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(Revision-2021)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2026

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 1 mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	…… is the smallest absolute amount of change that can be detected by a measurement.	M1.01	R
2	Electro dynamo type instrument is generally used as a ……..	M1.04	R
3	List any two types of digital voltmeter.	M1.04	R
4	……. is the grid on the display screen of an oscilloscope that comprises the horizontal and vertical axes.	M2.01	U
5	Define electrostatic deflection sensitivity of CRO.	M2.01	U
6	A …….. is an instrument for measuring voltage by comparison of an unknown voltage with known reference voltage.	M3.01	U
7	Hay's bridge is used to measure inductance of ……Q.	M3.02	R
8	Passive transducers are based on the principle of …….	M4.01	R
9	Draw the circuit symbol of thermistor.	M4.03	R

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	Define accuracy and precision of an instrument.	M1.01	R
2	Draw the block diagram of dual trace CRO.	M2.02	R
3	Explain electrostatic focussing of CRO.	M2.01	U
4	List any six features of DSO.	M2.04	U
5	Describe the procedure for measurement of frequency using Lissajous patterns.	M2.03	U
6	List the applications of Wheatstone bridge.	M3.02	U
7	Draw the circuit of Kelvin double bridge.	M3.01	U
8	State the factors to be considered while selecting a transducer.	M4.02	U
9	Define thermistor. List the different types of thermistors.	M4.03	R
10	Explain the working principle of thermocouple.	M4.03	U

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Illustrate the working principle of an attraction type moving iron instrument.	M1.03	U
	OR		
IV	Explain the working of single-phase energy meter.	M1.04	U
V	Describe the working of ramp type digital volt meter.	M1.04	U
	OR		
VI	Explain the working of PMMC instrument with the help of suitable diagrams.	M1.03	U
VII	Draw the block diagram of DSO and explain its working.	M2.04	U
	OR		
VIII	Draw the block diagram of CRO and mention the functions of each block.	M2.02	U
IX	Explain resistance measurement using Wheatstone bridge.	M3.01	U
	OR		
X	Explain inductance measurement methods by using Hay's bridge.	M3.01	U
XI	Explain the working of Q meter with the help of its practical diagram.	M3.04	U
	OR		
XII	Describe the working of function generator.	M3.03	U
XIII	Explain the working of strain gauge with neat diagram.	M4.03	U
	OR		
XIV	Illustrate the working of strip chart recorder.	M4.04	U

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