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Question Paper Code: 33505

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Third Semester

Electronics and Instrumentation Engineering

01UEI305 - ELECTRICAL MEASUREMENTS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Differentiate Moving coil and Moving Iron meters.
2. Explain the terms resolution and sensitivity.
3. Write the methods for calibrating the wattmeter.
4. What is meant creeping in energy meter?
5. What is the use of a potentiometer?
6. List the various type of errors in CT and PT.
7. Write the limitations of Wheatstone's bridge.
8. What is ground fault?
9. Write the sources and detectors used in AC Bridge.
10. List the errors in AC bridge methods.

PART - B (5 x 16 = 80 Marks)

11. (a) Illustrate the constructional details and principle of operation of moving coil and moving iron instruments. (16)

Or

- (b) Illustrate with a neat diagram the principle of operation, construction and working of PMMC instrument. (16)
12. (a) Explain in detail about sources of errors in Electrodynamometer type wattmeter and also explain the various compensation techniques used. (16)

Or

- (b) Illustrate the construction and principle of operation of single phase induction type energy meter. (16)
13. (a) Explain in detail about the laboratory grade DC potentiometer. (16)

Or

- (b) Explain the operating principle of current transformer with a neat diagram. Mention the various causes of error and state the methods of reducing the errors. (16)
14. (a) Sketch the circuit of Kelvin double bridge, explain its operation and derive the equation for the unknown resistance. (16)

Or

- (b) Explain any two types of earth resistance measurement with neat diagram. (16)
15. (a) Sketch the circuit diagram of a Maxwell inductance bridge. Derive the equations for resistive and inductive components of the measured inductor. (16)

Or

- (b) How is vibration galvanometer different from ballistic galvanometer? Explain the operation of vibration galvanometer with a neat diagram. (16)
