	b		With the help of a neat schematic, describe the process of Ink-Based Direct Writing. Also, discuss its advantages, limitations, and potential applications in advanced manufacturing.	L3	5	16