

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

**ELECTRICAL MEASURING INSTRUMENTS**

[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. Write one example for absolute instrument.
2. Write any two mechanisms for production of damping torque.
3. Name any two errors in dynamometer type wattmeter.
4. Write the classification of resistance on the basis of their value.
5. List any two applications of CRO.

(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 three essentials of an indicating instrument.
2. Damping is necessary in an indicating instrument. Why?
3. Draw the connection diagram and explain L.P.F. wattmeter.
4. Draw the schematic diagram of three phase energy meter.
5. Describe the methods of resistance measurement by voltmeter ammeter method.
6. Explain Murray loop test for locating cable fault.
7. Distinguish between analog and digital meters.

(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) Draw the diagram and explain the construction details and working principle of MC instrument.

(8)

(b) Describe the advantages of PMMC instrument. (7)

OR

IV.(a) Explain the working of moving iron attraction type instruments. (8)

(b) Describe in brief the sources of error in measuring instruments. (7)

### UNIT-II

V. (a) Explain the principles of operation of dynamometer type wattmeter with a neat sketch. (8)

(b) Draw the circuit diagram and explain the calibration of energy meter by direct loading. (7)

OR

VI. (a) With the help of sketches, explain the construction and working of single phase induction type Energy meter. (8)

(b) Draw the connection diagram for the measurement of three phase power by two wattmeter method. (7)

### UNIT-III

VII. (a) Draw the circuit diagram and explain the working insulation Megger. (8)

(b) Describe the procedure of measurement of earth resistance by fall of Potential method. (7)

OR

VIII.(a) Draw the diagram and explain the working of Wheatstone Bridge. (8)

(b) Draw the diagram and explain the working of earth megger. (7)

### UNIT-IV

IX. (a) With the help of a diagram, describe the working of reed type frequency meter. (8)

(b) Explain the working of a single phase electrodynamic power factor meter with the help of a diagram. (7)

OR

X. (a) Draw a neat diagram and explain the working of CRT. (8)

(b) Explain the measurement of phase and frequency using CRO. (7)

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