

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, APRIL - 2023**

**ELECTRONIC INSTRUMENTATION**

[Maximum marks: 75]

(Time: 3 Hours)

**PART A**

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

**(9 x 1 = 9 Marks)**

		Module outcome	Cognitive level
1	Define the sensitivity of an instrument	M1.02	U
2	.....is the SI unit of luminous intensity	M1.01	U
3	Write the equation for the torque in permanent magnet moving coil (PMMC) mechanism	M2.01	U
4	Write one advantage of digital multimeter over analog multimeter	M2.02	U
5	Name a bridge that can be used for capacitance value measurement.	M3.01	U
6	Name the DC bridge	M3.01	R
7	Name the main component of CRO	M4.01	U
8	List two uses of DSO	M4.02	R
9	Name the recorder that can be used for recording the VI characteristics of a transistor.	M4.04	U

**PART B**

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

**(8 x 3 = 24 Marks)**

		Module outcome	Cognitive level
1	Explain range and span of an instrument	M1.02	U
2	Explain the hysteresis of an instrument	M1.02	U
3	Utilize the conversion of PMMC mechanism into voltmeter.	M2.02	A
4	Explain the difference between moving coil instruments and moving iron instruments.	M2.01	U
5	Derive the expression for unknown resistance using Wheatstone bridge.	M3.01	A
6	Compare between AC and DC bridges	M3.01	U
7	Explain the working of LCD	M4.03	U
8	Illustrate gross error and random error	M1.02	U
9	Draw the Wien's bridge circuit and write the equation for frequency	M3.01	U
10	List any three advantages of digital multimeter	M2.03	R

**PART C**

**Answer all questions. Each question carries seven marks**

**(6 x 7 = 42 Marks)**

		<b>Module outcome</b>	<b>Cognitive level</b>
III	Illustrate four Dynamic characteristics of an instrument <b>OR</b>	M1.02	U
IV	Illustrate any three static characteristics of an instrument.	M1.02	U
V	Illustrate the construction and working of moving coil instruments. <b>OR</b>	M2.01	U
VI	Explain the working of digital multimeter with block diagram	M2.03	U
VII	Derive the expression for unknown inductance using Hay's bridge. <b>OR</b>	M3.01	A
VIII	Explain the working of induction type single phase energy meter	M3.02	U
IX	Explain the working of CRO with block diagram <b>OR</b>	M4.01	U
X	Illustrate the working of X-Y recorders, with necessary figures.	M4.04	U
XI	Explain the generalized block diagram of instrumentation system <b>OR</b>	M1.01	U
XII	Illustrate any three types of errors in an instrument.	M1.02	U
XIII	Illustrate the working of strip chart recorders. <b>OR</b>	M4.04	U
XIV	Explain working of DSO with block diagram	M4.02	U

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