

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

ELECTRONIC 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	Define the sensitivity of an instrument.	M1.02	R
2	List any two dynamic characteristics of an instrument.	M1.02	R
3	Write the equation for the torque of a PMMC instrument.	M2.01	U
4	Write the use of an ammeter.	M2.02	U
5	Name a bridge that can be used for inductance measurement.	M3.01	R
6	Name the bridge, commonly used for resistance measurement.	M3.01	R
7	What is CRT?	M4.01	R
8	Name a recorder that can be used for recording the variation of one variable, as a function of another one.	M4.04	A
9	List 2 types of LED displays.	M4.03	U

PART B

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

(8x3=24)

		Module Outcome	Cognitive level
1	Draw the linear system response and write the equation of sensitivity.	M1.02	U
2	Illustrate the conversion of the moving-coil instrument into voltmeter.	M2.02	U
3	Draw the arrangement for voltage measurement across a resistance (say R) using a voltmeter (say V/M).	M2.02	A
4	Write three advantages of digital multimeter.	M2.03	U
5	Illustrate the measurement of unknown resistance, using a suitable bridge.	M3.01	A
6	Draw the circuit diagram of a Maxwell bridge.	M3.01	U
7	Draw the diagram of an induction type single-phase energy meter.	M3.02	U
8	Explain the construction of a dynamometer type watt-meter.	M3.02	U
9	Draw the Wein's bridge circuit and write the equation for frequency.	M3.01	U
10	List three advantages of LED displays.	M4.03	U

PART C

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

(6x7=42marks)

		Module Outcome	Cognitive level
III	Explain the generalized block diagram of the instrumentation system. OR	M 1.01	U
IV	Describe the MKS systems of units. List the Fundamental & derived units in the MKS system.	M1.01	U
V	Describe about the different types of errors in instruments. OR	M1.02	U
VI	Illustrate the important dynamic characteristics of the instruments.	M1.02	U
VII	Describe the working of an attraction type moving iron instrument. OR	M2.01	U
VIII	Explain the working of permanent magnet moving coil instruments, using a neat diagram.	M2.02	U
IX	Derive the balance equation of a Schering bridge & find the expression for unknown capacitance. OR	M3.01	A
X	Draw the general circuit of an AC bridge and obtain the balancing conditions.	M3.01	A
XI	Explain the working of an LCD display, with the help of a diagram. OR	M4.03	U
XII	With necessary figure, illustrate the working of a potentiometric type strip chart recorder.	M4.04	U
XIII	Explain working of an XY recorder, with a schematic diagram. OR	M4.04	U
XIV	Illustrate the working of Digital Storage Oscilloscope.	M4.02	U
