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C20-EE-304

7248

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—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 deflecting torque.
2. State any three advantages of the dynamometer type measuring instrument.
3. Draw a legible circuit diagram of the shunt ohmmeter.
4. List any three applications of the sensors.
5. Draw a legible circuit diagram of the rectifier type ammeter.
6. Draw the legible connection diagram to measure power in a single-phase circuit with a dynamometer type wattmeter in conjunction with instrument transformers.
7. Draw a legible sketch of the Weston synchroscope.
8. State any three disadvantages of dynamometer type instruments.
9. Identify the importance of active transducers in measuring electrical quantities.
10. State any three advantages of digital energymeter over analog energymeter.

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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. Explain with a legible sketch, the method of air friction damping.

(OR)

Compare air friction damping with fluid friction damping with respect to any four aspects.

12. Explain with a legible sketch, the construction of single-phase induction type energymeter.

(OR)

Explain with a legible sketch, the working of moving coil measuring instrument.

13. Explain with a legible sketch, the basic ohmmeter.

(OR)

Distinguish the constructional differences and working differences of series and shunt type ohmmeters.

14. Explain any two similarities and two differences between active transducers and passive transducers.

(OR)

Explain with a legible sketch, the method of temperature measurement using thermister.

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15. Explain the four basic components of a digital electronic measuring instrument.

(OR)

Explain with a legible block diagram, the working of a single-phase digital energymeter.

PART—C

10×1=10

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

16. Analyze the reason to prefer thermister instead of thermocouple temperature measurement.

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