Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(ME) (2011 Onwards) (Sem.–5)
INDUSTRIAL AUTOMATION AND ROBOTICS
Subject Code : BTME-504
M.Code : 70605

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 has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION - A

1. **Answer briefly :**

    a. What is mechanization?

    b. What do you mean programmable automation?

    c. What is pneumatic motor?

    d. What is non return valve?

    e. What is proximity sensor?

    f. What is tandem cylinder?

    g. Draw the symbol of 5/3 solenoid operated spring return DC valve.

    h. Give the symbol of NOR gate with truth table.

    i. What is Roll in robotics?

    j. Define Robot.

SECTION-B

2.   What is Ladder Logic Diagram? Explain.

3.   What is time delay valve? How it is used in pneumatic circuits?

4.   What are the applications of transfer devices?

5.   What are the different types of end effectors used in robots?

6.   What do you mean by low cost Automation? How it is useful for industry?

SECTION-C

7.   What is work volume? Explain the work volume and working of two robotic configurations with neat sketch.

8.   What are the different types of cylinder mounting? Explain each with neat sketch.

9.   Write short note on :

      a. Socio economic impacts of automation.

      b. Robot programing.

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.