

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V EXAMINATION – WINTER 2025****Subject Code:3151708****Date:21-11-2025****Subject Name:Measurement in industry****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) Define displacement, force and acceleration	03
	(b) Define weight, torque, speed and humidity	04
	(c) Explain in detail displacement measurement using ultrasonic transducer.	07
Q.2	(a) Explain in detail pneumatic transducer for displacement measurement	03
	(b) Define Stress and strain. State the equation of gauge factor and state its significance in measurement.	04
	(c) Explain in detail LVDT	07
OR		
Q.3	(c) Explain in detail RVDT	07
	(a) What is tachometer? Explain incremental type of tachometer	03
	(b) Explain ballast circuit for measuring resistances	04
	(c) Classify resistive strain gauge on the basis of construction and material in detail.	07
OR		
Q.3	(a) Explain magnetostrictive transducer for displacement measurement	03
	(b) Explain current injection method for measuring resistances	04
	(c) Explain in detail ways to compensate the effects of temperature while strain measurement	07
Q.4	(a) Explain principle of acceleration measurement	03
	(b) Explain force measurement using proving ring	04
	(c) State different types of conveyor belt weighing and explain any one in detail	07
OR		
Q.4	(a) Explain piezo-resistive accelerometer	03
	(b) Explain in detail fly-ball tachometer	04
	(c) Explain in detail air bubbler method for density measurement	07
Q.5	(a) What is pH? How can pH be measured manually by indicators?	03
	(b) State two points each of advantages and disadvantages of capacitive hygrometer	04
	(c) Explain in detail deflection type paramagnetic oxygen analyzer	07
OR		
Q.5	(a) State various units of turbidity	03
	(b) Explain chromatography	04
	(c) Explain in detail magnetic wind type paramagnetic oxygen analyzer	07
