Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Su	bject	code: 2713102 Date: 12-01-2015	
Su	bject	Name: Biosensors and BioMEMs	
Tiı	ne: 02	2:30 pm - 05:00 pm Total Marks: 70	
Ins	truct	ions:	
	1. 2.	Attempt all questions. Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
Q.1	(a)	Explain static and Dynamic characteristics of Instrumentation System.	07
	(b)	Enlist Different types of Optical Sensors & explain Biomedical Applications of Optical sensors in detail.	07
Q.2	(a)	What is Biosensors? Give classification of Biosensors & explain Catalytic Biosensor in detail.	07
	(b)	Write a Short Note on: Potentiometric Biosensors OR	07
	(b)	Write a Short Note on: Conductometric Biosensors	07
Q.3	(a)	Write a Short Note on Capacitance Level Sensors.	07
	(b)	Enlist different types of Vortex Detection systems & explain Capacitance & Ultrasonic Vortex flow meters with its Merits & Demerits. OR	07
Q.3	(a)	Derive the equation of Output Potential e _o for LVDC.	07
	(b)	Write a short note on Torque Measurement.	07
Q.4	(a)	Discuss Application of MEMS in Glucose Monitoring device. What is BioMEMS? Explain Different types of Materials used for fabrication of	07 07
	(b)	BioMEMS.	U /
Q.4	(a)	Discuss Application of MEMS in Drug Delivery System.	07
	(b)	Explain Different Fabrication techniques of BioMEMS.	07
Q.5	(a)	Explain Thermocouple as a temperature Sensor with its necessary interface.	07
	(b)	Discuss various surgical Applications of Bio MEMS.	07
Q.5	(a)	Explain Thermistor as a temperature Sensor with its necessary interface.	07
	(b)	Discuss various Diagnostic Applications of Bio MEMS.	07
