

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023

Subject Code:2141901**Date:17-07-2023****Subject Name:Mechanical Measurement & Metrology****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) Explain least count in metrology. How to find it for normal vernier calliper?	03
	(b) Write a note on slip gauge.	04
	(c) Write a note on Linear variable differential transducers.	07
Q.2	(a) Define Calibration and give suitable example of it.	03
	(b) Explain Liquid in glass Thermometer.	04
	(c) What you mean by error in measurement process? Explain various types of errors	07
	OR	
	(c) Explain the construction and working of strain gauge. Give its applications.	07
Q.3	(a) What is a 'Peltier effect' in thermocouple?	03
	(b) Describe working of radiation pyrometer.	04
	(c) What is dynamometer? Classify it. Explain any one type of dynamometer.	07
	OR	
Q.3	(a) Compare RTD and thermistors.	03
	(b) Explain construction and working of piezoelectric accelerometer.	04
	(c) Explain the principles and types of thermocouples.	07
Q.4	(a) Draw only a neat sketch of Gear tooth vernier.	03
	(b) Distinguish between primary texture and secondary texture of surface.	04
	(c) Write a note on the Parkinson Gear Tester.	07
	OR	
Q.4	(a) What is Accuracy and precision in metrology?	03
	(b) Explain two wire method for Screw thread Measurement.	04
	(c) Describe the construction and working of Tomlinson surface roughness tester with neat sketch.	07
Q.5	(a) Explain characteristics of surface texture.	03
	(b) What is optical square? Explain their working principle.	04
	(c) Explain the construction and working of Johansson Mikrokator with neat sketch.	07
	OR	
Q.5	(a) Draw a sketch describing gear tooth terminology.	03
	(b) Explain Sigma Comparators with neat sketch.	04
	(c) Explain the construction and working of profile projector with neat sketch.	07
