O.P.Code: 20EC0430	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. III Year I Semester Regular & Supplementary Examinations February-2024
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**	Define and explain the importance of the following terms i) Accuracy ii) Precision iii) Resolution iv) Sensitivity	**CO1**	**L2**	**8M**
	b	The expected value of the voltage across a resistor is 80 V. However, the measurement gives a value of 79 V. Calculate (i) Absolute error (ii) % Error (iii) Relative accuracy and (iv) % of Accuracy	**CO3**	**L3**	**4M**
		OR			
2	**a**	With the help of circuit diagram, describe the construction & working of a Shunt type Ohmmeter.	**CO6**	**L2**	**6M**
	b	With a neat sketch, explain about thermocouple type RF ammeter.	**CO2**	**L2**	**6M**
		UNIT-II			
3	**a**	Explain in detail the important features of CRT.	**L2**	**CO1**	**6M**
	b	What are the Standard Specifications of CRO?	**L1**	**CO1**	**6M**
		OR			
4	**a**	Explain the procedure of signal's Amplitude, Frequency and Phase measurement using a Lissajous method using neat diagrams.	**L2**	**CO2**	**6M**
	b	Describe in detail the construction and working of a Digital Storage Oscilloscope.	**L2**	**CO1**	**6M**
		UNIT-III			
5	**a**	Using a neat block diagram explain the operation of a function generator.	**CO4**	**L1**	**8M**
	b	List the Specifications of random noise generator.	**CO3**	**L1**	**4M**
		OR			
6	**a**	Explain the working principle of spectrum analyzer.	**CO3**	**L2**	**8M**
	b	Write the applications of spectrum analyzer	**CO3**	**L1**	**4M**
		UNIT-IV			
7		Describe the operation of the Wheatstone bridge and derive the expression for DC resistance.	**CO3**	**L3**	**12M**
		OR			
8	**a**	Discuss in detail about the working principle of Q-meter & its applications.	**CO4**	**L2**	**8M**
	b	Write the advantages and disadvantages of Q-meter.	**CO1**	**L1**	**4M**
		UNIT-V			
9	**a**	Define a transducer. What are the different types of Transducers?	**CO1**	**L1**	**6M**
	b	Write the advantages & disadvantages of LVDT.	**CO6**	**L1**	**6M**
		OR			
10	**a**	Explain in brief about Accelerometer Transducer.	**CO1**	**L2**	**6M**
	b	Explain the operation of thermistors and write its limitations.	**CO1**	**L2**	**6M**

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