

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE , APRIL – 2023**

**ELECTRONICS INSTRUMENTS AND MEASUREMENTS**

(Maximum Marks : 100)

(Time : 3 hours)

**PART – A**  
(Maximum Marks : 10)

Marks

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

1. Define Instrument accuracy and resolution.
2. List any two applications of CRO.
3. Give two types of bridges with examples.
4. List the types of resistive transducers.
5. List the uses of strip chart recorders.

(5x2=10)

**PART – B**  
(Maximum Marks : 30)

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

1. Discuss the common errors occurs in measuring instruments.
2. Give the difference between 3½ and 4½ digit display.
3. Explain the electrostatic focusing system of CRO with a neat sketch.
4. Compare dual trace and dual beam cathode ray oscilloscope.
5. With a neat sketch, explain the method of measuring impedance by Maxwell's bridge.
6. Give the role of telemetry in instrumentation system.
7. Compare strip chart recorder and circular chart recorder.

(5x6=30)

**PART – C**

(Maximum Marks : 60)

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

**UNIT – I**

- III.** (a) How to convert a galvanometer to ammeter and voltmeter. (8)  
(b) Illustrate the permanent magnet moving coil galvanometer with its diagram. (7)

**OR**

- IV.** (a) With the help of block diagram, explain digital multimeter. (8)  
(b) Illustrate the working of digital frequency meter with block diagram. (7)

**UNIT – II**

- V.** (a) How to measure voltage (AC and DC), frequency, phase angle and time period with CRO.(8)  
(b) Illustrate the working principle of a LVDT with diagrams. (7)

**OR**

- VI.** (a) With the help of block diagram, explain the working of digital storage oscilloscope. (8)  
(b) Illustrate the working of photovoltaic cell with its applications. (7)

**UNIT –III**

- VII.** (a) With a neat sketch, explain the working of Wheatstone bridge for resistance measurement. (8)  
(b) With the help of block diagram, explain spectrum analyser. (7)

**OR**

- VIII.** (a) With a neat sketch, explain the working of Wien Bridge for frequency measurement. (8)  
(b) With the help of block diagram, explain logic analyser with its applications. (7)

**UNIT – IV**

- IX.** (a) List any 8 difference between open loop and closed loop systems. (8)  
(b) Illustrate the working analog data acquisition system with the help of block diagram. (7)

**OR**

- X.** (a) With the help of block diagram, explain basic instrumentation system. (8)  
(b) Illustrate the working of X-Y recorder. (7)

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