

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2021****Subject Code: 2142503****Date:03/09/2021****Subject Name: Metrology and Measurement****Time:02:30 PM TO 05:00 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) Define instruments. Give classification of instruments.	03
	(b) Write a detail note on LVDT.	04
	(c) Discuss vernier micrometer with neat sketch.	07
Q.2	(a) Explain calibration of slip gauges.	03
	(b) Give the difference between threshold and resolution.	04
	(c) Enlist different types of micrometers. Explain inside micrometer with neat sketch.	07
OR		
Q.3	(c) Discuss vernier micrometer with neat sketch.	07
	(a) Explain Profilometer with sketch.	03
	(b) Explain Proving ring with neat sketch.	04
	(c) Explain resistance temperature detectors (RTD) with neat sketch.	07
OR		
Q.3	(a) Give classification of linear measuring instruments.	03
	(b) Explain optical bevel protractor.	04
	(c) Write a detail note on auto collimator.	07
Q.4	(a) What are advantages of electrical transducer compare to mechanical transducers?	03
	(b) Explain angle dekkor with neat sketch and also its applications.	04
	(c) Explain calibration procedure of vernier caliper and micrometers.	07
OR		
Q.4	(a) Describe the methods of checking the angle of taper hole.	03
	(b) Discuss necessity and objective of metrology.	04
	(c) Discuss Prony brake dynamometer with neat sketch.	07
Q.5	(a) What is the rosette? Why it is used?	03
	(b) Discuss gear tooth vernier caliper with neat sketch.	04
	(c) Why comparator is required? Give characteristics of good comparator. Write application of comparators.	07
OR		
Q.5	(a) Explain principles and types of thermocouples.	03
	(b) What is a load cell? State various types of load cells and their use.	04
	(c) Explain optical pyrometer with neat sketch. Write its advantages and disadvantages.	07
