

CBCS SCHEME

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BMT502

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2026

Micro and Smart System Technology

Time: 3 hrs.

Max. Marks: 100



Notes: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks, L: Bloom's level, C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	Define Micro System. Discuss the need for miniaturization.	10	L1	CO1
	b.	Explain the operation of ADXL50 accelerometer with neat schematic sketch.	10	L2	CO1
OR					
Q.2	a.	Discuss the application of smart material and micro system in various fields.	10	L2	CO1
	b.	Explain the classification of integrated micro system.	10	L2	CO1
Module – 2					
Q.3	a.	Explain with neat sketch portable blood analyzer.	10	L2	CO2
	b.	Explain the operation of an piezo electric inkjet actuator with neat sketch.	10	L2	CO2
OR					
Q.4	a.	Explain the operation of magnetic micro relay with neat sketch.	10	L2	CO2
	b.	Explain the working of silicon capacitive accelerometer and discuss its applications.	10	L2	CO2
Module – 3					
Q.5	a.	Explain the thin film deposition techniques of chemical vapour deposition techniques.	10	L2	CO3
	b.	Explain the stages involved in etching process.	10	L2	CO3

OR

Q.6	a.	With a neat sketch, discuss the key process involved in photolithography.	10	L2	CO3
	b.	Discuss the application of polymers and ceramics as specialized materials for micro systems.	10	L2	CO3

Module – 4

Q.7	a.	Explain P-N junction diode along with diagram and V-I characteristics graph.	10	L2	CO4
	b.	With a neat output characteristics explain n-channel enhancement MOSFET and also list three modes of operation for MOSFET.	10	L2	CO4

OR

Q.8	a.	Discuss six examples of opamp based circuits with circuit diagram and application.	10	L2	CO4
	b.	With a neat circuit, explain CMOS circuits.	10	L2	CO4

Module – 5

Q.9	a.	Describe the block diagram of a PID controller.	10	L3	CO5
	b.	With a neat sketch explain digital control system.	10	L3	CO5

OR

Q.10	a.	Illustrate the performance parameters of a pressure sensor with relevant plots.	10	L3	CO5
	b.	Explain the case study of vibration in beams with neat sketch.	10	L3	CO5
