

7248

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

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. List any six important electrical quantities and their measuring instruments.
2. State any three errors that occur in moving coil instruments.
3. Compare moving coil measuring instruments with moving iron measuring instruments.
- * 4. List the advantages of dynamometer type measuring instruments.
5. State the precaution to be taken while using the current transformer.
6. List the methods of measurement of low resistance.
7. State the need of a transducer.
8. List the factors influencing the selection of a transducer.
9. List the basic components of analog instruments.
- * 10. List the differences between analog instruments and digital instruments.

- 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.** (a) Explain the different types of torques present in the indicating instruments.

(OR)

- (b) Explain the method of producing control torque with gravity control method.

- 12.** (a) Explain the construction and working of single-phase induction type energy meter.

(OR)

- (b) Explain the construction and working of Weston synchroscope.

- 13.** (a) Explain the construction and working of MEGGER.

(OR)

- (b) Describe the shunt type ohmmeter and series type ohmmeter.

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- 14.** (a) Explain the factors influencing the choice of transducer.

(OR)

- (b) Explain the construction and working of LVDT with neat sketches.

- 15.** (a) Explain the working of rectifier type voltmeter with a neat sketch.

(OR)

- (b) Explain the working of three-phase digital energy meter with a block diagram.

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PART—C

10×1=10

- 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.** A moving coil instrument of resistance 4 ohm, gives a full-scale deflection of 20 mA. It is desired to convert this instrument into a voltmeter to read voltage upto 30 V. Find the value of series resistance needed.

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