

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Sixth Semester B.E. Degree Examinations, September/October 2024

ADDITIVE MANUFACTURING

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions choosing ONE full Question from each Module.
 2. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PI)</u>
<u>Module-1</u>			
1.	a. Explain briefly about generic additive manufacturing process.	10	(1 : 1 : 1.6.1)
	b. Explain the needs and drawbacks of additive manufacturing.	10	(1 : 1 : 1.6.1)
(OR)			
2.	a. Briefly discuss about metal and hybrid systems.	10	(1 : 1 : 1.6.1)
	b. Explain the classification of additive manufacturing process.	10	(1 : 1 : 1.6.1)
<u>Module-2</u>			
3.	a. With a neat sketch, briefly explain principle of Stereo-lithography.	10	(2 : 2 : 1.6.1)
	b. Briefly discuss about polymerisation process benefits and drawbacks.	10	(2 : 2 : 1.6.1)
(OR)			
4.	a. Sketch and explain selective laser sintering process.	10	(1 : 2 : 1.6.1)
	b. With a neat sketch, briefly explain fused deposition modelling.	10	(1 : 2 : 1.6.1)
<u>Module-3</u>			
5.	a. Sketch and explain laminated object manufacturing process.	10	(2 : 3 : 1.6.1)
	b. With a neat sketch, briefly explain ultrasonic consolidation.	10	(2 : 3 : 1.6.1)
(OR)			
6.	a. List various direct write technologies and explain Ink based DWT.	10	(2 : 3 : 1.6.1)
	b. With a neat sketch, explain DW beam deposition of electron beam.	10	(1 : 3 : 1.6.1)
<u>Module-4</u>			
7.	a. Briefly discuss about challenges of selection in AM process.	10	(1 : 4 : 1.6.1)
	b. Write a short note on problems with STL files and file manipulation.	10	(1 : 4 : 1.6.1)
(OR)			
8.	a. Explain post processing of additive manufacturing parts.	10	(1 : 4 : 1.6.1)
	b. Explain property used in enhancement using non-thermal technique.	10	(1 : 4 : 1.6.1)
<u>Module-5</u>			
9.	a. Write a note on align technology and DDM drivers.	10	(1 : 5 : 1.6.1)
	b. Differentiate between additive and subtractive manufacturing.	10	(1 : 5 : 1.6.1)
(OR)			
10.	a. With a neat sketch, explain about life cycle costing.	10	(1 : 5 : 1.6.1)
	b. Explain the use of pattern prepared by AM process for investment casting.	10	(2 : 5 : 1.6.1)

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Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI- Performance Indicator)