Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER - VIII.EXAMINATION - WINTER 2016

S	Subje Sime	ect Code: 180303 Date: 22/10/2016 ect Name: Biomedical Microsystems (Department Elective-II) : 02:30 PM to 05:00 PM Total Marks: 70 etions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	
Q.1	(a)	What is LIGA process? Explain LIGA by deep X-ray lithography.	07
	(b)	Describe the geometric scaling issue of MEMS.	07
Q.2	(a)	Explain the processes of CVD and PVD with necessary diagrams.	07
	(b)	Describe the process of wet etching.	07
		OR	
	(b)	Describe the process of plasma etching.	07
Q.3	(a)	Describe the Lorentz force actuation with appropriate diagrams.	07
	(b)	Explain viscous damping with necessary sketches.	07
		OR	
Q.3	(a)	Enlist and explain diagnostic and therapeutic applications of metal nanoshells.	07
	(b)	Explain the electrical system scaling issue of MEMS.	07
Q.4	(a)	Write a short note on MEMS as physical sensors.	07
	(b)	Briefly describe the postfabrication processing of MEMS.	07
		OR	
Q.4	(a)	Explain piezoresistance in single-crystal silicon.	07
	(b)	Write a short note on MEMS as chemical sensors.	07
Q.5	(a)	Describe the czochralski growth process.	07
	(b)	Explain case study on DMD packaging.	07
		OR	
Q.5	(a)	Describe the process of Surface Characterization.	07
	(b)	Write a brief note on tissue-specific zip codes in blood vessels.	07
