

C 44778

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Name:
Reg. No.



**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
(SUPPLEMENTARY) EXAMINATION, JUNE 2013**

EE 04 803—INSTRUMENTATION SYSTEMS

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 5 marks.*

1. How can transducers be classified ?
2. What is loading effect ? How does it affect the transducer ?
3. Explain AC bridge with a push-pull transducer.
4. Explain briefly the digital method of phase measurement.
5. Write short notes on galvanometric recorders.
6. Write a short note on combination of variances.
7. Write a short note on the dynamic characteristics of measuring systems.
8. What is the procedure for developing transfer functions ?

(8 × 5 = 40 marks)

Part B

*Answer all questions.
Each question carries 15 marks.*

9. Explain in detail the characteristics to be considered while choosing a transducer.

(15 marks)

Or

10. (a) Explain the features of thermistor that makes it a good temperature transducer.

(8 marks)

- (b) A thermistor has a resistance of 3980 Ω at the ice point (0° C) and 794 Ω at 50° C. If the

resistance temperature relationship is given by $R_T = \alpha R_0 e^{\left(\frac{b}{T}\right)}$ where α and b are constants. If the temperature to be measured vary from 20°C to 100°C, what will be the range of resistance to be measured ?

(7 marks)

Turn over

11. Explain the differential amplifier and its use in signal conditioning. (15 marks)

Or

12. Explain with the help of neat diagrams digital methods for measuring time period and frequency. (15 marks)

13. Describe the working of servo recorders with neat diagram. (15 marks)

Or

14. What are the various types of errors in measurements? (15 marks)

15. Explain the multiplexing methods in use in an analog data acquisition system. (15 marks)

Or

16. Explain the frequency response of the second order system. (15 marks)

[4 × 15 = 60 marks]