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C09–EE–305

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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2017

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. State the differences between absolute and secondary instruments.

2. Why is damping torque necessary in measuring instruments?

3. Calculate the shunt required to extend the range of moving coil ammeter, which takes 20 mA to measure 20 A, if the resistance of the coil is 0·075 ohm.

4. List any three types of error in a single-phase energy meter.

5. State any three advantages of dynamometer-type instruments.

6. Write any three applications of potentiometer.

7. Write any three applications of thermocouple.

8. State any three specifications of digital voltmeter.

9. Compare digital instrument and analog instrument in three aspects.

10. State the advantages of digital energy meters.

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 MI attraction-type instruments with a neat diagram.

12. The power is measured by two wattmeters. If the total power is 100 kW and the power factor is 0·66 leading, what will be the reading of each wattmeter?

13. Explain the construction and working of PMMC voltmeter with a neat sketch.

14. Explain the construction and working of Weston synchroscope with a neat diagram.

15. Explain the construction of Megger with a neat sketch.

16. Define transducer and state the applications of transducers.

17. Explain the working of three-phase digital energy meter with neat block diagram.

18. *(a)* Compare recording instruments with integrating instruments.

(b) Explain the working of digital multimeter.

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