

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
III B. Tech I Semester Regular/Supplementary Examinations, April/May -2025
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
 (ECE)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I			
1.	a)	With neat sketches explain the working of PMMC meter	[7M]
	b)	Discuss briefly about the static characteristics of measurement systems.	[7M]
(OR)			
2.	a)	Discuss different classification of errors and explain in detail.	[7M]
	b)	Explain basic operation in detail about Ohmmeters series type, and shunt type with sketches.	[7M]
UNIT-II			
3.	a)	Discuss the working principle of harmonic distortion analyzer in detail. b) Define a Wave Analyzer and list its types.	[7M]
	b)	Define a Wave Analyzer and list its types.	[7M]
(OR)			
4.	a)	Discuss the working principle of random noise generator in detail.	[7M]
	b)	Explain different applications of Digital Fourier Analyzers?	[7M]
UNIT-III			
5.		An electrical deflected CRT has a final anode voltage of 1000V and parallel deflecting plates of 1.5cm long and 5mm apart. If the screen is 50cm from the centre of the deflecting plates. Find: (i) Beam speed (ii) Deflection sensitivity of the tube (iii) Deflection factor of the tube. b) Discuss the difference between analog storage oscilloscope and digital storage oscilloscope.	[14M]
(OR)			
6.	a)	Briefly explain the modes of operation of digital storage oscilloscope.	[7M]
	b)	Explain in detail the measurement of frequency by Lissajous method.	[7M]
UNIT-IV			
7.	a)	Describe the method of measuring high impedance using Q-meter.	[7M]
	b)	Explain how the unknown frequency is measured using Wein's bridge method.	
(OR)			
8.	a)	Explain in detail about the circuit of Kelvin double bridge used for measurement of low resistance.	[7M]
	b)	An AC bridge has the following constants: <ul style="list-style-type: none"> -Arm AB- Capacitor of 0.5 μF in parallel with 1 resistance. -Arm AD- resistance of 2 . -Arm DC- Capacitor of 0.5 μF. -Arm CD- Unknown Cx and Rx in series, frequency 1 kHz. Determine the unknown capacitance and dissipation factor.	[7M]
UNIT-V			
9.	a)	Discuss in detail about the working of capacitive transducers.	[7M]
	b)	What is Piezo-electric effect? Discuss the operation of Piezoelectric transducer.	[7M]
(OR)			
10.	a)	Explain the working of LVDT with neat sketches.	[7M]
	b)	Describe the working of resistance thermometers.	[7M]
