

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

ELECTRONIC INSTRUMENTS & MEASUREMENTS

[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. Differentiate between 3 ½ and 4 ½ digit display.
2. Define electrostatic deflection sensitivity.
3. List any two uses of function generator.
4. List any 4 types of digital recorders.
5. State the role of telemetry in instrumentation system.

(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 a basic galvanometer into ammeter.
2. Differentiate between dual beam and dual trace CRO.
3. Explain the principle of operation of Q meter with a neat diagram.
4. Explain the general DAS with block diagram.
5. Differentiate between moving coil and moving iron instruments.
6. List and explain the functional stages of a general instrumentation system.
7. Write a short note on fiber optic sensor.

(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) With the help of a suitable diagram, explain the working principle of PMMC galvanometer.

(9)

(b) Differentiate between the term “accuracy” and “precision” . (6)

OR

IV.(a) Explain digital frequency meter with the aid of block diagram. (9)

(b) List the specification of analog multimeter. (6)

UNIT-II

V. (a) Draw and explain the block diagram of DSO. (9)

(b) Describe the procedure of measuring voltage and frequency using CRO. (6)

OR

VI. (a) Explain the working principle of LVDT with neat diagram. (9)

(b) Explain the working principle of microphone type transducer. (6)

UNIT-III

VII. (a) With the help of a block diagram, explain logic analyser and list any 4 application. (9)

(b) Briefly explain the calculation of frequency using Wien bridge. (6)

OR

VIII.(a) With the help of a block diagram, explain the operation of spectrum analyser. (9)

(b) Briefly explain the calculation of impedance measurement using Hay’s bridge. (6)

UNIT-IV

IX. (a) Explain the working of a potentiometric type recorder with neat diagram. (9)

(b) Compare strip chart recorder and X-Y recorder. (6)

OR

X. (a) Explain the operation of digital DAS with functional block diagram. (9)

(b) Differentiate open loop and closed loop control system. (6)
