Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

Mid - Term Examinations – October 2025

Date: 09-10-2025 **Time:** 09.30am to 11.00am

School: SOE	**Program:** B.Tech	
Course Code : EEE2032	**Course Name:** Electrical & Electronic Measurements and Instrumentation	
Semester: V	**Max Marks:** 50	**Weightage**: 25%

Instructions:

(i)

CO - Levels	CO1	CO2	CO3	CO4
Marks	18	32	0	0

Read all questions carefully and answer accordingly.

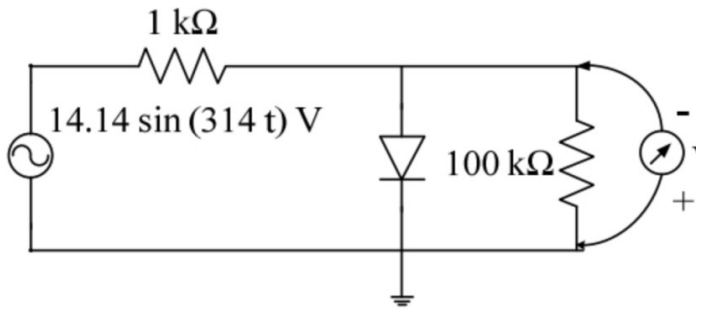
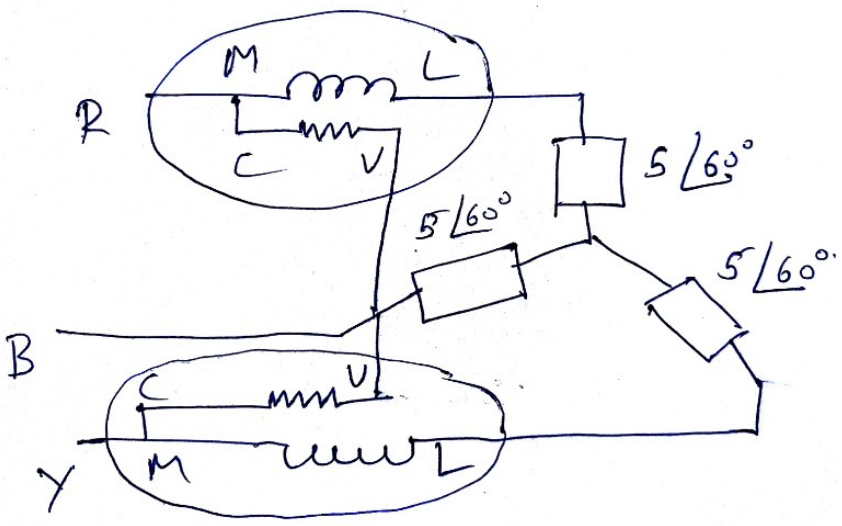
(ii) Do not write anything on the question paper other than roll number.

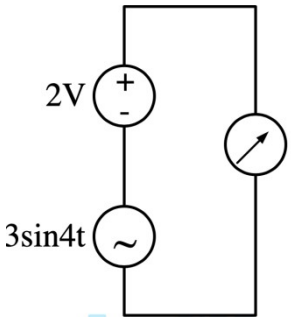
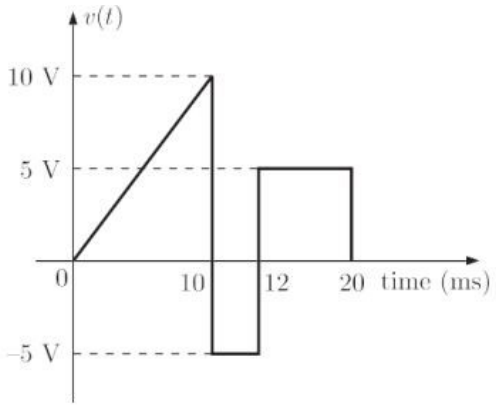
Part A

Answer ALL the Questions. Each question carries 2marks.				**2Mx5Q=10M**
1	What are the primary functional elements of a measurement instrument?	**2 Marks**	**L1**	**CO1**
2	Why is calibration important in measurement systems?	**2 Marks**	**L1**	**CO1**
3	What is the purpose of statistical evaluation in measurement data?	**2 Marks**	**L1**	**CO1**
4	Define the concept of hysterisis in meters.	**2 Marks**	**L1**	**CO2**
5	Recall the concept of True value and Measured value.	**2 Marks**	**L1**	**CO1**

Part B

Answer ALL Questions. Each question carries 10 marks.				**4QX10M=40M**
6.	Explain the concept of Multi-Range Ammeter and Voltmeter. How are these instruments designed to measure a wide range of currents and voltages?	**10 Marks**	**L2**	**CO1**

	or			
7.	Explain the different types of errors that can occur in measurement. Provide examples of systematic and random errors, and suggest methods to minimize them.	**10 Marks**	**L2**	**CO1**
8.	A resistance is measured by the voltmeter- ammeter method employing d.c. excitation and a voltmeter of very high resistance connected directly across the unknown resistance. If the voltmeter and ammeter readings are subject to maximum possible errors of 2.4% and and 1% respectively, then solve for the maximum possible percentage error in the value of resistance deduced from the measurement.	**10 Marks**	**L3**	**CO2**
	or			
9.	A PMMC voltmeter is connected across the 100 kohm resistance as shown in the figure below. Analyze the voltage waveform and magnitude of voltage displayed by the meter at the output by drawing the waveform. 	**10 Marks**	**L4**	**CO2**
10.	The line to line input voltage to a 3 phase 50 Hz star connected balanced AC circuit shown in figure below is 100 V and two watt meters are connected at the input which are indicated by the circled portion in the figure given below, interpret the wattmeter readings if the phase sequence is RYB? 	**10 Marks**	**L2**	**CO2**

	or			
11.	A Single phase wattmeter is used to measure the power supplied to an inductive load of magnitude 5 ohms and a phase of 36.86 degrees. A supply of 230 volts and 50 Hz is applied to the load. The current flowing through the load is stepped down using a 50/5 current transformer and the stepped down current is supplied to the current coil. The supply is connected directly to the potential coil.	**10 Marks**	**L2**	**CO2**
12.	A PMMC voltmeter is connected across the DC and AC supply as shown in the figure. Interpret the reading that would be displayed by the meter. 	**10 Marks**	**L2**	**CO2**
	or			
13.	A periodic voltage waveform observed on an oscilloscope across a load by an engineer as shown in figure below . A permanent magnet moving coil (PMMC) voltmeter has been connected across the same load. Interpret the reading of the voltmeter in volts by stating the reason for such reading. 	**10 Marks**	**L2**	**CO2**