

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (E-I 2011 Onwards) (Sem.-6)

**MECHATRONICS**

Subject Code : DE/ME-3.8

Paper ID : [A2429]

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**

**1. Answer briefly :**

- a. What are the constituent elements of measurement systems?
- b. Define resolution.
- c. What is proximity sensor?
- d. Define hysteresis error.
- e. Define Op Amp.
- f. What is a servo motor?
- g. What is transducer?
- h. Draw the symbol of Twin pressure valve.
- i. What do you understand by solid state switches?
- j. What is ADC?

**SECTION-B**

2. Differentiate between measurement and control system.
3. What is procedure for selection of transducers?
4. Differentiate between hydraulics and pneumatics.
5. Explain the functioning of differential operational amplifier.
6. Explain the control methodology and functioning of stepper motor.

**SECTION-C**

7. What is actuation system? Discuss the linear actuators with the aid of neat sketch.
8. Discuss the any four displacement sensors with their diagrams.
9. Write short note on :
  - a. Pulse-modulation
  - b. Light sensors