

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fourth Semester

Electrical and Electronics Engineering

EE3403 - Measurements and Instrumentation

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	What are the basic functional elements of an instrument?	RE	1	2
2.	List out the different types of standards in an instrument.	RE	1	2
3.	How the measuring instruments can be classified?	RE	2	2
4.	Distinguish for example, the term "hysteresis"	AN	2	2
5.	Illustrate the features of ratio transformers that make them popular for bridge applications.	UN	3	2
6.	Outline the relationship between the bridge balance equation of the DC bridge and the AC bridge.	UN	3	2
7.	Compare sensor and transducer.	UN	4	2
8.	Classify any two applications of smart sensors.	UN	4	2
9.	What are gross errors?	RE	5	2
10.	Tell the different types of standards in an instrument.	RE	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

Q.No	Questions	BLT	CO	Marks
11.	a Summarize the static and dynamic characteristics of measuring instruments.	UN	1	13
	Or			
	b Classify the various classifications of instruments in detail.	UN	1	13
12.	a Build the construction and working of a permanent magnet moving coil Instrument and also derive the expression for deflection.	AP	2	13
	Or			
	b Construct the construction and its working principle of an electrodyamometer type wattmeter.	AP	2	13
13.	a Survey how the inductance is measured in terms of known capacitance using Maxwell's bridge.	AP	3	13
	Or			
	b Develop the construction of the wien bridge. Derive the unknown quantities at balance condition. Also write its advantages and disadvantages.	AP	3	13

14.	a i	Contrast the piezoelectric transducer? Explain its working with a neat diagram.	AN	4	8
	ii	Examine how to measure pressure using a capacitive type transducer.	AN	4	5
Or					
	b	Test in detail about the construction and working principle of LVDT.	AN	4	13
15.	a	Match in detail about the construction and working principle of DSO.	UN	5	13
	Or				
	b i	Explain the classification of standards in detail.	UN	5	7
	ii	Demonstrate the significance of calibration.	UN	5	6

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Simplify the construction details and working of megger.	AN	2	15
	Or				
	b	Discover in detail about the components, working, types, and applications of flow measurement.	AN	4	15