Q.P. Code: 19EC0416 **R19**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Regular Examinations December-2021

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Explain about static characteristics of measuring instrument.	L2	6M
	b	Explain the fundamental principle of AC voltmeter	L2	6M
		OR		
2	a	A shunt type ohmmeter uses a 5mA basis D'Arsonval movement with an internal resistance of 50Ω. The battery voltage is 3V. It is desired to modify the circuits by adding appropriate shunt resistance across the movement.so that the instrument indicates 5Ω at the midpoint scale. Calculate: i) The value of shunt resistance. ii) Value of current limiting resistance R1.	L6	6M
	b	Explain the process of Calibration.	L2	6M

UNIT-II

3	a	Discuss about important features of CRT.	L2	6M
	b	Draw the block diagram of a dual beam oscilloscope & explain its working.	L4	6M
		OR		
4	a	Explain with the help of block diagram, how the digital frequency and time period can be measured using counter/meter instrument.	L2	6M
	b	What are the different types of CRO probes?	L1	6M

UNIT-III

5	a	With a neat sketch explain the operation of arbitrary waveform generator.	L2	6M
	b	Describe the diagram with operation of a harmonic distortion analyzer using Wein Bridge and frequency selective type.	L2	6M
		OR		
6	a	With a neat diagram discuss the operation of a pulse generator.	L3	8M
	b	List the applications of random noise generator.	L1	4M

UNIT-IV

7	a	Derive an expression for Schering bridge circuit & write its applications.	L4	6M
	b	Explain any one ac bridges to measure unknown Inductance.	L3	6M

OR

8	a	Describe in detail about EMI &EMC with suitable examples.	L1	6M
	b	Write the operation of Kelvin Bridge and derive necessary equation	L3	6M

UNIT-V

9	a	What are the differences between the active & passive transducers?	L2	6M
	b	Explain the operation of potentiometric transducer	L2	6M

OR

10	a	With a neat sketch, explain the operation of piezo-electric transducers in detail.	L2	6M
	b	How to convert linear variable displacement into electrical voltage using transducer.	L2	6M

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