



		SET-1		Total Pages: 2	
Reg No.:				Name:	
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY FIRST SEMESTER (R) M Tech DEGREE EXAMINATION, FEBRUARY 2023					
Discipline: Department Of Industrial Automation and Robotics					
Course Code & Name: 221EME044: NANO AND MICRO MANUFACTURING					
Max. Marks: 60			Duration: 2.5 Hours		
PART A					
<i>Answer all questions. Each question carries 5 marks</i>					Marks
1	What is the role of precision manufacturing in the modern engineering field?				(5)
2	Differentiate micro scale and macro machining				(5)
3	Explain heat affected zone.				(5)
4	What are the properties of quantum dots? Briefly explain the application of quantum dots.				(5)
5	With help of a neat sketch explain the working of Electron microscopy				(5)
PART B					
<i>Answer any 5 questions. Each question carries 7 marks</i>					
6	Differentiate top-down and bottom-down approaches for micro and nano manufacturing with one example.				(7)
7	Explain micro EDM and micro ECM.				(7)
8	What is the significance of diamond-turning drilling and milling operations? Differentiate diamond-turning operation from conventional machining operation.				(7)
9	With help of a neat sketch describe the working of laser beam machining				(7)
10	Explain the CVD process for the synthesis of carbon nanotube with help of neat sketch.				(7)
11	List out the process parameters used for the Magneto Rheological Finishing. What is the need for advanced finishing techniques				(7)
12	Explain any two finishing characterization methods at the nano level.				(7)