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KAMALA INSTITUTE OF TECHNOLOGY & SCIENCE, SINGAPUR
23EE28PC402

II B. Tech II Semester Regular Examinations, June-2025

MEASUREMENTS AND INSTRUMENTATION

(EEE)

Time: 3 Hours

Max. Marks: 60

Note: Question paper consists of Part-A & Part-B.

i) **Part-A** for 10M, ii) **Part-B** for 50marks

- Part A** is compulsory, consists of 10 sub questions from all units carrying equal marks.
- Part-B** consists of **10 questions** (numbered from 2 to 11) carrying **10marks** each. From each unit there are 2 questions and the students should answer one of them. Hence the student should answer **5 questions** from **Part-B**.

PART-A		(10Marks)	
Q. No	Questions	Marks	BTL
1.a)	Define the terms Accuracy and Precision?	1	2
1.b)	List types of errors	1	3
1.c)	What is a potentiometer	1	1
1.d)	What is current transformer and errors in CT	1	2
1.e)	Write differences between double and three element dynamometers	1	3
1.f)	What is single phase energy meter	1	1
1.g)	Draw the circuit of Kelvins double bridge	1	2
1.h)	What is the use of maxwell's bridge	1	2
1.i)	Write different types of transducers	1	2
1.j)	List the applications of LVDT	1	3
PART-B		(50Marks)	
Q.No	Questions	Marks	BTL
2. a)	What is a Moving Iron Type Instrument? Explain its working	5M	2
b)	Derive the expression for the deflecting torque and control torque moving iron instrument.	5M	3
OR			
3. a)	Explain different types of Errors in measuring instruments	5M	2
b)	Describe in detail about Electrostatic and electrometer type Voltmeters	5M	3
4. a)	Discuss in detail the Principle and operation of D.C. Crompton's potentiometer	5M	3
b)	How unknown resistance is Measurement explain by using D.C. Crompton's potentiometer.	5M	3
OR			
5. a)	Explain the measurement of unknown current and voltages using suitable diagrams.	5M	3

b)	What is CT, PT, Phase angle errors in Transformers.	5M	2
6. a)	Compare double and three element dynamometer wattmeter.	5M	3
b)	Write short note on a) Three phase energy meter. b) tri-vector meter. c) maximum demand meters.	5M	2
OR			
7. a)	Derive the expression for deflecting and control torques of Single phase induction type energy meter.	5M	3
b)	Discuss about Single phase induction type energy meter error and compensations.	5M	2
8. a)	Write the Measurement of inductance using Maxwell's bridge.	5M	3
b)	Explain Method of measuring low, medium resistance using Wheat-stone's bridge	5M	2
OR			
9. a)	Describe the use of Wien's bridge and derive its bridge balance equation.	5M	3
b)	Explain about Hay's bridge with neat diagram	5M	2
10.a)	Write Principle operation of LVDT and capacitor transducers.	5M	2
b)	What is a Strain gauge and explain its principle of operation, gauge factor.	5M	2
OR			
11.a)	Describe in detail about Thermocouples types, advantages and applications.	5M	3
b)	Draw the block diagram of Cathode Ray Oscilloscope and explain	5M	2

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