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C20-AEI–304

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BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DAEI - 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) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List the different torques needed for driving analog instruments.

2. State the need for high input impedance for a voltmeter.

3. Give the classification of bridge circuits.

4. List any three advantages of digital instruments over analog instruments.

5. List the specifications of digital multi meter.

6. Write the expression for deflection sensitivity.

7. List the applications of CRO.

8. List any three front panel controls of AF oscillator and state their function.

9. State the importance of shielding in RF generators.

10. Define Q-factor.

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. *(a)* Explain the principle and working of rectifier type voltmeter.

(OR)

(b) Explain the capacitance measurement using Schering bridge.

12. *(a)* Explain the working of RAMP type digital voltmeter with block diagram.

(OR)

(b) Explain the working of digital frequency meter with block diagram.

13. *(a)* Sketch CRT and explain the function of each block.

(OR)

(b) Explain the dual trace oscilloscope with block diagram.

14. *(a)* Explain the working of AF oscillator (sine and square) with block diagram.

(OR)

(b) Explain the working of function generator with block diagram.

15. *(a)* Explain the working of logic analyzer with block diagram.

(OR)

(b) Explain the working of XY recorders.

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. Determine the range of resistance R_3 must have in order to measure unknown resistance in the range 1 – 100 kΩ using a Wheatstone bridge. Given R_1 = 1 kΩ and R_2 = 10 kΩ.

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