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C16–EE–305

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## BOARD DIPLOMA EXAMINATION, (C–16)

## MARCH/APRIL—2018

## DEEE—THIRD SEMESTER EXAMINATION

ELECTRICAL AND ELECTRONICS
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.** Why is damping torque necessary in measuring instruments?

**3.** A PMMC instrument gives a reading of 25 mA when the potential difference across its terminals is 76 mV. Calculate the shunt resistance for full-scale deflection corresponding to 50 A.

**4.** What is creeping? How is it prevented?

**5.** List the methods for the measurement of medium resistance.

**6.** Compare the series and shunt ohmmeter circuits in any six aspects.

**7.** Define inverse transducer and give examples.



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**8.** List any four applications of thermistors.

**9.** State the advantages of digital energy meters.

**10.** State the uses of tong tester.

## 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 principle, construction and working of attraction-type MI instrument.

**12.** *(a)* Compare moving coil and moving iron instruments in any five aspects. 5

*(b)* List the advantages and disadvantages of dynamometer instruments. 5

**13.** Explain with a neat sketch, the construction and working of a single-phase induction-type energy meter.

**14.** Explain the construction and working of Weston-type synchroscope.

**15.** Explain the working of *(a)* series-type ohmmeter and *(b)* shunt-type ohmmeter with neat sketches. 5+5=10

**16.** Explain the classifications of transducer with examples.

**17.** Explain the construction and working of a digital multimeter with neat block diagram.

**18.** *(a)* Explain the eddy current damping with a neat sketch. 5

*(b)* Compare digital and analog instruments in any five aspects. 5

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