Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (OLD) - EXAMINATION – SUMMER 2017

Sı	ıbjec	et Code: 171705 Date: 29/04/20	17
	-	t Name: Instrumentation for Bio Medical Application	
		02:30 PM to 05:00 PM Total Marks:	70
Ins	2	ions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	
Q.1	(a)	Explain the generation of bioelectric potential in human body. Explain acting and resting potential with necessary wave form and with action of polarization and depolarization of cell.	07
	(b)	Draw and describe the function of human heart. Obtain and draw its electrical activity on graph.	07
Q.2	(a)	Discuss the characteristic of bio-medical amplifier. Explain the operation, schematic and application of chopper stabilized amplifier.	07
	(b)	How many noises will be considered in biological instrumentation? Explain each in details.	07
	(b)	OR List the error which accounted in physiological parameter measurement. Explain how it will nullify from the measurement.	07
Q.3	(a)	Explain in detail structure and function of the central nervous system	07
	(b)	Explain medical surface electrodes in detail. OR	07
Q.3	(a)	Explain Multichannel EEG recording system in detail with necessary diagram.	07
	(b)	Explain Microelectrodes with necessary diagram	07
Q.4	(a)	What is Einthoven triangle? Brief about standard ECG lead systems.	07
	(b)	Explain hemo-dialysis machine in detail with necessary diagram. OR	07
Q.4	(a) (b)	Explain types of pacemakers in detail. Differentiate ICU versus ICCU equipment. Give the explanation of patient monitoring system for 8 bed unit.	07 07
Q.5	(a) (b)	Write a short note in intermittent positive pressure breathing therapy Explain ultrasonic blood pressure measurement system with block diagram.	07 07
Q.5	(a)	OR What is fibrillation? Describe DC defibrillator in details.	07
	(b)	Explain Electromagnetic blood flow meters in detail.	07
