DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2025

ELECTRONICS MEASUREMENTS AND 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.	Define gross error.	M1.01	R
2.	Name the instrument that can be used for both AC & DC measurement.	M1.03	R
3.	List the various probes used in CRO.	M2.03	R
4.	Illustrate the need of delay line in vertical section of CRO.	M2.02	U
5.	List any two application of bridges.	M3.02	R
6.	List two types of potentiometer for measuring unknown emf	M3.01	R
7.	Name the instrument used for measuring electrical properties of coils and capacitors.	M3.04	R
8.	Expand LVDT.	M4.03	R
9.	List any two characteristics of transducers.	M4.02	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.	Differentiate between analog and digital voltmeter.	M1.03	U
2.	List any six applications of CRO.	M2.03	R
3.	Explain the electrostatic focussing in CRT.	M2.01	U
4.	Describe the procedure for measurement of phase angle by lissajous pattern.	M2.03	U
5.	Explain any three features of DSO.	M2.04	U
6.	Define multiple trace CRO and write any two advantages of it over single trace CRO.	M2.02	R
7.	Draw the practical circuit diagram of Q meter.	M3.04	R
8.	Explain the working principle of piezo electric transducers.	M4.03	U
9.	Draw the diagram of load cell.	M4.03	R
10.	Draw the schematic diagram of strip chart recorder.	M4.04	R

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

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Explain the working of moving iron attraction type instrument with a neat diagram.	M1.03	U
	OR		
IV.	With the help of block diagram, explain the working of digital multimeter.	M1.04	U
V.	Explain the working of Electrodynamometer type wattmeter with a neat sketch.	M1.03	U
	OR		
VI.	Explain how galvanometer is converted into **a)** Ammeter **b)** Voltmeter.	M1.02	U
VII.	With a neat diagram, explain the working of dual trace CRO.	M2.02	U
	OR		
VIII.	Describe any two probes used in CRO with diagrams.	M2.04	U
IX.	Explain the working of spectrum analyser with a neat diagram	M3.04	U
	OR		
X.	Explain the procedure for measuring low resistance using Kelvin's double bridge.	M3.01	U
XI.	Explain the procedure for measuring unknown resistance using Wheatstone bridge.	M3.01	U
	OR		
XII.	Explain basic slide wire potentiometer and list any **3** applications.	M3.02	U
XIII.	Describe the following transducers **a)** Thermistor **b)** Strain gauge.	M4.03	U
	OR		
XIV.	Illustrate X-Y Recorder with a neat sketch.	M4.04	U

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