[M19CAD1107]
I M. Tech I Semester (R19) Regular Examinations
INDUSTRIAL ROBOTICS
Department of Mechanical Engineering
MODEL QUESTION PAPER

TIME: 3Hrs.   **Max. Marks: 75 M**

Answer **ONE Question** from **EACH UNIT.**
All questions carry equal marks.
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			CO	KL	M
		UNIT-I			
1.	a).	Define the term industrial automation. Explain different types of industrial automation.	1	2	8
	b).	Classify robots based on control systems.	1	2	7
		OR			
2.	a).	Explain the different types of electrical drives used in robot actuation.	1	2	8
	b).	Compare pneumatics drive robots with stepper motor drive robots.	1	2	7
		UNIT-II			
3.	a).	What are closed from solutions to inverse kinematics problem?	2	2	8
	b).	Explain the concept of redundancy in the context of robots.	2	2	7
		OR			
4.	a).	Explain the robot arm dynamics in detail with neat sketches.	2	2	8
	b).	Explain the configuration of robot controller with a neat diagram.	2	2	7
		UNIT-III			
5.	a).	What is the function of gripper used in robots? What are the considerations to be made in the selection and design of grippers?	3	2	8
	b).	Discuss abt tactile array sensors.	3	2	7
		OR			
6.		Describe the machine vision technique used in robotics with a neat block diagram.	3	2	15
		UNIT-IV			
7.	a).	Explain the features of second generation robot programming languages.	4	2	8
	b).	Explain the functions of WAIT SIGNAL and DELAY commands in robot programming.	4	2	7
		OR			
8.		Explain the varis programming methods used in robotics with example and features of each	4	2	14
		UNIT-V			
9.		Explain abt the functions performed by the work cell controller in detail.	5	2	15

		OR			
10.	a).	What are the desirable features of robot for successful machine tool load/unload applications?	5	2	8
	b).	Write a short note on describing factory future. What will be the role of humans in this factory?	5	2	7

CO-CRSE TCOME   **KL-KNOWLEDGE LEVEL**   **M-MARKS**