

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-GURUJADA VIZINAGARAM
III B. Tech I Semester Regular Examinations November -2025
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
(ECE)

Time: 3 hours

Max. Marks: 70

The Question paper consists of Part A & Part B.

Part A is compulsory, Answer all questions. Part B Answers any one question from each unit.

1		PART-A	(20Marks)
	a)	Define accuracy and precision in measurement systems	[2]
	b)	What is the function of a D'Arsonval movement?	[2]
	c)	List the applications of a true RMS voltmeter	[2]
	d)	Explain the term harmonic distortion	[2]
	e)	What is the use of a sweep frequency generator?	[2]
	f)	Draw the block diagram of a CRO	[2]
	g)	Differentiate between dual trace and dual beam CRO	[2]
	h)	Define strain gauge and its working principle	[2]
	i)	What is the principle of Wheatstone bridge?	[2]
	j)	List any two applications of LVDT	[2]
		PART-B	(50Marks)
		Question from Unit - I	
2	a)	Explain the static and dynamic characteristics of measuring instruments	[5]
	b)	Describe the operation and construction of a multimeter	[5]
		(OR)	
3	a)	Discuss different types of errors in measurement systems with examples	[5]
	b)	Explain the extension of range in voltmeters and ammeters	[5]
		Question from Unit - II	
4	a)	Explain the working and applications of a spectrum analyzer	[5]
	b)	Describe the operation of an RF signal generator with a neat diagram	[5]
		(OR)	
5	a)	Explain different types of function generators and their applications	[5]
	b)	Discuss harmonic distortion and its measurement techniques	[5]
		Question from Unit - III	
6	a)	Explain the block diagram and working of a CRO	[5]
	b)	Discuss the measurement of time, period, and frequency using CRO	[5]
		(OR)	
7	a)	Describe the operation of a digital storage oscilloscope	[5]
	b)	Explain the construction and working of a sampling oscilloscope	[5]
		Question from Unit - IV	
8	a)	Classify transducers and explain the working of a strain gauge	[5]
	b)	Explain the construction and working of an LVDT	[5]
		(OR)	

9	a)	Explain the principle of piezoelectric and thermocouple transducers	[5]
	b)	Discuss the working of a digital temperature sensing system	[5]
		Question from Unit - V	
10	a)	Explain the construction and working of a Maxwell bridge	[5]
	b)	Describe various methods used for pressure measurement	[5]
		(OR)	
11	a)	Discuss the working of a Kelvin bridge for low resistance measurement	[5]
	b)	Explain data acquisition systems and their importance	[5]
