



C09-EE-305

**3243**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**OCT/NOV—2014**

**DEEE—THIRD SEMESTER EXAMINATION**

**ELECTRICAL AND ELECTRONIC MEASURING  
INSTRUMENTS**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

3×10=30

**Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the purpose of controlling torque in measuring instrument?
2. Distinguish between absolute and secondary instruments.
3. A moving-coil instrument has a resistance of 8 ohm and takes a current of 30 mA at full-scale deflection. If the instrument is to be used as a voltmeter to measure 300 V, calculate the multiplier value required.
4. What are the various types of errors in PMMC instruments?
5. Draw the circuit diagram for measuring the three-phase power using two-wattmeters.
6. State the applications of potentiometer.
7. Write any three advantages of semiconductor strain gauge.

- \* 8. State the specifications of digital energy meters.
- 9. State the advantages of digital energy meters.
- 10. Draw basic block diagram of digital instrument.

**PART—B**

10×5=50

**Instructions :** (1) Answer *any five* questions.  
 (2) Each question carries **ten** marks.  
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Explain the construction and working of dynamometer type voltmeter with a neat sketch.
- 12. Explain the construction and working of 3-phase 2-element type energy meter with a neat sketch.
- 13. Explain the construction and working of Weston frequency meter type power factor meter with a neat diagram.
- 14. Explain the construction and working of moving-iron repulsion type instrument with neat diagram.
- 15. Explain how megger is used to measure earth resistance with neat sketch.
- 16. Explain the constructional details and working principle of LVDT with a neat sketch.
- 17. Explain the working of rectifier type voltmeter with neat sketch and write its advantages and disadvantages.

- \* 18. (a) Differentiate among the indicating, integrating and recording instruments. 5
- (b) List the advantages of digital instruments over analog instruments. 5

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