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C09–EE–305

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—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) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State the different types of measuring instruments according to principle of working.

2. What is the purpose of damping torque in measuring instruments?

3. List the common errors in permanent magnet moving coil instruments.

4. Compare moving iron and moving coil instruments in three aspects.

5. A 1 mA moving coil meter with an internal resistance of 10 it to be used as (0–100) mA ammeter. Calculate the value of the required shunt resistance.

6. Explain the use of megger for measurement of earth resistance.

7. What is an electrical transducer? Give two examples.

8. List three advantages of digital instrument over analog instrument.

9. Draw basic building block diagram of digital instrument.

10. Write a short note on rectifier-type ammeter.

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 of moving iron attraction-type instrument with neat sketch. 10

12. Explain the construction and working of Weston Synchroscope with a neat diagram. 10

13. Explain the construction and working of dynamometer-type ammeter with a neat sketch. 10

14. Explain the construction and working principle of single-phase induction-type energy meter with a neat diagram. 10

15. Explain the construction and working of Ohmmeter with neat sketch. 10

16. Describe the construction of a strain gauge and desirable properties of strain gauge. 10

17. Explain the working of digital multimeter with neat sketch and list the specifications. 10

18. *(a)* Distinguish among indicating, recording and integrating instruments. Give at least one example of each type. 5

(b) Explain the working of three-phase digital energy meter. 5

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