

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020

Subject Code:2141003**Date:15/02/2021****Subject Name:Electronics Measurement and Instrumentation****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Define: (1) Expected value (2) Error (3) Resolution	03
	(b) Describe Gross errors in detail.	04
	(c) Describe international standards and working Standards.	07
Q.2	(a) A Maxwell bridge is used to measure inductive impedance. The Bridge constants are : C1=0.01 μ F,R1=470k Ω ,R2=5.1k Ω and R3=100k Ω Find the equivalent of the unknown impedance.	03
	(b) Derive the equation for unknown resistance in Wheatstone Bridge.	04
	(c) Draw the circuit diagram of Schering's Bridge and derive the equation for R _x and C _x .	07
Q.3	(a) Why we use CRO?	03
	(b) Just draw the block diagram of dual trace oscilloscope.	04
	(c) Draw the structure of basic elements of storage Mesh CRT and explain its working principle.	07
Q.4	(a) Just draw the block diagram of standard signal generator.	03
	(b) Explain unbonded resistance wire strain gauge.	04
	(c) With diagram explain working of Piezo electrical Transducer.	07
Q.5	(a) What are the advantages of Thermistor?	03
	(b) Just draw the block diagram of sweep generator.	04
	(c) Explain the working principle of an inductive transducer and derive the equation for self inductance.	07
Q.6	(a) What are the disadvantages of LVDT?	03
	(b) What are the advantages of LVDT?	04
	(c) With diagram and waveforms explain the working principle of spectrum analyzer in detail.	07
Q.7	(a) Explain the working of basic wave analyzer with diagram.	03
	(b) Just draw the diagram of digital storage oscilloscope.	04
	(c) Explain the working of harmonic distortion analyzer using bridged T-network with diagram.	07
Q.8	(a) What are the objectives of a DAS (Data Acquisition System)?	03
	(b) Write a short note on resistance temperature detector (RTD).	04
	(c) With diagram explain Multi channel data acquisition system.	07
