

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code:2142503****Date:09/02/2021****Subject Name:Metrology and Measurement****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) Explain the objectives of measurement in brief.	03
	(b) Describe the difference between accuracy and precision with neat sketch.	04
	(c) Explain the generalized measurement system with neat sketch.	07
Q.2	(a) Enlist different types of errors occur during measurement.	03
	(b) Enlist the direct and indirect measuring instruments.	04
	(c) What is the Load Cell? State various types of load cells and their use. Explain any one of them with neat sketch.	07
Q.3	(a) Enlist different linear measuring instruments.	03
	(b) Enlist the different types of Vernier calipers.	04
	(c) Draw Vernier caliper with neat sketch, nomenclature and working principle.	07
Q.4	(a) Enlist different angular measuring instruments.	03
	(b) What is the function of bevel protector?	04
	(c) Draw Sine bar with neat sketch, nomenclature and working principle.	07
Q.5	(a) Enlist the different types of gears.	03
	(b) Explain the least count of Vernier caliper and micrometer.	04
	(c) Explain the Gear Tooth Vernier caliper with neat sketch.	07
Q.6	(a) Enlist the different types of threads with neat sketch.	03
	(b) What is thread gauge?	04
	(c) Enlist thread measuring instruments. Explain Two wire method with neat sketch.	07
Q.7	(a) Enlist different types of comparators.	03
	(b) What are the factors affecting rough surface generation during machining process.	04
	(c) Enlist the surface roughness measurement instruments. Explain any one of them with neat sketch.	07
Q.8	(a) What is the function of Radiation Pyrometer?	03
	(b) Explain thermistor with advantages and disadvantages.	04
	(c) Explain working principle of Thermocouples with neat sketch.	07
