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**Question Paper Code: 55P18**

M.E.DEGREE EXAMINATION, NOV 2018

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) 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) Name different types of end effectors. Compare and contrast the end effectors from the view point of their functions. CO2- Ana (20)

Or

(b) Discuss the applications and working principle of the following sensors . CO2- Ana (20)

(i) Position sensor,

(ii) Velocity sensor.

3. (a) With suitable applications brief explain the following: CO3-U (20)

(i) Optical encoders

(ii) Laser range meters

(iii) Capacitive type touch sensors

(iv) Ultrasonic proximity sensors

Or

- (b) Compare various lighting techniques used in machine vision and image processing analysis. CO3-U (20)
4. (a) Explain the workplace design consideration for safety of robots in detail. CO4- U (20)
- Or
- (b) Explain in detail about robot cycle time analysis. CO4- U (20)
5. (a) Explain the teach pendant for Robot system. CO5- U (20)
- Or
- (b) Elaborate AI technique, with suitable sketches. CO5- U (20)
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