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C20-AEI-304

7217

BOARD DIPLOMA EXAMINATION, (C-20)

FEBRUARY/MARCH — 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. State the balancing conditions of bridges (AC and DC).
2. List the different torques needed for driving analog instruments.
3. State the use of megger for insulation measurements.
4. List the advantages of digital instruments over analog instruments.
5. Draw the block diagram of digital frequency meter.
6. List the conditions for flicker free waveforms.
7. List any three applications of CRO.
8. State the importance of shielding in RF generators.
9. List any three applications of RF signal generators.
10. State the necessity of plotter and recorders.

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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 the principle of operation of extending the range of DC ammeter.

(OR)

Explain the capacitance measurement using Schering bridge.

- 12.** Explain the working of digital LCR meter with block diagram.

(OR)

Explain the working of digital multi-meter with block diagram.

- 13.** Explain the block diagram of CRT.

(OR)

Explain the principle of operation of storage oscilloscope with block diagram.

- 14.** Explain the working of function generator with block diagram.

(OR)

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

- 15.** Explain the working of Q-meter with diagram.

(OR)

Explain the working of digital IC tester with block diagram.

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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.** In a Wheatstone's bridge $P = 50 \Omega$, $Q = 100 \Omega$ and $R = 20 \Omega$. If the galvanometer shows zero deflection, determine the value of S .

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