## **GUJARAT TECHNOLOGICAL UNIVERSITY**

ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2/23113 Date: 02/00 Subject Name: Introduction to Biomedical Engineering		/2016	
Time: 10:30 am to 01:00 pm  Instructions:  Total Marks:			70
11130	1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	Write a short note on cell and its structure. Explain structures of nervous system in human body.	07 07
Q.2	(a) (b)	Write a brief note on electrical activity of cardiovascular system.  Explain basic components of Biomedical Systems.  OR	07 07
	(b)	Explain basic concepts of fiber optic temperature sensor with necessary schematic diagram.	07
Q.3	(a)	Draw and explain structure of electrodes used for physiological parameter acquisition.	07
	(b)	What is the need of Isolation amplifier? Explain any one type of isolation amplifier.	07
Q.3	(a) <b>(b)</b>	OR Explain Lead systems of ECG recording. Write an introductory note on Electrical safety in medical environment.	07 07
Q.4	(a) (b)	Explain indirect method of Blood pressure measurement.  Define pH. Explain blood pH measurement technique.  OR	07 07
Q.4	(a) (b)	Explain basic concepts of Computed tomography for 3D data acquisition.  Enlist characteristics of Ultrasound wave. Explain Amplitude mode of Ultrasonography.	07 07
Q.5	(a)	What is the need of telemetry system in biomedical field? Explain types of biotelemetry systems.	07
	(b)	In which type of patient condition pacemaker is used? Explain working of synchronous type pacemaker.	07
Q.5	(a)	OR Write brief note on all components of Audiometers.	07
Z.0	(b)	Write a short note on Lithotripsy.	07

\*\*\*\*\*