TED (21) – 3034
(REVISION – 2021)

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Reg.No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2024

ELECTRICAL AND ELECTRONICS MEASURING INSTRUMENTS

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

PART - A

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

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1	Give one example for integrating type instruments.	M1.01	R
2	PMMC stands for	M1.03	R
3	Define ground fault in underground cables.	M2.02	R
4	Commercial unit of electrical energy is	M2.04	R
5	The bridge used for measuring capacitance is	M2.03	R
6	Write the function of the synchroscope in generating stations.	M3.01	R
7	Write the purpose of electron gun assembly in CRO.	M3.04	R
8	Transducer used for the measurement of displacement is	M4.02	R
9	List any two temperature sensors.	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	Explain air friction damping with the help of a neat sketch.	M 1.02	U
2	Classify measuring instruments(any three).	M 1.01	A
3	Describe the classification of resistances on the basis of ohmic value.	M 2.01	R
4	Explain voltmeter ammeter method of resistance measurement.	M2.01	U
5	Draw and label the parts of a hand-driven insulation tester.	M3.02	R
6	Describe rotating type phase sequence indicator.	M3.01	R

7	Describe the basic concept of smart energy meter.	M3.03	R
8	Distinguish between thermistor and thermocouple.	M4.02	U
9	Write any three characteristics of transducers.	M4.01	R
10	Draw the block diagram of Data acquisition system.	M4.04	R

PART - C

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

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	An ammeter having full-scale deflection of 0 to 5A and internal resistance of 2 Ω. Find out the value of (i) shunt resistance required to extend the range of the meter to 50A (ii) multiplying power of the shunt and draw the circuit arrangement.	M1.04	A
	OR		
IV	Draw the circuit arrangements to use a Moving Coil instrument which gives full scale deflection at 100 mV potential difference and 10 mA current as a Voltmeter of 0-250V.	M1.04	A
V	With a neat diagram explain the measurement of medium resistance by Wheat stone's bridge.	M2.01	U
	OR		
VI.	Explain the construction of an Electrodynamometer type wattmeter with a neat diagram.	M2.04	U
VII	Explain the working of Maxwell's inductance bridge with a neat diagram.	M2.03	U
	OR		
VIII	Explain the construction of a single-phase induction-type energy meter with the help of a neat diagram.	M2.04	U
IX	Illustrate the working of a reed-type frequency meter.	M3.01	U
	OR		
X	Explain the construction of an Earth Tester.	M3.02	U
XI	Explain the working of a single-phase dynamometer-type power factor meter.	M3.01	U
	OR		
XII	Draw and explain the block diagram of CRO.	M3.04	U
XIII	Explain ac tacho generator with a neat diagram.	M4.03	U
	OR		
XIV	Enumerate the classifications of transducers.	M4.01	U

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