Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIIth SEMESTER–EXAMINATION – MAY/JUNE- 2012

Subject code: 170303 **Date: 09/06/2012**

Subject Name: Medical Imaging Technology

Time: 02:30 pm – 05:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Draw & explain stationary anode type x-ray tube with schematic diagram.	**07**
	(b)	Draw & explain block-diagram of x-ray machine & Explain each block in detail.	**07**
Q.2	**(a)**	Explain different phenomenon occurs during interactions between x-rays & matter.	**07**
	(b)	Explain white radiation & characteristic radiation in detail.	**07**
		OR	
	(b)	Explain single photon emission computed tomography.	**07**
Q.3	**(a)**	Explain the principle of CT scan machine. Enlist and explain any three different generation CT machine.	**07**
	(b)	Explain pulse echo system block diagram of ultrasonography.	**07**
		OR	
Q.3	**(a)**	Explain color Doppler flow imaging system in detail.	**07**
	(b)	Explain the interaction of nuclear particles with matter.	**07**
Q.4	**(a)**	Explain fluoroscopy in detail with its components.	**07**
	(b)	Explain working principle of magnetic resonance imaging.	**07**
		OR	
Q.4	**(a)**	Explain different biological effects of x-ray radiation & ultrasound.	**07**
	(b)	Explain positron emission tomography in detail.	**07**
Q.5	**(a)**	1) Give the difference between x-ray & CT scan imaging techniques.	**04**
		2) Write a short note on Angiography.	**03**
	(b)	Draw & explain the construction of image intensifier.	**07**
		OR	
Q.5	**(a)**	Write a note on infrared imaging.	**07**
	(b)	Explain pulsed Doppler imaging system.	**07**

****