CBCS SCHEME

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BME654C

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025
Introduction to Mechatronics

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.	Explain in detail, the operations involved in automatic washing machine.	10	L2	CO1
	b.	With a neat diagram, Explain LVDT and mention its applications.	10	L2	CO1
		OR			
Q.2	a.	Define control system, explain classification of transducer.	10	L2	CO2
	b.	Define sensor and transducers, write the classification of transducer.	10	L2	CO2
		Module – 2			
Q.3	a.	Define signal conditioning, explain Data Acquisition System (DAQS).	10	L2	CO3
	b.	Define stepper motor, explain different forms of stepper motor.	10	L2	CO3
		OR			
Q.4	a.	What is a filter? Explain types of filter with a neat diagram.	10	L2	CO3
	b.	Explain the types of Brush type D.C. motors, with field coils with neat sketch.	10	L2	CO3
		Module – 3			
Q.5	a.	Define Microprocessor. Explain with neat diagram, Architecture of 8085 microprocessor.	10	L2	CO3
	b.	Distinguish between RISC and CISC.	10	L2	CO3
		OR			
Q.6	a.	With a neat block diagram, explain microcontroller and mention features of 8051 microcontroller.	10	L2	CO3
	b.	Explain briefly the following forms of memory units: i) ROM ii) PROM iii) EPROM iv) EEPROM v) RAM	10	L2	CO3
		Module – 4			
Q.7	a.	Define PLC (Programmable Logic Controller), explain basic structure of PLC with a neat block diagram.	10	L2	CO5
	b.	Explain the control of two pneumatic pistons, with a neat sketch.	10	L2	CO5

		OR			
Q.8	**a.**	Briefly explain with a neat diagram of Ladder Programming in PLC.	**10**	**L2**	**CO5**
	b.	Explain the control of process tank, with a neat sketch.	**10**	**L2**	**CO5**
		Module – 5			
Q.9	**a.**	Explain friction guide ways and antifriction guide ways.	**10**	**L2**	**CO4**
	b.	Explain the different stages of mechatronics design process.	**10**	**L2**	**CO4**
		OR			
Q.10	**a.**	Explain the working of hydrodynamic bearing with neat sketch.	**10**	**L2**	**CO4**
	b.	Explain with neat sketch working of automatic car park barrier.	**10**	**L2**	**CO4**

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