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Question Paper Code : 21418

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Third Semester

Electronics and Instrumentation Engineering

EI 2202/EI 34/EI 1201/10133 EI 306/080300004 – ELECTRICAL
MEASUREMENTS

(Common to Instrumentation and Control Engineering)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How can the range of instrument be extended in PMMC instruments?
2. Define Calibration.
3. Define Phantom loading.
4. Define creeping.
5. Give the Classification of AC potentiometers.
6. Define ratio error.
7. Define megger.
8. When is the Wheatstone bridge balanced?
9. Which types of detector is used in ac bridges?
10. What is the use of Campbell Bridge?

PART B — (5 × 16 = 80 marks)

11. (a) Briefly explain the construction and working principles of PMMC instruments.

Or

- (b) With a neat diagram explain the principle and working of dynamometer type instruments also mention its advantages.

12. (a) Briefly explain the working principle of electro-dynamometer type wattmeter with a neat sketch and necessary equation.

Or

- (b) Explain the step by step procedure for calibrating LPF wattmeter by Phantom Loading.

13. (a) Explain the current and potential transformer with equivalent and vector diagram.

Or

- (b) Write short notes on :

- (i) DC potentiometer (8)
(ii) Drysdale type potentiometer (8)

14. (a) Write necessary derivation explain the Kelvin double bridge circuit for very low value resistance measurement.

Or

- (b) What is megger? Explain the construction and working principle of megger?

15. (a) Explain the measurement of inductance using Maxwell-wein's bridge circuit.

Or

- (b) Write short notes on :

- (i) Vibration galvanometer (8)
(ii) Campbell bridge. (8)