Code No. 2406 / N

FACULTY OF INFORMATICS

B.E. 3/4 (IT) II-Semester (Main) Examination, May 2013

Subject : Digital Instrumentation and Control
(Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. What is a sensor? (2)
2. The input to a 10-bit ADC is 2V reference is 5 volts. What is the binary output. (3)
3. Give the basic principle behind RTD. (3)
4. What is a photo detector? (2)
5. Distinguish between photodiode and light emitting diode. (3)
6. What is seeback effect? Where it will be used? (2)
7. What is discrete state process? What is a discrete state process control system? (3)
8. List the controller modes. (2)
9. What is the function of the controller? (2)
10. Define process lag. (3)

PART – B (5x10=50 Marks)

11. Explain the operation of op-amp signal conditioning circuit. (10)

12. (a) Explain about pressure sensors. (5)
    (b) Explain the operation of an LVDT. (5)

13. (a) Explain the principle of operation of any one actuator. (5)
    (b) Distinguish between narrow band and wide band pyrometers. (5)

14. (a) Explain about the PLC operation. (5)
    (b) Explain about the ladder diagram elements briefly. (5)

15. (a) Explain about different composite controller modes. (5)
    (b) With a suitable diagram explain the implementation using operational amplifier. (5)

16. (a) Discuss different design considerations in Analog controllers. (5)
    (b) Explain the operation of 2 position control with an example. (5)

17. Write short notes on the following:
    (a) Bridge circuits (3)
    (b) Strain guage (3)
    (c) Use of ladder diagram in elevator control (4)

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