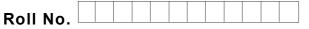
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# B.Tech. Ind. Engg. & Mgt. (Spl. in TQM) (Sem.-5) INDUSTRIAL AUTOMATION AND ROBOTICS Subject Code : IEM-501

M.Code: 70992

Time: 3 Hrs.

Max. Marks : 40

## **INSTRUCTIONS TO CANDIDATES :**

- 1. Attempt All EIGHT questions from SECTION-A carrying TWO marks each.
- 2. Attempt any SIX questions out of EIGHT from SECTION-B carrying FOUR marks each.

### **SECTION-A**

### 1. Answer briefly :

- a) Define Automation.
- b) What do you mean by pneumatic logic circuits?
- c) What do you mean by Conda effect?
- d) Describe classification of robotics based on geometry and devices.
- e) What do you mean by PLC?
- f) Write various industrial applications of robots.
- g) Describe Manipulators.
- h) What do you understand by MCU? What are its functions?



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### **SECTION-B**

- 2. Explain Economic aspects in robot applications.
- 3. Classify robots and give their applications.
- 4. Write a detailed note on pneumatic and hydraulic actuators and valves.
- 5. Explain in detail :
  - a) Work cell organization in robotic environment.
  - b) Work Cell Design and Control
- 6. Illustrate structure of end effectors in detail.
- 7. Explain the following in detail with respect to Robot Technology :
  - a) Precision of movement
  - itstRanker.com b) Configuration of a robot controller
- 8. Describe in detail Intelligent Robots.
- 9. Explain in detail :
  - a) Safety in robots
  - b) Issues in implementation of robotics in industry.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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