TED (15/19) -3213
(Revision- 2015/19)

**A21-08933**

Reg.No…….....
Signature. .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL -2021.

# ELECTRICAL AND ELECTRONIC INSTRUMENTS

(Maximum Marks : 75) [Time : 2.15 hours]

## PART–A

Marks

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

1. State the principle of D'Arsonval Galvanometer.
2. Define deflection torque.
3. Name any two bridges for the measurement of Inductance.
4. Define deflection sensitivity of CRO.
5. Name any two Recorders. (3x2=6)

## PART - B

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

1. Illustrate the working of attraction type moving iron instruments.
2. Write the principle of measuring energy using single phase energy meter.
3. Write a short note about any two types of wattmeter.
4. Describe different types of CRO probes.
5. Illustrate Time period and voltage measurement using CRO.
6. Describe the working of X-Y Recorders with figure.
7. List advantages of digital multimeter.

[4x6 =24]

## PART - C

(Answer **any of the three units** from the following. Each full question carries 15 marks)

### UNIT I

**III** (a) Explain the production of deflecting, control and damping torques in moving coil instruments. (9)

(b) Describe the conversion of galvanometer into ammeter. (6)

**OR**

**IV** (a) Explain the DC voltage and current measuring circuit in analog multimeter. (8)

(b) Compare attraction and repulsion type moving iron instruments. (7)

**UNIT- II**

**V** (a) Describe the constructional details of 1-ph induction type energy meter with sketch. (8)

(b) Explain the principle of Resistance measurement using DC wheatstone's bridge. (7)

**OR**

**VI** (a) Describe the working of dynamometer type Wattmeter. (8)

(b) Draw and explain the circuit of capacitance measurement using Schering Bridge. (7)

**UNIT- III**

**VII** (a) Write different modes of operation of CRO and its purpose. (6)

(b) Illustrate Lissajous figure and techniques for frequency measurement using it. (9)

**OR**

**VIII** (a) Explain the block diagram of Cathode Ray Oscilloscope. (8)

(b) Describe the block diagrams of Dual beam and Dual trace oscilloscope. (7)

**UNIT – IV**

**IX** (a) Draw and explain the block diagram of digital voltmeter. (7)

(b) Describe the working of Potentiometer type Recorder with figure. (8)

**OR**

**X** (a) Describe the working of Galvanometric Recorder with figure. (8)

(b) Explain the block diagram of digital multimeter. (7)`

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