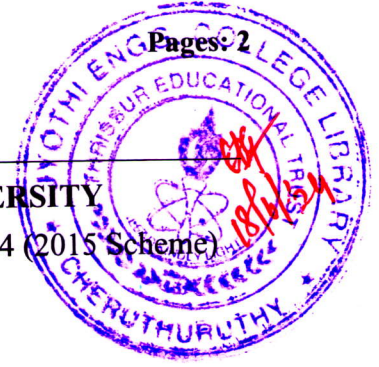Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree (S, FE) Examination May 2024 (2015 Scheme)

Course Code: MR409

Course Name: Micro Electro Mechanical Systems

Max. Marks: 100   Duration: 3 Hours

PART A
Answer all questions, each carries 5 marks.

		Marks
1	Write a short note on microsystem packaging.	(5)
2	What is etching? What are the different types?	(5)
3	Briefly explain about the standard clean room for micromachining.	(5)
4	Explain about micro milling.	(5)
5	Explain the concept of pressure sensor with neat diagram.	(5)
6	Discuss about microvalves.	(5)
7	Explain the application of MEMS in defence industry.	(5)
8	What is scaling? What is the need for scaling?	(5)

PART B
Answer any three full questions, each carries 10 marks.

9	a)	Explain CZ method for producing pure silica crystal with neat diagram.	(10)
10	a)	What is photolithography? What are the steps involved in photolithography? explain.	(10)
11	a)	Explain the working of Laser Beam Micromachining. Write its applications.	(10)
12		Write a short note about	(10)
		a) Micro milling	
		b) Micro drilling	
13	a)	Explain electrochemical machining with neat sketch.	(10)

PART C
Answer any two full questions, each carries 15 marks.

14	a)	Explain microgrippers and micromotors.	(10)
	b)	Illustrate acoustic wave sensor with proper explanation.	(5)

15 a) Describe the principle of   (15)
    a) Chemical sensor
    b) Optical sensor

16 a) Explain scaling in   (15)
    a) Geometry
    b) Electrostatic force

17 a) List and explain various applications of MEMS.   (15)

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