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

ELECTRONICS INSTRUMENTS AND MEASUREMENTS

[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. Define the term accuracy.
2. Define precision.
3. Define deflection sensitivity of C.R.O.
4. What is a logic analyzer?
5. Define telemetry. (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 working of a moving coil galvanometer.
2. List the differences between ammeter and galvanometer.
3. List the applications of C.RO.
4. Explain different parts of a CRT with a neat sketch.
5. Explain the resistance measurement using Wheatstone bridge with a neat sketch.
6. Explain the principle of Q-meter.
7. Explain a open loop system with the help of block diagram. (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 digital frequency meter using block diagram. (9)

b. Differentiate between moving coil and moving iron instruments. (6)

OR

IV. a. Draw and explain the block diagram of a digital multimeter. (8)

b. Differentiate between 3 ½ and 4 ½ digit displays in terms of accuracy. (7)

UNIT – II

V. a. Explain the working principle of a thermocouple using suitable figure. (7)

b. Explain the working of LVDT with a neat diagram. (8)

OR

VI. a. Draw and explain the block diagram of a DSO. (8)

b. Explain active and passive transducers. (7)

UNIT- III

VII. a. Draw and explain the block diagram of a spectrum analyzer. (8)

b. Explain inductance measurement using Hay's bridge with a suitable figure. (7)

OR

VIII. a. List the applications of spectrum analyzer. (6)

b. Draw and explain the block diagram of a function generator. (9)

UNIT - IV

IX. a. Explain the working of potentiometer type recorder using figure. (8)

b. Draw and explain the block diagram of a basic instrumentation system. (7)

OR

X. a. Draw and explain the block diagram of digital DAS. (8)

b. Explain the working of XY recorder using figure. (7)

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