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Question Paper Code: 34305

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

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 the terms precision and sensitivity.
2. Give the international standards of instruments.
3. Why the ordinary watt meters are not suitable for low power factor circuits?
4. Give the comparison between analog and digital Phase meter.
5. Define co- ordinate type AC potentiometer? Give its expression.
6. What are the sources of electromagnetic interference?
7. What is meant by drop out?
8. What are the functions of data logger?
9. Brief the need of sample and hold circuit in analog to digital converter.
10. What are optical detectors?

PART - B (5 x 16 = 80 Marks)

11. (a) Describe all the elements of a generalized measurement system with an example of Bourdon tube pressure gauge. (16)

Or

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

12. (a) Describe the construction and working principle of single phase induction type energy meter. Write a short note on any two adjustments required in energy meters. (16)

Or

- (b) Explain the operating principle of instrument transformer. (16)

13. (a) (i) Explain Kelvin's double bridge and derive the condition for balance. (8)
(ii) Explain in detail about self balancing bridges. (8)

Or

- (b) With fundamentals distinguish between DC and AC potentiometers and give any two specific applications for each. (16)

14. (a) Explain the basic elements of a magnetic tape encoder. (16)

Or

- (b) Write short notes on

(i) Dynamic scattering type liquid crystal display (8)

(ii) Dot matrix display (8)

15. (a) (i) Briefly explain about the Dual slope ADC converter. (8)
(ii) Explain the working of R-2R ladder type DAC. (8)

Or

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