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

Total No. of Questions : 09

B.Tech. (AE) (2011 Onwards E-II)   (Sem.–7,8)
AUTOMATION AND MECHANTRONICS
Subject Code : BTAE/DE-713
Paper ID : [A2938]

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

1. Answer briefly :

   a. What is hard automation?

   b. What are the types of systems?

   c. What is time delay valve?

   d. What do you mean by robot work volume?

   e. State the function of counter.

   f. Define servo motor.

   g. What is meant by latching in PLC's?

   h. Give the symbol of Twin pressure valve.

   i. What do you understand by solid state switches?

   j. What is ADC?

SECTION-B

2. What is the difference between measurement and control system?

3. Explain the selection of a PLC for specific application.

4. What is cylinder cushioning? Explain with the help of neat diagram.

5. What are the social economic aspects of automation?

6. Explain the working of DC motor with neat sketch.

SECTION-C

7. Classify robots based on their geometry. Explain the application pertaining to each class.

8. Discuss the various types of Directional control valves used in pneumatic systems with neat sketch.

9. Write short notes on :

   a) Material handling

   b) Machine vision