Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2021

Subject Code:3151708 Date:27/12/2021

Subject Name:Measurement in industry

Time:02:30 PM TO 05:00 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 Resistive type displacement transducer.Draw linear and angular resistive displacement transducer.	**03**
	(b)	Explain in detail about LVDT with necessary diagram and its application	**04**
	(c)	Explain Strain. Derive the expression of Gauge Factor for Strain Measurement.	**07**
Q.2	**(a)**	Explain Wire Wound type Strain Gauges	**03**
	(b)	Explain Eddy current Proximity sensor with neat diagram	**04**
	(c)	Explain Gas Chromatography	**07**
		OR	
	(c)	Explain Different types of Reference and Measuring Electrodes for pH Measurement in detail.	**07**
Q.3	**(a)**	Explain Thermal Conductivity detector in detail with diagram	**03**
	(b)	Explain the basic components of mass Spectrometer.	**04**
	(c)	Explain Tachometer, Incremental and Absolute type digital displacement transducers.	**07**
		OR	
Q.3	**(a)**	Explain Hydraulic load cell.	**03**
	(b)	Explain flame ionization detector with its basic principle	**04**
	(c)	Define Density. What are the different methods of Density measurement? Explain any one method	**07**
Q.4	**(a)**	Explain Proving Ring in detail	**03**
	(b)	Explain the piezoelectric accelerometer with neat diagram.	**04**
	(c)	Explain Infrared Analyzers in detail	**07**
		OR	
Q.4	**(a)**	Compare bonded and unbonded strain gauge.	**03**
	(b)	Explain Hair Hygrometer with necessary diagram.	**04**
	(c)	What is para-magnetism? Explain paramagnetic oxygen analyzer in detail.	**07**
Q.5	**(a)**	Explain ORP Measurement Method in detail	**03**
	(b)	Explain Geiger Muller Counter in detail	**04**
	(c)	Explain principle, working and construction of Wet and Dry bulb type hygrometer.	**07**
		OR	
Q.5	**(a)**	Explain Ostwald Viscometer in detail with neat diagram	**03**
	(b)	Explain Optical Pulse Tachometer transducer for speed measurement	**04**
	(c)	Explain the detail of industrial weighing system	**07**

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