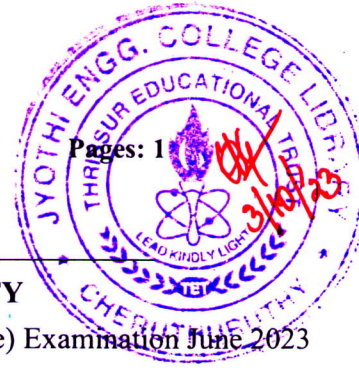


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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Second Semester M.Tech Degree Regular/PhD Even Semester (M.Tech New Scheme) Examination June 2023

Discipline: MECHANICAL ENGINEERING

Course Code & Name: 222TME004 MODERN MANUFACTURING SYSTEMS

Max. Marks: 60

Duration: 2.5 Hours

PART A

Answer all questions. Each question carries 5 marks

Marks

- 1 What are the requirements from industry, demanding non-traditional machining? (5)
- 2 Sketch the schematic layout of Electro chemical machining? What is the significance of tool-work gap? (5)
- 3 What is the need for flushing in electric discharge machining? Explain different types of flushing (5)
- 4 How electron beam is generated and controlled in electron beam machining? (5)
- 5 Explain the magnetic pulse forming process with advantages? (5)

PART B

Answer any 5 questions. Each question carries 7 marks

- 6 With a neat sketch explain the working principle of ultrasonic machining process? (7)
- 7 Explain the following variables that influence the metal removal and accuracy of machining in abrasive jet machining, carrier gas, types of abrasives and standoff distance? (7)
- 8 Explain with neat sketch Electro chemical machining (ECM) process? How is material removal rate calculated in ECM (7)
- 9 Differentiate between wire EDM and die sinking EDM; To cut slots in a 100 mm thick steel block, which method is suitable and why (7)
- 10 Explain heat affected zone (HAZ) in laser machining? How to identify and quantify HAZ in different pulsed laser machining regimes (7)
- 11 What are the elements in plasma arc machining (PAM) system? What is the mechanism of metal removal in PAM? (7)
- 12 What are the changes in mechanical properties of a sheet subjected to explosive forming (7)
