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

Total No. of Questions : 18

B.Tech. (AE)   (Sem.–7)
AUTOMATION AND MECHATRONICS
Subject Code : BTAE/DE-713
M.Code : 71823

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS 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

Answer briefly :

1. Define PLC.

2. What do you understand by shift registers?

3. Brief about DCV.

4. Write short note on DAC.

5. Name at-least four applications of end-effector.

6. Write about robotics vision.

7. What is difference between traditional and mechatronic design?

8. What is application of Stepper motors in robotics?

9. Define mechatronics.

10. Draw the symbol of shuttle valve.

SECTION-B

11. How many pulses are required for the motor to rotate through four complete revolutions, if stepper motor has 10° step of angle?

12. What is selection criteria of PLC?

13. Explain in detail about the working of Rotary actuators.

14. Discuss about measurement and control system.

15. In your views what is the scope of automation in Indian industry?

SECTION-C

16. Discuss in detail about each classification of robots.

17. Write note on :

    a) Double acting cylinders.

    b) Industrial application of robots.

18. Describe the role of electrical actuation system in automation.

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.