

7248

BOARD DIPLOMA EXAMINATION, (C-20)

NOVEMBER/DECEMBER—2022

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 purpose of controlling torque.
2. Draw a legible sketch of the moving coil measuring instrument.
3. Draw a legible circuit diagram of the megger.
4. State the need of transducer in measuring the quantities.
5. List any three basic components of a digital electronic measuring instrument.
6. State the remedies to any three common errors, that occur in the moving coil measuring instruments.
7. State any three disadvantages of the moving coil measuring instrument.
8. List any three common errors, that occur in the moving iron measuring instruments.
9. Classify the transducers based on the principle of transduction.
10. List any three types of the digital voltmeters.

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

- 11.** Compare air friction damping with eddy current damping with respect to any four aspects.

**(OR)**

Explain the phenomenon of deflecting torque in the electrical measuring instrument.

- 12.** Explain with a legible sketch, the working of attraction type moving iron measuring instrument.

**(OR)**

Compare moving coil measuring instrument with moving iron measuring instrument with respect to any eight aspects.

- 13.** Explain with a legible sketch, the working of a shunt ohmmeter.

**(OR)**

Explain with a legible sketch, the working of a basic potentiometer.

- 14.** Explain with a legible sketch, the working of Hall effect sensor to measure the current.

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**(OR)**

Explain the usefulness of transducers in the measurement of electrical quantities.

- 15.** Compare the working of digital multimeter with analog multimeter.

**(OR)**

Explain with a legible block diagram, the working of all functional blocks of a digital frequency meter.

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**PART—C**

10×1=10

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- Instructions :** (1) Answer the following question.  
(2) The question carries **ten** marks.  
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 16.** Predict the behaviour of a moving coil ammeter when its current limiting shunt resistance fails.

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