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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
