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**Question Paper Code: 95P18**

M.E.DEGREE EXAMINATION, MAY 2022

Elective

CAD / CAM

15PCD518 – 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) Explain forward transformation and reverse transformation of robot manipulator with 3 degrees of freedom. CO1- U (20)  
Or  
(b) Explain the main Robot anatomy with neat sketch. 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) With a neat sketch explain the working of any two robot actuator. CO2-U (20)
3. (a) Explain the various techniques in Image Processing and Analysis. 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) With examples, explain the industrial applications of robots. CO4- U (20)  
Or  
(b) Explain the robot work cell arrangements with simple sketch. CO4- U (20)

5. (a) List the commands used in VAL II programming and describe its functions. CO5- U (20)

Or

(b) Write extensively on AI Problem reduction and solution. CO5- U (20)

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