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**Question Paper Code: 53P15**

M.E.DEGREE EXAMINATION, NOV 2017

Elective

CAD / CAM

15PCD518 – INDUSTRIAL ROBOTICS AND EXPERT SYSTEMS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) Explain forward transformation and reverse transformation of robot manipulator with 2 degrees of freedom. (20)

Or

- (b) Briefly explain in the following terms: (i) Payload (ii) compliance (iii) Precision (iv) Accuracy. (20)

2. (a) Describe the robot gripper to take measurements of outer and inner dimensions of objects with the aid of pneumatic gauging. (20)

Or

- (b) Write note on Gripper selection and design. (20)

3. (a) What is pattern recognition? Briefly describe a sensing device to generate the contour picture of a work piece? (20)

Or

- (b) With neat block diagram explain machine vision system in robotics. (20)

4. (a) Briefly explain the various steps involved for implementing the robot in industries. (20)

Or

(b) State five safety hazards that can be identified within industrial robot installations. (20)

5. (a) Write down the capabilities and limitations of Lead through methods. (20)

Or

(b) Explain AI and KBES in detail. What are the applications of AI and KBES? (20)

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