Course Code: 1950443 Roll No: MLRS- R19

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

III B.Tech I Sem Supply End Examination, July 2022

Electronic Measurements and Instrumentation

(ECE)

Time: 3 Hours. **Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.
2. In Part – A, answer all questions which carries 20 marks.
3. In Part – B, answer any one question from each unit.
Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

1.	a)	Define speed of response and fidelity.	2M	CO1	BL1
	b)	How do you protect the meter from damages?	2M	CO1	BL1
	c)	Define and draw the basic wave analyzer.	2M	CO2	BL1
	d)	Construct T bridge network.	2M	CO2	BL1
	e)	Define active and passive CRO probes.	2M	CO3	BL1
	f)	Name the different types of storage CRTs.	2M	CO3	BL1
	g)	What is the purpose of Hotwire Anemometer?	2M	CO4	BL1
	h)	Brief about Magneto Strictive transducers.	2M	CO4	BL1
	i)	How to measure the force and velocity.	2M	CO5	BL1
	j)	What is signal conditioning? Why is it necessary in a DAS?	2M	CO5	BL1

PART- B

(10*5 Marks = 50 Marks)

2	a)	Explain the working of a true RMS voltmeter with the help of a suitable block diagram.	5M	CO1	BL4
	b)	Write short notes on Multimeters.	5M	CO1	BL1

OR

3		A set of independent current measurements were taken by six observers and were recorded as 12.8mA, 12.2mA, 12.5mA 13.1mA, 12.9mA and 12.4mA. Calculate (a) Arithmetic Mean (b) Deviation from the Mean (c) Average Deviation (d) Standard Deviation (e) Variance	10M	CO1	BL3
4	a)	Differentiate wave analyzer and harmonic distortion analyzer.	5M	CO2	BL2
	b)	Describe the working of Capacitance-Voltage meter.	5M	CO2	BL2

OR

5		Define waveform analyzer and explain in detail about frequency selective type wave analyzer with block diagram.	10M	CO2	BL4
6	a)	Why delay lines used in oscilloscopes? Explain.	5M	CO3	BL4
	b)	Distinguish between analog and digital storage oscilloscope.	5M	CO3	BL2
		OR			
7		With the help of a neat diagram, explain the operation and working of cathode ray oscilloscope.	10M	CO3	BL4
8	a)	What are the characteristics of transducer? Explain.	5M	CO4	BL4
	b)	A platinum resistance thermometer has resistance 22 Ω at 0 0C and 56 Ω at 100 0C. If its resistance is 73 Ω in a bath, find the temperature of the bath on the platinum resistance thermometer.	5M	CO4	BL3
		OR			
9		Derive the expression for gauge factor in strain gauge.	10M	CO4	BL6
10	a)	Distinguish between AC Bridges and DC Bridges.	5M	CO5	BL2
	b)	Determine the unknown resistance of Wheatstone bridge.	5M	CO5	BL3
		OR			
11		Explain the working of a Multi-channel DAS with block diagram.	10M	CO5	BL4

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