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C20-EE–304

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BOARD DIPLOMA EXAMINATION, (C-20)

FEBRUARY/MARCH — 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. Give at least one example to each one of the three types of secondary measuring instruments.

2. List any three common errors which occur in the dynamometer type measuring instruments.

3. Draw a legible circuit diagram of the series ohm meter.

4. List any three types of the sensors.

5. Draw a legible circuit diagram of the rectifier type voltmeter.

6. State the precaution to be taken while using current transformer.

7. State the remedies to any three common errors which occur in the sing phase induction type energy meter.

8. List any three parts of single-phase induction type energy meter.

9. Outline the need of strain gauge in weighing machine.

10. Compare digital voltmeter with analog voltmeter with respect to any three aspects.

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 obtaining the controlling torque using gravity control.

(OR)

Compare spring controlled controlling torque with gravity controlled controlling torque with respect to any four aspects.

12. Explain with a legible sketch, the working of megger.

(OR)

Explain with a legible sketch, the working of potentiometer.

13. Explain with a legible sketch, the construction of attraction type moving iron measuring instrument.

(OR)

Explain the method of extending the range of moving coil voltmeter with a circuit diagram.

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

(OR)

Explain the application of linear variable differential transformer in the measurement of pressure at high temperatures.

15. Explain with a legible block diagram, the working of a digital multimeter.

(OR)

Explain the functional difference between single-phase digital energy meter and three-phase digital energy meter.

PART—C

10×1=10

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. Justify the usefulness of Hall effect sensor over any two methods of measuring current.

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