PVP 19

Code: 19EE4801C

IV B.Tech - II Semester – Regular Examinations – MAY 2023

ROBOTICS

(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1. a)	Show the necessity of robots in industry.	L3	CO1
1. b)	Categorize the end effectors used in robotics.	L4	CO2
1. c)	What do you understand the term "Define Robot Cell" and its design Principles.	L3	CO3
1. d)	Illustrate the Hardware for joint controllers.	L3	CO4
1. e)	Prepare a list of robot applications.	L3	CO5

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Sketch and explain the four basic robot configurations classified according to the coordinate system.	L3	CO1	6 M
	b)	Show the advantages of robots in agriculture field.	L3	CO1	6 M

		OR			
3	a)	Show the classification of robots by control system.	L3	CO1	6 M
	b)	Define the terms 'Robot' and 'Robotics'. Illustrate the role of robots in engineering industry.	L3	CO1	6 M
		UNIT-II			
4	a)	Identify the types of sensors used in robotics. Explain its uses.	L3	CO2	6 M
	b)	Illustrate about vacuum Grippers along with their advantages and disadvantages.	L3	CO2	6 M
		OR			
5	a)	Illustrate in detail about Magnetic gripper with neat sketch.	L3	CO2	6 M
	b)	Describe in detail factors considered while selection and design of grippers.	L3	CO2	6 M
		UNIT-III			
6	a)	Simplify the design considerations for Robot cell. Explain.	L4	CO3	6 M
	b)	Identify the role of Robot cell layouts and its classification.	L3	CO3	6 M
		OR			
7	a)	Analyze the importance of Safety in robotics.	L4	CO3	6 M
	b)	Illustrate the Machine interference in Robot control division.	L3	CO3	6 M

UNIT-IV					
8	a)	Explain the considerations for Robot Control hardware.	L3	CO4	6 M
	b)	Demonstrate the Robot architecture and role of it in Robot design.	L3	CO4	6 M
OR					
9	a)	Analyze about lead through programming methods in robot.	L4	CO4	6 M
	b)	Illustrate the Capabilities of lead through methods in robotics. Explain.	L3	CO4	6 M
UNIT-V					
10	a)	Illustrate the Characteristics of future robots in various operations.	L3	CO5	6 M
	b)	Summarize the role of robot in social productivity (Labor).	L3	CO5	6 M
OR					
11	a)	Illustrate the Future manufacturing applications for robots.	L3	CO5	6 M
	b)	Illustrate the importance of Robots in service industry.	L3	CO5	6 M