Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (S,FE) Examinations September 2026 (2019 Scheme)

Course Code: MET468
Course Name: ADDITIVE MANUFACTURING

Max. Marks: 100 **Duration: 3 Hours**

PART A
Answer all questions, each carries 3 marks.

		Marks
1	List any two benefits of additive manufacturing?	(3)
2	Explain the principle of additive manufacturing?	(3)
3	What is the role of support structures in additive manufacturing?	(3)
4	Discuss the role of part orientation in additive manufacturing?	(3)
5	Explain the principle of selective laser sintering?	(3)
6	List any three advantages of LOM?	(3)
7	What are the limitations of STL File?	(3)
8	List any three applications of selective laser melting?	(3)
9	Discuss direct Processes in AM?	(3)
10	List any three applications of Additive manufacturing in biomedical field?	(3)

PART B
Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Compare additive manufacturing with conventional manufacturing?	(6)
	b)	Explain materials used in additive manufacturing.	(8)
		OR	
12	a)	What are the challenges associated with additive manufacturing?	(6)
	b)	Classify additive manufacturing process?	(8)

Module II

13	a)	Explain the process of slicing in additive manufacturing? List any two slicing software's?	(6)
	b)	Explain the key aspects of model reconstruction in additive manufacturing?	(8)
		OR	
14	a)	Write a note on tool path generation?	(6)
	b)	Explain the digitization techniques used in additive manufacturing?	(8)

Module III

15 Explain the principle, process, advantages and applications of stereolithography with neat sketches? (14)

OR

16 Explain the principle, process, advantages and applications of FDM with neat sketches? (14)

Module IV

17 a) Explain any two translators used in place of STL? (6)

b) Explain the consequence of building invalid tessellated models? (8)

OR

18 a) Explain the principle and process of jetting? (6)

b) What are the newly proposed data formats in AM. What is its merit over STL File format? (8)

Module V

19 a) With suitable examples, explain the application of rapid prototyping in aerospace sector? (7)

b) Explain direct tooling and indirect tooling with suitable examples? (7)

OR

20 a) With suitable examples, explain the application of rapid prototyping in automotive sector? (7)

b) What is rapid tooling? Explain the applications of rapid tooling? (7)

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