

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2022**

ELECTRICAL AND ELECTRONICS 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. Illustrate the principle behind PMMC instruments.
2. List the advantages and disadvantages of Electro dynamometer type wattmeter.
3. Define Deflection sensitivity.
4. Define lissajous pattern.
5. State any two applications of X-Y recorders. (5 x 2 = 10)

PART-B

[Maximum Marks: 30]

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

1. Write a short note on moving iron type instruments.
2. Write a short note on Analog multimeter.
3. Explain about the impedance measurement using Hay's bridge.
4. How can you measure unknown frequency using lissajous pattern.
5. Explain digital storage oscilloscope with the help of a block diagram.
6. Explain the working of galvanometric type recorder.
7. Describe the working of Ramp type DVM. (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) Explain how can you convert a galvanometer in to an ammeter. (6)

OR

- IV. (a) Explain the method to extend the range of a voltmeter. (8)
(b) Describe the method for measurement of resistance using analog multimeter. (7)

UNIT – II

- V. (a) Explain the construction and working of dynamometer type wattmeters. (8)
(b) How can you measure unknown resistance using Wheatstone's bridge circuit. (7)

OR

- VI. (a) Explain the construction and working of single phase induction type energy meters. (8)
(b) Describe the capacitance measurement using Schering bridge. (7)

UNIT- III

- VII. (a) Explain the block diagram of a CRO. (10)
(b) Describe the working of a sampling oscilloscope. (5)

OR

- VIII. (a) Write a short note on Cathode Ray Tube. (7)
(b) Distinguish between dual beam and dual trace CRO. (8)

UNIT - IV

- IX. (a) Explain the block diagram of digital multimeter. (7)
(b) Briefly explain about X-Y recorders. (8)

OR

- X. (a) Explain about strip chart recorders. (9)
(b) Write a short note on circular chart recorder. (6)
