



C09-EC-405

**3471**

**BOARD DIPLOMA EXAMINATION, (C-09)  
OCT/NOV—2015  
DECE—FOURTH 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) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the principle of the differential voltmeter?
2. Mention the working principle of series type ohmmeter.
3. In a Wheatstone bridge, the values of resistances in three arms are given as follows :  
 $R_1 = 10 \text{ k}$  ,  $R_2 = 15 \text{ k}$  ,  $R_3 = 40 \text{ k}$   
Find unknown resistance  $R_x$  value in fourth arm.
4. List the specifications of digital frequency meter.
5. Draw the block diagram of digital IC tester.
6. List the specifications of digital voltmeters.
7. List the major components of a CRT.
8. List the applications of recorders.

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9. List the applications of AF oscillator.
10. List the applications of RF signal generators.

**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) Calculate the value of the multiplier resistance (using voltmeter sensitivity) to convert a 200 micro Ampere meter movement with an internal resistance of 100 ohms in to a 50 V d.c. voltmeter. 5  
(b) Explain the principle and working of rectifier type voltmeter. 5
12. Explain the working of Q-meter with neat diagram.
13. Explain the working of spectrum analyzer with neat block diagram.
14. Draw the block diagram of DMM and explain its operation.
15. (a) List different types of probes used in oscilloscopes. 4  
(b) Explain sensitivity, frequency response and voltage measurement of a CRO. 6
16. Explain the procedure for measurement of—  
(a) frequency; 5  
(b) phase difference between two signals using Lissajous pattern method. 5
17. Explain the working of AF power meter with a neat sketch.
18. Explain the working of AF sine and square wave oscillator with block diagram.

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