

Code: 9A03702

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

AUTOMATION & ROBOTICS

(Common to ME & MCT)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 With schematic diagrams, explain the various hardware components in an automated system.
- 2 Explain the various types of part transfer methods with schematic diagrams.
- 3 What is the need for assembly line balancing? Explain any one of the methods of assembly line balancing, with suitable example.
- 4 Describe the components and configuration of a 5-DOF articulated robot. Explain the different types of joints used in industrial robots.
- 5 Explain the homogeneous transformation for a two-link robot and derive the transformation matrix.
- 6 Discuss the various features in a robotic programming language.
- 7 With neat diagrams, explain the hydraulic and pneumatic actuators.
- 8 With schematic diagram, explain the robotic applications in welding industry.
