Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (NEW) EXAMINATION – SUMMER 2024

Subject Code:3131706 Date:29-06-2024

Subject Name:Measurement and Instruments

Time:10:30 AM TO 01:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	Compare Accuracy & Precision.	**03**
	(b)	Differentiate Indicating and Recording Instruments with examples.	**04**
	(c)	Explain Various types of Errors in Measurement.	**07**
Q.2	**(a)**	Explain LCD Display.	**03**
	(b)	Explain Analog DC Ammeters.	**04**
	(c)	Explain Electromechanically meter movement with necessary diagram.	**07**
		OR	
	(c)	What is Loading effect? Explain its elimination.	**07**
Q.3	**(a)**	Compare Oscilloscope vs Meter.	**03**
	(b)	Draw and Explain Cathode Ray Tube (CRT).	**04**
	(c)	Explain Vertical Deflection System of CRO.	**07**
		OR	
Q.3	**(a)**	Explain Electronic Timers.	**03**
	(b)	Draw the Lissajous Pattern using CRO in XY Mode for frequency measurement of 2:1, 3:1, 3:2 and 4:1.	**04**
	(c)	Explain Digital Storage Oscilloscope (DSO) with its block diagram.	**07**
Q.4	**(a)**	Explain Power and Energy in brief.	**03**
	(b)	Explain Zero Beat Frequency Meter.	**04**
	(c)	Explain Harmonic Analysis and Spectrum Analyzers	**07**
		OR	
Q.4	**(a)**	Explain Potential Transformer application.	**03**
	(b)	Explain Single Phase power Measurement technique with necessary diagrams.	**04**
	(c)	Explain Kelvin's double bridge method for low resistance Measurement.	**07**
Q.5	**(a)**	Explain 20 mA Current loop.	**03**
	(b)	Explain Maxwell Bridge with its Diagrams.	**04**
	(c)	Explain Inductive interference and shielding.	**07**
		OR	
Q.5	**(a)**	Explain Pulse Generators	**03**
	(b)	Explain Anderson Bridge with its Diagrams.	**04**
	(c)	Explain ground loop interference and input guarding to reduce the internal noise.	**07**

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