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C14–EC–303

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BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2016

DECE—THIRD SEMESTER EXAMINATION

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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Compare between the characteristics of ideal voltmeter and ideal ammeter. 3

2. List any three types of AC bridges and mention their use. 3

3. List any three specifications of digital frequency meter. 3

4. Define accuracy and resolution of a meter. 1½+1½=3

5. Mention the conditions for flicker-free waveforms in CRO. 3

6. Define the pulse parameters *(a)* rise time and *(b)* duty cycle. 1½+1½=3

7. List any three applications of RF signal generator. 3

8. List any three applications of power meters. 3

9. Define stray capacitance of a coil. 3

10. What is spectrum analyzer? 3

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. *(a)* Explain the principle of extending the range of DC ammeter. 6

(b) A moving coil instrument gives a full-scale deflection for a current of 10 mA with a potential difference of 100 mV across it. Calculate the value of the shunt resistance required to get a range of 0-100 A. 4

12. Draw the Schering bridge circuit and explain the capacitance measurement using Schering bridge. 4+6=10

13. Explain the working of ramp type digital voltmeter with block diagram. 5+5=10

14. Draw the triggered sweep circuit and explain its operations. 4+6=10

15. Explain the function of various controls on front panel of CRO. 10

16. Draw the block diagram of a function generator and explain its working. 5+5=10

17. *(a)* List the advantages of digital instruments over analog instruments. 5

(b) Explain the importance of shielding in RF generators. 5

18. Explain the working of distortion factor meter with block diagram. 5+5=10

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