

Seat No.	
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B.E. (Mechanical Engineering) (Semester - VIII)

Examination, May - 2017

INDUSTRIAL AUTOMATION AND ROBOTICS (Elective - IV)

Sub. Code : 49546

Day and Date : Friday, 05 - 05 - 2017

Total Marks : 100

Time : 02.00 p.m. to 5.00 p.m.

- Instructions :**
- 1) Answer any three questions from each section.
 - 2) Figures to the right indicate full marks.
 - 3) Draw schematic diagrams wherever necessary.

SECTION-I

- Q1) a)** Explain basic strategies for Automation & Production systems. [8]
- b) Differentiate between process Industries & Discrete Manufacturing Industries. [8]
- Q2) a)** What are the different system configurations of automated production lines. [8]
- b) Give common reasons for downtime on an automated production line & explain each one briefly. [8]
- Q3) a)** Explain various vibratory & non- vibratory devices for feeding & orientation in parts delivery at workstations. [8]
- b) Explain the analysis of transfer lines without storage buffers. [8]
- Q4) Write short notes (Any Three)** [18]
- a) Instantaneous control.
 - b) Economical & social aspects of automation.
 - c) Advanced automation functions.
 - d) Differentiate between Fixed & Flexible programmable automation.

P.T.O.

SECTION-II

- Q5)** a) What are the common Robot Configurations? [8]
b) What are the dynamic properties of robot stability? [8]
- Q6)** a) How the selection of gripper is done & what are the design considerations for gripper? [8]
b) Explain Lead through methods in detail. [8]
- Q7)** a) What are the common Robot configurations? [8]
b) What are the dynamic properties of robot stability? [8]
- Q8)** Write short notes (any three) [18]
a) SCARA
b) Control resolution
c) Force & Torque sensors
d) Active & passive compliance
e) Robot applications.

