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**Question Paper Code: 39075**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Elective

Mechanical Engineering

01UME924 - ROBOTICS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What are the benefits of industrial robots?
2. Define the term work envelope.
3. List the kind of sensors used in robotics.
4. Give some examples of Robot End Effectors.
5. Identify the parameters of a link and joints for kinematic modeling.
6. What is segmentation?
7. Name the robot programming methods.
8. Define degrees of freedom.
9. Define EUAC method.
10. Define grippers.

PART - B (5 x 16 = 80 Marks)

11. (a) Give all possible classification of robots.

(16)

Or

- (b) Explain the various parts of a robot with neat sketch. (16)
12. (a) Classify robot based on drive technology and list its advantages and disadvantages. (16)
- Or
- (b) Explain various types of Gripper mechanisms. (16)
13. (a) Give situation where robot will require noncontact sensors. Identify suitable noncontact sensors for these applications and explain their working. (16)
- Or
- (b) Explain the Machine vision systems of Robot. (16)
14. (a) Discover the type of joints used in robots, its degree of freedom and symbolic representation. (16)
- Or
- (b) With an example differentiate forward and inverse kinematics. (16)
15. (a) Briefly explain the economic analysis of Robots in detail. (16)
- Or
- (b) Briefly explain AGV and RGV types of robots in detail. (16)
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