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Question Paper Code: 31345

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fourth Semester

Electrical and Electronics Engineering

01UEE405 - ELECTRICAL MEASUREMENTS AND INSTRUMENTATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the functional elements of an instrument?
2. Define static error and reproducibility.
3. State the Principle of digital voltmeter.
4. Define burden of an Instrument transformer.
5. Write the two conditions to be satisfied to make an AC bridge balance.
6. What is meant by transformer ratio bridge?
7. Compare line printer and dot matrix printer.
8. What are the functions of data logger?
9. Why is an A/D converter usually considered as an encoder?
10. What are optical detectors?

PART - B (5 x 16 = 80 Marks)

11. (a) Describe the static and dynamic characteristics of measuring system. (16)

Or

- (b) Discuss the different types of standards of measurement. (16)

12. (a) Explain the function of three phase wattmeter and energy meter. (16)

Or

- (b) Explain the operating principle of instrument transformer. (16)
13. (a) Explain voltage sensitive self balancing bridge and derive the bridge sensitivity of voltage sensitive bridge with fundamental. (16)

Or

- (b) Describe about the multiple earth and earthloops. (16)
14. (a) Explain the basic elements of a magnetic tape encoder. (16)

Or

- (b) Explain the block diagram of general purpose oscilloscope and also describe about observation of waveform on CRO. (16)
15. (a) Explain the basic operation of A/D converter utilizing D/A converter. (16)

Or

- (b) Explain the principle of operation of piezo electric transducer. (16)
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