

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- IV EXAMINATION – SUMMER 2020****Subject Code: 2141003****Date: 28/10/2020****Subject Name: ELECTRONICS MEASUREMENT AND INSTRUMENTATION****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.

		MARKS
Q.1	(a) What is error in measurement? List types of the errors.	03
	(b) Compare primary and secondary standards.	04
	(c) Draw and explain Wheatstone Bridge with necessary derivations.	07
Q.2	(a) Give difference between Accuracy and Precision.	03
	(b) What is calibration of an instrument? Give some steps to calibrate instrument.	04
	(c) Draw and explain Maxwell's Bridge with necessary derivations.	07
	OR	
	(c) Draw and explain Kelvin double arm bridge with necessary derivations.	07
Q.3	(a) Why delay line is used in CRO? Explain in short.	03
	(b) Draw block diagram to generate sine wave in laboratory.	04
	(c) With the help of block diagram, describe the working of spectrum analyzer.	07
	OR	
Q.3	(a) Why sample and hold is used in data acquisition system? Justify your answer.	03
	(b) What is Hall effect? Give its applications.	04
	(c) Explain Digital Storage Oscilloscope with its block diagram.	07
Q.4	(a) What is grounding and shielding?	03
	(b) Compare Single Channel and Multichannel DAS.	04
	(c) Explain strain gauge with necessary diagram and its application.	07
	OR	
Q.4	(a) List selection criteria for transducer.	03
	(b) List isolation techniques. Explain any one.	04
	(c) Explain Thermocouple with diagram and application.	07
Q.5	(a) To measure time period of sine wave suggest a method.	03
	(b) List advantages of electronic measurement.	04
	(c) Explain working of sweep generator with necessary diagram.	07
	OR	
Q.5	(a) What is signal conditioning? Why it is required?	03
	(b) Give any two techniques to generate square wave.	04
	(c) Describe LVDT with its construction, working and application.	07
