

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

ROBOTICS & AUTOMATION

(Common to E.Con.E & EIE)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 With schematic diagram, explain the SCARA robot and indicate the elements and work volume.
- 2 Describe various sensors used in robotic applications with suitable examples and illustrations.
- 3 Explain the working principle of pneumatic robotic arm.
- 4 With schematic diagrams, explain various types of robotic grippers.
- 5 Write the method of Lagrange-Euler formulation for a two-link robotic manipulator.
- 6 Applying the forward kinematic principles, describe the method of calculating the TCP point for a robotic arm.
- 7 What is meant by trajectory planning? Explain with neat illustrations.
- 8 Describe a case-study of robotic cell by considering a turning machine, robot and loading & unloading table.
