Roll No. | | | | | | | | | | | | |

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 :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **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?

SECTION-B

Q2 Discuss the concept of Teach pendent box in robotics.

Q3 Discuss the basic architecture of PLC.

Q4 Give various Installation and Mounting tips for hydraulic cylinders.

Q5 What is coanda effect and give its industrial applications?

Q6 Explain with suitable diagram Centrifugal Hooper Feeder.

SECTION-C

Q7 Discuss using suitable example designing of a pneumatic logic circuit for a given time displacement diagram.

Q8 Explain the working of Simple Servo system with mechanical feedback with suitable diagram.

Q9 Discuss in details the industrial applications of robots in spray painting operations.

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.