

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

07 THRISSUR CLUSTER

FIRST SEMESTER M.TECH. DEGREE EXAMINATION, MARCH 2021

Production Engineering

(Manufacturing Systems Management)

07PE6111 Advanced Materials for Manufacturing and Processes

Max. Marks : 60

Duration : 3 Hours

Answer all six questions. Part 'a' of each question is compulsory.

Answer either part 'b' or part 'c' of each question

Q.no.	Module 1	Marks
1a	How do you define composites? What do you think is the relevance of composites?	4
	Answer b or c	
b	Based on matrices and reinforcements how will you classify composites?	5
c	Discuss the applications of composites.	5
Q.no.	Module 2	Marks
2a	Explain any one processing method of metal matrix composites.	4
	Answer b or c	
b	Discuss about the slurry infiltration method used for ceramic matrix composites.	5
c	Describe the pultrusion method for polymer matrix composites.	5
Q.no.	Module 3	Marks
3a	Describe any one method for powder production in powder metallurgy.	4
	Answer b or c	
b	What are the powder characteristics in powder metallurgy?	5
c	Explain the need and mechanism of sintering in powder metallurgy.	5

Q.no.	Module 4	Marks
4a	Hownanomaterials are different?. How arethey classified?	4
	Answer b or c	
b	What are all the fields in which powder metallurgy components are applied?	5
c	Explain the applications of nanomaterials?	5
Q.no.	Module 5	Marks
5a	Why it is necessary to have by non-conventional material removal processes?	5
	Answer b or c	
b	Explain chemical machining methods with a neat diagram.	7
c	Explainwater jet machining process with a proper sketch.	7
Q.no.	Module 6	Marks
6a	Discuss on surface topographyof engineering components.	5
	Answer b or c	
b	Explainany one of the spray technique used for coating of engineering components.	7
c	Compare between PVD and CVD methods.	7