EE

C 46684 (Pages : 2) Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
JUNE 2008

EE 04 803—INSTRUMENTATION SYSTEMS

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *the questions.*

1. Explain the Hall effect of the transducer.
2. Compare the thermistor and themrocouple and also list the advantages and disadvantages of thermistor.
3. Explain frequency measurement system.
4. Discuss the method of transmission.
5. Outline the operation of magnetic tape recorder.
6. Explain the error measurement of the system.
7. Enumerate the different methods of the ladder circuit.
8. Calculate the time constant of a first order mercury in glass thermometer inside diameter of the bulb 4 mm, assuming the bulb to be spherical. (density of the mercury is 13600 kg/m^3).

(8 × 5 = 40 marks)

Part B

9. Explain the operation of a pressure transducer employing each of the following principles :
   (a) Resistive transducer.
   (b) Inductive transducer.
   (c) Capacitive transducer.

(15 marks)

Or

10. Briefly explain the thermocouple with their application, advantages and disadvantages.

(15 marks)

11. Describe the operation of Kelvin's bridge. What is criteria for balance of a Kelvin's bridge ? What is their uses ?

(15 marks)

Or

12. What is the data transmission ? Describe the data transmission system and also list the advantages and disadvantages.

(15 marks)

Turn over

13. Explain the principles of the following :—

(a) Potentiometric recorder.

(b) Bridge type recorder.

(c) Linear servometer recorder. (15 marks)

Or

14. Explain the operation of any *two* display devices. (15 marks)

15. Explain the first order system with their step impulse ramp response. (15 marks)

Or

16. Explain the time and frequency response of the dead time element. (15 marks)

[4 × 15 = 60 mark