

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

ELECTRICAL AND ELECTRONICS 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. Describe controlling torque in a moving system.
2. Define wattmeter.
3. Define deflection sensitivity.
4. List any four parts of CRT.
5. State the principle of RAMP type 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. Compare moving iron and moving coil instrument.
2. Explain the working of analog multimeter with block diagram.
3. Explain the working of single phase energy meter.
4. Explain the principle of resistance measurement using wheatstones bridge.
5. Describe the working of Dual beam oscilloscope.
6. Describe the working of Digital multimeter with block diagram.
7. Explain the working of X-Y recorder with 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 the construction and working of D'Arsonval galvanometer.

(9)

(b) Describe the construction and working of repulsive type moving iron instrument. (6)

OR

IV.(a) Describe the construction and working of attraction type moving iron instrument. (8)

(b) Describe any two methods of increasing the range of voltmeter. (7)

UNIT-II

V.(a) Explain the construction and working of dynamometer type wattmeter. (9)

(b) Explain the principle of impedance measurement using Hay's bridge. (6)

OR

VI. (a) Explain the principle of impedance measurement using Maxwell's bridge. (8)

(b) Explain the principle of capacitance measurement using Schering bridge. (7)

UNIT-III

VII.(a) Explain the construction and working of Cathode Ray Oscilloscope. (9)

(b) Describe the working of dual trace oscilloscope. (6)

OR

VIII.(a) Explain the different types of CRO probes. (8)

(b) Explain the working of digital storage oscilloscope. (7)

UNIT-IV

IX. (a) Explain the working of Galvanometric Recorder with diagram. (8)

(b) Explain the working of potentiometric recorder with diagram. (7)

OR

X. (a) Explain the working of circular chart Recorders. (8)

(b) Explain the working of strip chart recorder with figure. (7)
