CBCS SCHEME

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BMT515C

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Artificial Intelligence for 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.

			M	L	C
		Module – 1			
Q.1	a.	Explain the components of intelligence learning and communication.	10	L2	CO1
	b.	Illustrate expert system in artificial intelligence.	10	L3	CO1
		OR			
Q.2	a.	Explain artificial neural network with an analogy to biological neural network.	10	L2	CO1
	b.	Illustrate genetic algorithm based on Evolution Theory.	10	L3	CO1
		Module – 2			
Q.3	a.	Illustrate steering an automobile as a system of robot vision.	10	L3	CO2
	b.	Explain stereo vision and depth information.	10	L2	CO2
		OR			
Q.4	a.	Write a short note on image processing.	10	L3	CO2
	b.	Explain the two stages of robot vision.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain the different types of sensors used in robots.	10	L2	CO3
	b.	Explain the robotic perception.	10	L2	CO3
		OR			
Q.6	a.	Explain localization and mapping in robotics.	10	L2	CO3
	b.	Explain the factor influence the end effector design of robots.	10	L2	CO3
		Module – 4			
Q.7	a.	Illustrate AI in robotics how important to planning to move.	10	L3	CO4
	b.	Explain cell decomposition methods.	10	L2	CO4
		OR			
Q.8	a.	Discuss the different methods of skeletonization.	10	L3	CO4
	b.	Explain the work space configuration in robotics AI.	10	L2	CO4

		Module – 5			
Q.9	a.	Illustrate application domains of robotics which are implemented with AI.	10	L3	CO5
	b.	Explain potential field control and reactive control.	10	L2	CO5
		OR			
Q.10	a.	Explain pipeline architecture with diagram.	10	L2	CO5
	b.	Illustrate dynamics and controls in robotics.	10	L3	CO5

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