A23-2103230115A

Reg. No……………………
Signature …………………..

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

ELECTRONIC MEASUREMENTS & INSTRUMENTATION

[Maximum Marks: **75**]   [Time: **3** Hours]

PART-A

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

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1.	The degree of exactness of a measurement to expected value is called ...... ……of an instrument.	M1.01	R
2.	In single phase energy meter the retarding torque is generated by ………………system.	M1.04	R
3.	Name the grid on the display screen of an oscilloscope that comprises the horizontal and vertical axes.	M2.01	R
4.	…………... grid in CRT is kept at negative potential bias.	M2.01	U
5.	………….. instrument provides frequency domain view of signals.	M3.04	U
6.	In AC potentiometers the voltages being compared must be in equal …….... and	M3.01	U
7.	What is the use of wave analyser?	M3.04	R
8.	What is a load cell transducer?	M4.03	U
9.	The instrument used to display a time varying signal even after the original signal is removed is……………..	M4.04	R

PART-B

II. Answer any *eight* questions from the following. Each question carries *'three'* marks.

(8 x 3 = 24 Marks)

		Module Outcome	Cognitive level
1.	Define percentage of error in an instrument and write the expression to calculate the same.	M1.01	R
2.	Illustrate the conversion of Galvanometer into a Voltmeter.	M1.02	U
3.	Outline the gross errors of an instrument.	M1.01	U
4.	Show the construction diagram of PMMC instrument.	M1.03	R
5.	Show how the electrodynamometer can be used for both AC and DC measurement.	M1.04	U
6.	Summarize the necessity of aquadag used in CRT screens.	M2.01	U
7.	Explain any three applications of AC potentiometer.	M3.01	U
8.	Summarize any 3 applications of thermistors.	M4.03	U
9.	List any six selection criteria of a transducer.	M4.02	R
10.	Explain the working of Piezoelectric transducers.	M4.03	u

(6 x 7 = 42 Marks)

Module Outcome   Cognitive level

III.	Illustrate the construction and working of repulsion type radial vane moving iron instrument.	M1.03	U
	OR		
IV.	Summarize the working of digital multimeter with block diagram.	M1.04	U
V.	Explain the construction of CRT with a neat sketch.	M2.01	U
	OR		
VI.	Illustrate the measurement of phase difference between two signals using Lissajous patterns in CRO.	M2.03	U
VII.	Explain the bock diagram of Digital Storage Oscilloscope.	M2.04	U
	OR		
VIII.	Illustrate electrostatic focusing method used in CRT.	M2.01	U
IX.	Outline the method of Q factor measurement using Maxwell's bridge.	M3.01	U
	OR		
X.	Draw the block diagram of function generator and explain the functions of each block.	M3.03	U
XI.	State the working principle of Q meter . Explain the working of its practical circuit.	M3.04	U
	OR		
XII.	Explain how the slide wire potentiometer measure an unknown emf.	M3.01	U
XIII.	Explain the block diagram of strip chart recorder.	M4.04	U
	OR		
XIV.	Summarize the working of LVDT with suitable diagrams.	M4.02	U

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