

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL - 2024**

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

[Maximum Marks : 75]

[Time : 3 hours]

PART-A

I. Answer all the following questions in one word or sentence. Each question carries 1 mark.

(9x1=9 marks)

		Module Outcome	Cognitive level
1	Degree of closeness of a measurement compared to the expected value is called.....	M1.01	R
2	Expand PMMC.	M1.03	R
3	Damping method used in moving coil instruments is.....	M1.04	R
4	Which material is coated inside the Cathode Ray Tube?	M2.01	R
5	When sinusoidal signal is applied to both deflection plates of CRO.....pattern is displayed on the screen.	M2.03	R
6	List the types of DC bridges.	M3.01	R
7	List any three types of waveforms produced at the output of signal generator.	M3.03	R
8	Define transducer.	M4.02	R
9transducers require an external power source for their operation.	M4.03	R

PART B

II. Answer any Eight questions from the following. Each question carries 3 marks.

(8x3=24 marks)

		Module Outcome	Cognitive level
1	Explain the following characteristics of a measuring instrument (a) precision (b) resolution	M1.01	U
2	Explain the conversion of galvanometer into voltmeter with the help of neat sketch.	M1.02	U
3	Differentiate between moving coil and moving iron instruments.	M1.03	U
4	Sketch the block diagram of ramp type digital voltmeter.	M1.04	R
5	Differentiate between dual beam and dual trace CRO.	M2.02	U
6	Draw the circuit diagram and equivalent circuit diagram of 10:1 probe.	M2.04	U
7	Summarize the procedure for impedance measurement using Maxwell's bridge.	M3.01	U
8	Sketch the circuit diagram of basic wave analyzer. Define its concept of operation.	M3.04	U
9	Outline the general classification of transducers.	M4.01	R
10	Explain the working principle of strip chart recorder.	M4.04	U

PART C

Answer **all** questions from the following. Each question carries 7 marks.

(6x7=42marks)

		Module Outcome	Cognitive level
III	Explain the working of galvanometer. OR	M1.02	U
IV	Draw the block diagram of Single-Phase Energy Meter and explain its construction.	M1.04	U
V	Explain constructional details of Cathode Ray Tube with neat sketch. OR	M2.01	U
VI	Explain the functional block diagram of a CRO.	M2.02	U
VII	Explain how voltage and frequency are measured using CRO. OR	M2.03	U
VIII	Draw and explain the block diagram of DSO.	M2.04	U
IX	Explain how resistance is measured using Wheatstone's bridge. OR	M3.01	U
X	Draw and explain the circuit diagram of basic slide wire DC potentiometer.	M3.02	U
XI	Draw the block diagram of function generator and explain each block. OR	M3.03	U
XII	With the help of a block diagram, explain the operation of spectrum analyzer.	M3.04	U
XIII	Explain the Selection Criteria of transducer. OR	M4.02	U
XIV	Explain working principle of LVDT with neat sketch.	M4.03	U
