Code: 9A03702

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2014

AUTOMATION AND ROBOTICS
(Common to ME and MCT)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1   Sketch the following robots indicating their joints and degrees of freedom:
  (a)   Polar robot.
  (b)   Cylindrical robot.
  c) (Cartesian robot.
  (d)   SCARA robot.

2   List various high speed automatic insertion devices and explain.

3   (a)   What is the role of robots in loading and unloading?
  (b)   Explain about role of robots in spot welding.

4   Write short notes on following:
  (a)   Grippers.
  (b)   Jacobians.

5   (a)   Discuss about flow line with/without buffer storage.
  (b)   Explain about part transfer methods.

6   What is assembly line balancing, discuss in detail?

7   (a)   Explain the end effector commands of robot languages.
  (b)   Discuss the robot program synthesis.

8   Write about any two of the following:
  (a)   Velocity sensors.
  b) (Tectile sensors.
  (c)   Proximity sensors.

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