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Question Paper Code: 34035

B.E. / B.Tech. DEGREE EXAMINATION, NOV 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. Define calibration.
2. Define static error and reproducibility.
3. State the Principle of digital voltmeter.
4. Define burden of an Instrument transformer.
5. What is meant by Transformer Ratio Bridge?
6. What is meant by transformer ratio bridge?
7. List the sources of electrostatic interference.
8. What are the functions of data logger?
9. Differentiate sensor from transducer.
10. What are optical detectors?

PART - B (5 x 16 = 80 Marks)

11. (a) What are the basic blocks of a generalized instrumentation system? Draw the various blocks and explain their functions. (16)

Or

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

12. (a) With a neat diagram, explain the construction, working principle of single phase Wattmeter. What is the importance of deflection torque in these instruments. (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) With fundamentals distinguish between DC and AC potentiometers and give any two specific applications for each. (16)

14. (a) Describe the direct and frequency modulation magnetic tape recording types. Give its merits and demerits. (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 R-2R ladder type D/A converter. (16)
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