

Printed Pages : 2



EOE084

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 199854

Roll No.

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B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15
AUTOMATION & ROBOTICS

Time : 3 Hours]

[Total Marks : 100

Note : Answer all five questions.
 (Choice and marks are given below)

- 1 Attempt any two parts of the following : **2×10=20**
- What are the various elements of robots ? Describe the Drive system.
 - What do you mean about dynamics of mechanical systems ?
 - What are the various systems of Robot coordinates ?
- 2 Attempt any two parts of the following : **2×10=20**
- What are the application of robots in assembly operations ?
 - Describe about collision free motion planning.
 - What are the various levels of robot programming ?

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[Contd...

- 3 Attempt any two parts of the following : $2 \times 10 = 20$
- (a) Define the following :
 - (i) Computed torque control
 - (ii) Adaptive control.
 - (b) What do you understand by robot coordinate system representation ?
 - (c) What are kinematic chains ? Describe the dynamics of kinematic chains.
- 4 Attempt any two parts of the following : $2 \times 10 = 20$
- (a) What is homogeneous transformation ?
 - (b) Describe about language based programming.
 - (c) Describe about parallel actuated and closed loop manipulators.
- 5 Write short notes on any four of the following : $4 \times 5 = 20$
- (a) Manipulator kinematics
 - (b) Application of robots in machining
 - (c) Advanced techniques of kinematics
 - (d) Geometric classification
 - (e) Robot vision
 - (f) Computed torque control.
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