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C20-EE–304

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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 3×10=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.

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

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