

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023****Subject Code:3141901****Date:07-07-2023****Subject Name:Mechanical Measurement and 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 role of measurement in Production Engineering.	03
	(b) Explain the difference between accuracy and precision with neat sketch.	04
	(c) Enlist types of measuring errors occur during measurement. Explain any three of them with neat sketch	07
Q.2	(a) Enlist different types of measurement.	03
	(b) Explain the role of “Slip gauge” in measurement.	04
	(c) Write a short note on “Generalized measurement System”	07
OR		
	(c) Explain in brief, “Thermo couple” with neat sketch.	07
Q.3	(a) Enlist different Angular measuring instruments.	03
	(b) Explain the difference between ‘Hole base System’ and ‘Shaft base system’ with neat sketch.	04
	(c) Write a short note on Sine bar.	07
OR		
Q.3	(a) Sine bar instrument is working on which principle?	03
	(b) Enlist types of linear measuring instruments.	04
	(c) What is the function of Dynamometers? Enlist different types of Dynamometers and Explain any one of them with neat sketch	07
Q.4	(a) Write down a full form of “LASER”.	03
	(b) Enlist different types of threads and type of thread measuring instruments.	04
	(c) Enlist different types of comparators. Explain any one of them with neat sketch.	07
OR		
Q.4	(a) Define Tolerance. Why Tolerance provided during design of product?	03
	(b) What is the function of Bevel protector?	04
	(c) Explain working principle of Thermometer with neat sketch.	07
Q.5	(a) Enlist the temperature measuring instruments.	03
	(b) What is the function of Radiation Pyrometer?	04
	(c) Write a short note on “Coordinate Measuring Machines”.	07
OR		
Q.5	(a) Enlist types of Gear measuring instruments.	03
	(b) Write short note on “Tool makers Microscope”.	04
	(c) Write short note on Dial Indicator with neat sketch.	07
