

## 7248

## **BOARD DIPLOMA EXAMINATION, (C-20)**

# OCTOBER/NOVEMBER—2023 DEEE - THIRD SEMESTER EXAMINATION

### ELECTRICAL AND ELECTRONIC MEASURING INSTRUMENTS

Time: 3 hours [ Total Marks: 80

#### PART—A

 $3 \times 10 = 30$ 

**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. Compare absolute and secondary instruments in any three aspects.
- **2.** List the advantages of dynamometer type instrument.
- **3.** State the need of CT and PT.
- **4.** List the errors commonly occur in moving iron instruments.
- **5.** Write the formula for 'Multiplication factor' in PMMC voltmeters.
- **6.** Draw the circuit diagram of basic Ohm meter.
- **7.** Define active and passive transducers.
- **8.** List any six applications of sensors.
- **9.** State the advantages of digital instruments.
- **10.** Draw the circuit diagram of rectifier type voltmeter.

**PART—B** 8×5=40

**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) What is damping torque? Explain fluid friction damping with a neat sketch.

(OR)

- (b) What are the types of secondary instruments? Explain them with examples.
- **12.** (a) Explain the construction and working of PMMC measuring instrument.

(OR)

- (b) Explain the construction and working of Weston Synchroscope with a neat sketch.
- **13.** (a) Explain construction and working of a Megger with a neat diagram.

(OR)

- (b) Explain the measurement of unknown emf by potentiometer.
- **14.** (a) Explain the measurement of temperature using thermistor in a bridge circuit.

(OR)

- (b) What is Hall effect? Explain how the Hall voltage is generated?
- **15.** (a) Explain the working of rectifier type of voltmeter with a neat sketch.

(OR)

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

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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.** Explain the working of a basic Ohm meter with a legible sketch.

