Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3151708 Date:01/02/2021

Subject Name:Measurement in industry

Time:10:30 AM TO 12:30 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)**	Define the Proximity sensor.	**03**
	(b)	Explain with sketch about Flapper Nozzle arrangement.	**04**
	(c)	Explain Resistive Transducer for Displacement Measurement.	**07**
Q.2	**(a)**	Compare bonded and unbonded strain gauge.	**03**
	(b)	Explain the working principle of Load Cell with sketch.	**04**
	(c)	Explain humidity measurement technique with necessary diagram.	**07**
Q.3	**(a)**	Explain industrial need of pH measurement.	**03**
	(b)	Explain Turbidity Measurement in Detail.	**04**
	(c)	Explain in detail about LVDT with necessary diagram and its application.	**07**
Q.4	**(a)**	Explain Hair Hygrometer with necessary diagram	**03**
	(b)	What are the advantages of Fiber Optic Strain Gauges? Explain any one type in detail.	**04**
	(c)	Explain Gas Chromatography.	**07**
Q.5	**(a)**	Explain the measurement Redwood viscometer with necessary equation.	**03**
	(b)	Explain Pneumatic type displacement transducer in detail with diagram.	**04**
	(c)	Define the viscosity with necessary equation and discuss Newtonian and non-Newtonian behavior of Various fluids.	**07**
Q.6	**(a)**	Explain Bubbler system for Density measurement.	**03**
	(b)	Explain Foil type and Semiconductor type Strain Gauges with diagram	**04**
	(c)	Explain working principle of Flame Photometer.	**07**
Q.7	**(a)**	Define the following terms. 1) Strain 2) Shear thickening	**03**
	(b)	Explain working principle of Mass Spectrometer.	**04**
	(c)	Differentiate Thermal, Capacitive and Piezo- resistive, accelerometers	**07**
Q.8	**(a)**	Explain Conductivity Measurement.	**03**
	(b)	Explain ORP Methods.	**04**
	(c)	Explain Optical Pulse Tachometer transducer for speed measurement	**07**

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