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Question Paper Code: 95P18

M.E.DEGREE EXAMINATION, MAY 2024

Elective

CAD / CAM

19PCD518 – INDUSTRIAL ROBOTICS AND EXPERT SYSTEMS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Describe briefly the kinematics and dynamics of a robot. CO1- U (20)
Or
(b) Classify the robots according to the coordinates of motion. With a sketch and example, explain the features of each type. CO1- U (20)
2. (a) (i) What are the different actuators used in the robots? Describe them briefly. CO2- U (10)
(ii) Explain the working of a stepper motor. CO2- U (10)
Or
(b) Describe the robot gripper to take measurements of outer and inner dimensions of objects with the aid of pneumatic gauging. CO2-U (20)
3. (a) What is pattern recognition? Briefly describe a sensing device to generate the contour picture of a work piece. CO3-U (20)
Or
(b) (i) Describe the methods of template matching. CO3-U (10)
(ii) Describe a sensing device to generate the contour pictures of a workshop. CO3-U (10)
4. (a) What are the possible robot applications in manufacturing industries? Classify such robots from the viewpoints of drives and controls. CO4- U (20)

Or

- (b) Explain the robot work cell arrangements with simple sketch. CO4- U (20)
5. (a) Explain the various types of motion interpolations CO5- U (20)
- Or
- (b) Elaborate AI technique, with suitable sketches. CO5- U (20)
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