GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V(OLD) EXAMINATION – SUMMER 2019

Subject Code:150302   **Date:10/06/2019**

Subject Name:Biomedical Transducers

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.

Q.1	**(a)**	Explain Displacement measurement using LVDT.	**07**
	(b)	Give Farad's law of Electromagnetic Induction & Explain Blood Flow measurement using Electromagnetic Transduction.	**07**
Q.2	**(a)**	Explain Photoconductive & Photovoltaic Transduction Phenomena.	**07**
	(b)	Define Transducer. & Explain various Static Characteristics of Transducers for measurement.	**07**
		OR	
	(b)	Define Measurand & Explain basic Block Diagram of General Measurement System.	**07**
Q.3	**(a)**	What is Piezoelectric Phenomena? Enlist various natural & Artificial Piezocrystals & Explain any one application of Piezoelectric Transducer.	**07**
	(b)	Explain Resistive Transduction Phenomena for Temperature measurement & Describe Thermistor as Temperature Transducers.	**07**
		OR	
Q.3	**(a)**	Enlist different Pressure Transducers & Explain Construction & working of Strain Gauge as Pressure Transducers.	**07**
	(b)	Write a Short Note on Blood Flow measurement using Ultrasonic Transducers.	**07**
Q.4	**(a)**	Define Ionization. Explain Ionization Chamber as Radiation Detector.	**07**
	(b)	Enlist Different types of Electrodes used for ECG & EEG & explain Construction & working of Needle & wire Electrodes.	**07**
		OR	
Q.4	**(a)**	Explain Construction and working of Scintillation Detector.	**07**
	(b)	Explain blood pressure measurement using Sphygmomanometer.	**07**
Q.5	**(a)**	What is Conductometry? Explain Conductivity sensors.	**07**
	(b)	Write a Short note on Smart Sensors.	**07**
		OR	
Q.5	**(a)**	Describe po2 Measurement using Polarographic Clark Electrode.	**07**
	(b)	What is Function of gelly during Biopotential measurement? Explain Electrode Electrolyte interface with necessary diagram.	**07**

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