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

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 precision of an instrument.	M1.02	R
2	List any two types of errors.	M1.02	U
3	SI unit of power and frequency.	M1.01	U
4	What are the two types of moving iron instruments?	M2.01	U
5	List any two advantages of digital multimeter.	M2.03	U
6	Name one DC bridge.	M3.01	U
7	Name a bridge that can be used for the measurement of inductance.	M3.01	U
8	State the functions of recorder.	M4.04	U
9	Name a recorder that can be used for recording the VI characteristics of electronic components.	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	Define sensitivity and repeatability of an instrument.	M1.02	R
2	Explain calibration. Which are the necessary steps in performing a calibration.	M1.02	A
3	Explain the difference between range and span.	M1.02	U
4	Write the expression for torque equation of PMMC instrument with explanation of terms.	M2.01	A
5	Explain the difference between moving coil and moving iron instrument.	M2.01	U
6	Illustrate the conversion of PMMC mechanism into voltmeter.	M2.02	U

7	Sketch the Schering bridge circuit diagram and write the expression for capacitance.	M3.01	U
8	Draw the circuit of Maxwell's bridge and write the equation of unknown inductance and resiostance.	M3.01	U
9	List the different parts of CRT?	M4.01	U
10	List any three advantages and disadvantages of LCD.	M4.03	U

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Draw and explain the block diagram of generalized instrumentation system.	M1.01	U
	OR		
IV	Illustrate three types of errors in an instrument.	M1.02	U
V	List seven fundamental qualities and their units in SI.	M1.01	U
	OR		
VI	Explain dynamic characteristics of an instrument.	M1.02	U
VII	Describe the working of PMMC galvanometer with neat diagram.	M2.01	U
	OR		
VIII	Explain the working of Digital multimeter with block diagram.	M2.03	U
IX	Explain unknown resistance measurement using Wheatsone's bridge.	M3.01	A
	OR		
X	Explain the working of Dynamometer type Wattmeter with neat Diagram.	M3.02	U
XI	Explain the working of DSO with block diagram.	M4.02	U
	OR		
XII	Explain in detail about strip chart recorder with neat diagram.	M4.04	U
XIII	Explain working of CRO with block diagram.	M4.01	U
	OR		
XIV	Explain working of X-Y recorder with diagram.	M4.04	U

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