Seat No.:		Enrolment No	Enrolment No	
		GUJARAT TECHNOLOGICAL UNIVERSITY		
M. E SEMESTER – II • EXAMINATION – WINTER • 20				
Subject code: 1723102 Date: 27-			12-2013	
Sub	ject	Name: Advanced Biomedical Imaging		
_		0.30 am – 01.00 pm Total Marks: 70		
		tions:		
	1.	Attempt all questions.		
	2.	Make suitable assumptions wherever necessary.		
	3.	Figures to the right indicate full marks.		
Q.1	(a) (b)	Write a short note on Anger position network used in Nuclear medicine. Explain Instrumentation of The Gamma Camera with necessary diagram.	07 07	
Q.2	(a) (b)	Explain fan beam reconstruction method in CT scan. Explain working principle of the annihilation coincidence detection circuit used in PET.	07 07	
		OR		
	(b)	Explain production of Radionuclides.	07	
Q.3	(a)	Write a short note on X-Ray Energy Spectrum.	07	
Q.J	(b)	Explain scanner instrumentation and detectors for computed tomography. OR	07	
Q.3	(a)	Explain Linear and mass attenuation coefficients of x-ray in tissue.	07	
	(b)	Explain Iterative reconstruction method for Image processing in CT scan.	07	
Q.4	(a)	Explain basic illustration of Linear phased array and principle of the	07	
	(b)	Time-gain compensation mechanism in Ultrasound imaging. Explain Instrumentation for Planar X-ray imaging.	07	
	()	OR		
Q.4	(a)	Explain ultrasonic beam energy loss mechanisms in tissues.	07	
	(b)	Compare all modes of Ultrasound scanning.	07	
Q.5	(a)	Write a short note on Magnetic Resonance Spectroscopy.	08	
	(b)	Explain slice select gradient for MRI. How to change the slice thickness? OR	06	
Q.5	(a) (b)	Explain phase encoding method used for Image construction in MRI. Explain working principle of thermal Imaging techniques with its Schematic diagram.	07 07	
