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(Revision – 2015/19)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2024

ELECTRICAL & ELECTRONIC INSTRUMENTS

[Maximum Marks: **100**] [Time: **3** Hours]

PART-A

[Maximum Marks: **10**]

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

1. State the basic principle of D' Arsonval galvanometer.
2. Name any two advantages of Dynamometer type Wattmeter.
3. Write the function of acquadag coating in CRT.
4. State the principle of Galvanometric recorder.
5. Define electrostatic deflection. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

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

1. Explain the conversion of Galvanometer to ammeter.
2. Describe the method for increasing the range of ammeter.
3. Explain the working of Dynamometer type Wattmeter.
4. Describe the circuit for impedence measurement using Hay's bridge.
5. Explain the measurement of Voltage and Frequency using Cathode Ray Oscilloscope.
6. Draw the block diagram of Cathode Ray Oscilloscope (CRO).
7. Describe the working of digital voltmeter. (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 the working of attraction type Moving Iron Instrument. (9)

b. Explain the measurement of AC Voltage using analog multimeter. (6)

OR

IV. a. Compare moving coil and moving Iron Instrument. (6)

b. Explain resistance measurement using analog multimeter. (9)

UNIT – II

V. a. State the working principle of electrostatic type Wattmeter and Induction type Wattmeter. (6)

b. With a neat sketch explain the working of Single Phase Energy Meter. (9)

OR

VI. a. Derive the expression for unknown impedence using Maxwell's bridge. (9)

b. Explain the measurement of resistance using Wheatstone's bridge. (6)

UNIT- III

VII. a. List the basic controls of CRO. (5)

b. Describe the working of dual beam Oscilloscope. (10)

OR

VIII. a. Explain the working of Digital Storage Oscilloscope. (9)

b. Describe different types of CRO probes. (6)

UNIT - IV

IX. a. Describe the working of Ramp Type DVM. (10)

b. Draw the Schematic diagram of Potentiometer type recorder. (5)

OR

X. a. Explain the working of X_Y Recorder. (10)

b. Draw the labelled diagram of Circular Chart Data Recorder. (5)

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