Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE, SEMESTER-VIII • EXAMINATION-SUMMER 2015

	•	Code: 180803 Date:05/05/2015 Name: BIOMEDICAL INSTRUMENTAION	5
Ti	_	0:30 AM to 1:00 PM Total Marks: 70	0
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	Give the basic introduction of Respiratory system of the human body. Write a difference between Active and Passive sensors and also write about medical surface electrodes.	
Q.2	(a) (b)	Explain with diagram, the blood circulatory system of the human body. Write in detail about Temperature Transducers. OR	07 07
	(b)	Describe with circuit diagram, Isolation Amplifiers.	07
Q.3	(a)	Explain in detail with circuit diagram, Multiple input circuit amplifiers for the Bioelectric Amplifiers.	07
	(b)	What is the use of ECG machine? Write about the ECG measurement standard lead technique.	07
Q.3	(a)	OR Draw and Explain the Block diagram of X-Ray Machine.	07
Q.	(b)	Which two types of Blood pressures can be measured for human body? Explain both with proper diagrams.	07
Q.4	(a)	How Blood flow measurement is useful for the problems finding related to heart? Explain in detail "Plethysmography".	07
	(b)	Draw and Explain Portable Telemetry system. OR	07
Q.4	(a) (b)	Explain ICU/CCU central monitoring system with proper diagram. Write an overview of clinical instrumentation.	07 07
Q.5	(a) (b)	What do you mean by "Spectrophotometer"? Explain in detail. Define Doppler effect and also explain Transcutaneous Doppler flow detectors. OR	07 07
Q.5	(a) (b)	Write about the Physics of sound and Ultrasound waves. Write all the electric safety precautions to avoid the electric shock hazards.	07 07
