Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC- SEMESTER– VII• EXAMINATION –SUMMER-2015

Subject Code: X71106 **Date:14/05/2015**

Subject Name: BIOMEDICAL INSTRUMENTATION

Time:2:30 PM to 5:00 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)**	Draw only block diagram of Man-instrument system and also explain the physiological system named (a) The Biochemical system, (b) The Cardiovascular System.	**07**
	(b)	Define Action and Resting Potential and also write in brief about the Bioelectric potentials called EEG, ECG and EMG.	**07**
Q.2	**(a)**	Define Electrodes and Write about Body Surface Electrodes with appropriate diagrams.	**07**
	(b)	What is the difference between active and passive transducers? Explain force transducers for biomedical applications with necessary diagrams.	**07**
		OR	
	(b)	Define Cardiovascular System and write about basic functioning of cardiovascular circulation.	**07**
Q.3	**(a)**	Explain in detail about heart sound and, How we can able to find diseases related to heart using heart sound?	**07**
	(b)	Specify the types of blood pressure measurement techniques. How to measure blood pressure using sphygmomanometer? Explain in detail	**07**
		OR	
Q.3	**(a)**	For blood flow measurement, How the “Plethysmography” technique is useful? Describe in detail with diagram.	**07**
	(b)	Explain in detail about Pace Maker Machine for Heart.	**07**
Q.4	**(a)**	Write about any one of the Machine use to get the ECG.	**07**
	(b)	What do you mean by Computed Tomography (CT) scan? Explain the working principal of it.	**07**
		OR	
Q.4	**(a)**	Explain in detail about X-Ray System with proper block diagram.	**07**
	(b)	Draw and Explain The Block diagram of the Bio-Telemetry System.	**07**
Q.5	**(a)**	Write the use of Telemetry in Patient Care.	**07**
	(b)	Define Electric Shock and Write various physiological effect of Electrical current on human body.	**07**
		OR	
Q.5	**(a)**	For patient Monitoring system, Explain the pulse rate monitoring system.	**07**
	(b)	Explain the use of Microprocessors Applications in Patient Monitoring.	**07**

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