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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY
An Autonomous Institution Affiliated to Visvesvaraya Technological University (VTU) Belagavi

USN | | | | | | | | | | |

24ME46

Fourth Semester B.E. Degree Examination, May 2026
ROBOTICS AND AUTOMATION

TIME:3 hrs. Max.Marks:100

Note: 1. Answer **any FIVE** full questions, choosing **ONE** question from **each MODULE.**
2. M: Marks, L: Bloom's level,C: Course outcomes.
3. Assume missing data suitably.

		Module-1	M	L	C
Q.1	a	Define automation. Explain the different types of automation with a graph.	8	L2	CO1
	b	Discuss the safety in industrial automation.	6	L2	CO1
	c	Explain the various Asimov's laws of robotics.	6	L2	CO1
		OR			
Q.2	a	Discuss the different types of robotics.	8	L2	CO1
	b	Explain the basic devices in automated system.	6	L2	CO1
	c	Discuss the various generation of robots.	6	L2	CO1
		Module–2			
Q.3	a	With a neat diagram, explain the robot anatomy.	8	L2	CO2
	b	Discuss on end effect or of a robot.	6	L2	CO2
	c	Explain the control system used in robots.	6	L2	CO2
		OR			
Q.4	a	Discuss on different robot drive system.	8	L2	CO2
	b	Explain the different controllers used in robots.	6	L2	CO2
	c	Describe the precision, accuracy and work volume of a robot.	6	L2	CO2
		Module–3			
Q.5	a	With a neat diagram, explain mechanical grippers used in robot for different applications.	10	L2	CO3
	b	Explain the tactile sensor and proximity sensor used in robots.	10	L2	CO1
		OR			
Q.6	a	What do you mean by end effector of a robot? Explain different factor to be consider for grippers selection and its design.	10	L2	CO3
	b	With a neat diagram, explain the range sensor and uses of sensor in robots.	10	L2	CO1
		Module–4			
Q.7	a	Explain the following method of programming: i) Manual method ii) Manual lead through method	10	L2	CO3
	b	Discuss on branching, capabilities and limitations of lead-through method in robot programming.	10	L2	CO3

		OR			
Q.8	**a**	Explain the following method of programming: i) Online programming method ii) Offline programming method	**10**	**L2**	**CO3**
	b	Discuss on wait, signal and delay commands in robots programming.	**10**	**L2**	**CO3**
		Module–5			
Q.9	**a**	Explain the following applications of robot: i) Disaster response and recue ii) Aerospace and space exploration	**10**	**L2**	**CO4**
	b	Discuss on the following applications of robot: i) Medical and healthcare ii) Logistics and warehousing	**10**	**L2**	**CO4**
		OR			
Q.10	**a**	Illustrate the various application of robots in different fields.	**10**	**L2**	**CO4**
	b	Discuss the various merits and demerits across different application fields.	**10**	**L2**	**CO4**

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