C09–EE–305

# 3243

## BOARD DIPLOMA EXAMINATION, (C–09)

## OCT/NOV—2016

## 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 one example for the following instruments :

*(a)* Indicating instrument

*(b)* Integrating instrument

*(c)* Recording instrument

**2.** Write a short note on pointers.

**3.** Briefly explain the common errors in a single-phase energy meter.

**4.** For a certain balanced 3-phase load, one wattmeter reads 20 kW and other 5 kW after the reversal of current coil in two-wattmeter method. Calculate the power of the load.

**5.** Calculate the shunt required to extend the range of moving coil ammeter, which takes 50 mA to measure 10 A, if the resistance of the coil is 0·08 ohm.

6. State the applications of potentiometer.

7. List any three applications of strain gauge.

8. State any three specifications of digital multimeters.

9. State the components of 3-phase digital energy meter.

10. State the difference between analog and digital measuring instruments.

## PART—B

10×5=50

***Instructions*** : (1) Answer *any* **five** questions.

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

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

11. Explain various errors in *(a)* MI instruments and *(b)* MC instruments. 5+5

12. Explain the construction and working of PMMC instrument with a neat sketch.

13. Explain the construction and working of Weston frequency meter with a neat sketch.

14. Explain the construction and working of dynamometer-type ammeter with a neat sketch.

15. Explain the construction and working of megger with a neat diagram.

16. Explain the factors affecting the choice of transducers.

17. Explain the working of rectifier-type voltmeter with a neat sketch.

18. *(a)* Explain air friction damping system with a neat sketch. 5

*(b)* Explain the working of ramp-type digital voltmeter. 5

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