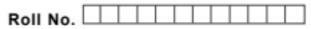


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Total No. of Pages : 02

Total No. of Questions : 09

## B.Tech.(Automation & Robotics) (2012 & Onwards) (Sem.-4) INDUSTRIAL AUTOMATION AND ROBOTICS Subject Code : PE-408 M.Code : 63018

### Time : 3 Hrs.

Max. Marks : 60

#### **INSTRUCTION TO CANDIDATES :**

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

## SECTION-A

#### Q1. Answer briefly :

- a) Explain the basic concept of industrial Automation.
- b) What is Robot work envelope?
- c) Explain the importance of transfer lines in industries.
- d) Explain the concept Robotic Machine Vision.
- e) Give the difference between Hydraulic and pneumatic valves.
- f) What is the function of microprocessors in robotics?
- g) What are fluidic elements?
- h) What are end-effectors?
- i) Give the classifications of robots based on path movement.
- j) What are feeders?

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#### SECTION-B

- Q2 Discuss the concept of Teach pendent box in robotics.
- O3 Discuss the basic architecture of PLC.
- 04 Give various Installation and Mounting tips for hydraulic cylinders.
- What is coanda effect and give its industrial applications? Q5
- 06 Explain with suitable diagram Centrifugal Hooper Feeder.

# SECTION-C

- Discuss using suitable example designing of a pneumatic logic circuit for a given time O7 displacement diagram.
- Explain the working of Simple Servo system with mechanical feedback with suitable Q8 a applications of diagram.
- Discuss in details the industrial applications of robots in spray painting operations. 09

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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