

R09**Code: 9A13701**

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

ROBOTICS & AUTOMATION

(Common to E.Con.E & EIE)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Discuss the Cylindrical, Gantry, SCARA and articulated configurations of industrial robots with schematic diagrams.
- 2 With schematic diagrams, explain the pneumatic and electrical drives used in robots.
- 3 Discuss the design considerations of a robotic manipulator.
- 4 Explain the various types of grippers with neat illustrations.
- 5 Form an Euler equation for a three degree of freedom for robot.
- 6 Explain the method of solving a simple forward kinematic problem.
- 7 Discuss an algorithm for trajectory planning with avoiding the obstacles.
- 8 Design a robotic work cell considering a robot, a CNC turning center, loading and unloading stations.
