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(Revision-2015/19)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER - 2023

ELECTRICAL AND ELECTRONIC INSTRUMENTS

[Maximum marks: 100] [Time: 3 Hours]

PART – A
Maximum marks: 10

I (Answer ***all*** the questions in one or two sentences. Each question carries **2** marks)

1. Define damping torque.
2. Mention any two applications of Wheatstone bridge.
3. Define creeping.
4. Explain about the role of delay unit in horizontal amplifier.
5. Mention any two advantages of digital voltmeter. (5 x 2 = 10)

PART – B
Maximum marks: 30

II (Answer any ***five*** of the following questions. Each question carries **6** marks)

1. Explain with neat figure about D'Arsonval galvanometer.
2. Illustrate the conversion of galvanometer into voltmeter.
3. Derive the expression for unknown resistance in Wheatstone bridge.
4. Derive the expression for unknown frequency using weins bridge.
5. Write a short note on measurement of voltage and time period using CRO.
6. Explain about lissajous pattern formed when phase difference between two waveform is 0^{o} and 90^{o}.
7. With neat figure explain about galvanometric recorder. (5 x 6= 30)

PART – C
Maximum marks: 60

(Answer ***one full*** question from each unit**.** Each full question carries **15** marks)

UNIT –I

III. (a) Explain about attraction type moving iron instruments. (8)

(b) Describe about increasing the range of ammeter. (7)

OR

IV. (a) Explain the block diagram of analog multimeter. (8)

(b) Compare attraction and repulsion type MI instruments. (7)

UNIT-II

V. (a) Explain construction and working of dynamometer type wattmeter. (8)

(b) Derive an expression for inductance in Maxwell inductance bridge. (7)

OR

VI. (a) Explain about induction type single phase energy meter. (8)

(b) Derive an expression for inductance in Hay bridge. (7)

UNIT-III

VII. (a) Write a short note on CRO block diagram. (8)

(b) Explain about dual beam oscilloscope. (7)

OR

VIII. (a) Describe about digital storage oscilloscope. (8)

(b) Mention any two type of CRO probe. (7)

UNIT-IV

IX. (a) Explain potentiometric type recorder. (8)

(b) Explain X-Y Recorder. (7)

OR

X. (a) Explain circular data recorder. (8)

(b) Explain ramp type digital voltmeter. (7)
