

CBCS SCHEME

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BMT654C

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

Mechatronics Engineering

Time: 3 hrs

Max. Marks: 100

*Note: 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 Mechatronics. Explain the scope of Mechatronics with examples.	10	L1	CO1
	b.	Describe the need of Mechatronics.	10	L2	CO1
OR					
Q.2	a.	Explain with a neat block diagram working of automatic washing machine.	10	L2	CO1
	b.	Explain the classification control system.	10	L2	CO1
Module – 2					
Q.3	a.	List the classification of transducers.	10	L1	CO2
	b.	Explain the difference between sensor and transducers.	10	L2	CO2
OR					
Q.4	a.	Explain LVDT with a neat sketch.	10	L2	CO2
	b.	With a neat sketch, explain inductive proximity sensor.	10	L2	CO2
Module – 3					
Q.5	a.	Define signal conditioning. Explain any 4 methods adopted for signal conditioning.	10	L1	CO3
	b.	Discuss the analog to digital conversion method in signal processing.	10	L4	CO3
OR					
Q.6	a.	With a block diagram explain successive approximation type ADC.	10	L2	CO3
	b.	Explain digital data acquisition system.	10	L2	CO3

Module – 4

Q.7	a.	Explain the types of relays.	10	L2	CO4
	b.	With a neat sketch brush type DC motor.	10	L2	CO4

OR

Q.8	a.	Sketch and explain basic structure of programmable logic controller.	10	L2	CO4
	b.	List and explain PLC programming language.	10	L2	CO4

Module – 5

Q.9	a.	Explain the stages in designing Mechatronics System.	10	L2	CO5
	b.	Explain the comparison between traditional and mechatronics design.	10	L2	CO5

OR

Q.10	a.	Explain design issues, system modeling and simulation issues in mechatronics system.	10	L2	CO5
	b.	Explain with a neat sketch various parts of pick and place robot.	10	L2	CO5
