Reg. No. : | | | | | | | | | | | | |

Question Paper Code : Q 2227

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009

Sixth Semester

(Regulation 2004)

Electrical and Electronics Engineering

EI 1361 — MEASUREMENTS AND INSTRUMENTATION

(Common to B.E. (Part-Time) Fifth Semester Regulation 2005)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Differentiate Resolution from Threshold.

2. Define Static error. Classify the types of static error.

3. Distinguish between an ammeter and a voltmeter.

4. Mention the adjustments required for an energymeter to read accurately with minimum possible errors.

5. Mention any four types of A.C bridges.

6. What are the main causes of earth loop current?

7. What are the main parts of the Cathode Ray Tube?

8. Mention the methods used for magnetic tape recording used for instrumentation purposes.

9. What is a Transducer and an Inverse Transducer? Give an example for each.

10. Mention the performance parameters of Digital to Analog Converter.

PART B — ($5 \times 16 = 80$ marks)

11. (a) Define and explain the static characteristics of an instrument.

Or

(b) (i) Classify and explain the different types of standards of measurements. (8)

(ii) Explain about the basic elements of a generalized measurement system with a neat diagram. (8)

12. (a) Describe the constructional details and working of the electrodynamometer type wattmeter and also derive the torque equation and state the advantages and disadvantages of electrodynamometer type wattmeter.

Or

(b) Explain in detail mechanical resonance type frequency meter and electrical resonance type frequency meter.

13. (a) Explain in detail the working of the following bridges and derive their balance equation.

(i) Wheatstone's bridge.

(ii) Maxwell's bridge. (8 + 8)

Or

(b) Write a short note on techniques used to reduce the ground loop interference signals.

14. (a) Describe the principle of operation of LED and LCD display devices.

Or

(b) Explain various types of printers in detail giving all the important aspects of them.

15. (a) What are the selection criteria for a transducer? Write a note on Inductive transducer and Piezoelectric transducer.

Or

(b) With neat diagrams, explain any two types of analog to digital converters and any one type of digital to analog converter.

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