



TED (15) – 4041

Reg. No.

(REVISION — 2015)

Signature

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2019**

ELECTRONIC INSTRUMENTS AND MEASUREMENTS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define instrument precision.
2. Name the type of Galvanometer which can be used for both AC and DC measurements.
3. Define Transducer.
4. List the wave forms that a function generator can produce.
5. Define Telemetry in instrumentation system. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Illustrate the methods for measuring voltage by using a moving coil galvanometer.
2. Differentiate $3\frac{1}{2}$ and $4\frac{1}{2}$ digit displays in terms of accuracy of a digital multimeter.
3. Explain Electrostatic focusing system used in CRO.
4. List the features and application of Photovoltaic Cell.
5. Explain the function of logic analyzer with block diagram.
6. List the main types of AC and DC bridges used for measurements and state the measurement of each bridge.
7. Draw the basic block diagram of instrumentation system and explain. (5×6 = 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 working of a galvanometer with neat sketch. 8
(b) List the specifications of analog multimeter. 7

OR

- IV (a) Explain the working of digital multimeter with block diagram. 8
(b) List the differences between moving coil and moving iron instruments. 7

UNIT — II

- V (a) Explain the function of CRO with block diagram. 8
(b) List the applications of Digital Storage Oscilloscope. 7

OR

- VI (a) Explain the method of displacement measurement by using LVDT. 8
(b) Identify the probes used in CRO and explain about any two. 7

UNIT — III

- VII (a) Explain the working of Spectrum Analyzer with block diagram. 8
(b) Explain the method of inductance measurement using Maxwell's Bridge. 7

OR

- VIII (a) Explain the method for measuring an unknown resistance by using Wheatstone Bridge. 8
(b) Explain the method for measuring the electrical properties of the coils and capacitors by using suitable meter. 7

UNIT — IV

- IX (a) Illustrate the working of X-Y recorder. 8
(b) Explain the working of open loop control system with its advantages. 7

OR

- X (a) Illustrate the working of Strip Chart Recorder. 8
(b) Explain the analog Data Acquisition System with block diagram. 7