

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

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 error.
2. List any two applications of wheat stone bridge.
3. Define deflection sensitivity of C.R.O.
4. List any two applications of logic analyzers.
5. Define open loop control system.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Differentiate between moving coil and moving iron instrument.
2. Draw a neat sketch of CRT and label the parts.
3. List the specifications of digital multimeter.
4. Illustrate the working of Digital Data Acquisition System.
5. Classify transducers based on the technology.
6. Describe the importance of telemetry in instrumentation system.
7. Draw the block diagram of spectrum analyzer.

(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 how a galvanometer can be converted into a multi range volt meter. 8
(b) Draw the block diagram of digital multimeter. 7

OR

- IV (a) Illustrate the working of a Digital frequency meter. 8
(b) Draw the DC voltage measuring section of a multimeter and explain. 7

UNIT — II

- V (a) Illustrate the working of potentiometric type transducer. 8
(b) Describe the measurement of time period and frequency by using CRO. 7

OR

- VI (a) Explain the working of dual beam CRO with the help of block diagram. 8
(b) Differentiate between active and passive transducers. 7

UNIT — III

- VII (a) Explain capacitance measurement method by using Schering's bridge. 8
(b) Illustrate the working of Q meter. 7

OR

- VIII (a) Explain how Maxwell's bridge is used to measure the inductance. 8
(b) Illustrate the working of Logic analyzer. 7

UNIT — IV

- IX (a) Explain the basic instrumentation system with block diagram. 8
(b) Describe the data recorders. 7

OR

- X (a) Illustrate the working of Strip Chart recorder. 8
(b) Describe closed loop control system. 7