Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2713108 Date:17/05/		2016	
	•	Name: Medical Instrumentation & Systems 2:30 pm to 05:00 pm Total Marks:	70
	truction		
	1. 2. 3.	ı v	
Q.1	(a)	Explain designing aspects of current to voltage converters. How sensitivity of I to V converter can be improve?	07
	(b)	Enlist various Electrical safety issues in medical devices and give detail explanation of any two.	07
Q.2	(a)	Enlist Static Limitations of Operational Amplifier and explain any two of them in detail.	07
	(b)	Explain designing of Switched capacitor filters. OR	07
	(b)	Explain technical consideration for Low noise amplifier with its necessary equations.	07
Q.3	(a) (b)	Write details notes on Modulation and Demodulation techniques for Signals. Write Short on voltage controlled oscillators with necessary schematic and equations. Explain its importance in medical instrumentation. OR	07 07
Q.3	(a) (b)	Give statistical related to noise in Resistors. Draw noise equivalent circuit for any BJT amplifier. And derive necessary equation for noise.	07 07
Q.4	(a) (b)	Explain floating load currents amplifier with necessary equations. Explain working of successive approximation type ADC. OR	07 07
Q.4	(a)	Design 4 bit switched current source type DAC. Range of output voltage is 0 to 5 volt.	07
	(b)	What is the effect of order in filter response? Explain second order High pass filter with necessary circuit and equations.	07
Q.5	(a) (b)	 Enlist the Medical isolation techniques. Explain any one in details. Explain following Sample and Hold circuits Aliasing 	07 07
0.5	(0)	OR Explain various configurations of voltage comparators	07
Q.5	(a) (b)	Explain various configurations of voltage comparators. Draw noise equivalent circuit for any JFET amplifier. And derive necessary equation for noise.	07 07
