Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 170303 **Date: 07/12/2013**

Subject Name: Medical Imaging Technology

Time: 10:30 TO 01:00 **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)**	Explain interactions between radiation and matters.	**07**
	(b)	Draw and explain block diagram of x-ray machine.	**07**
Q.2	**(a)**	Draw and explain construction of image intensifier.	**07**
	(b)	What is fluoroscopy? Explain constructional diagram of fluoroscopic instrument.	**07**
		OR	
	(b)	Explain xeroradiography.	**07**
Q.3	**(a)**	Explain different generation CT Scanners.	**07**
	(b)	What is piezo electric effect? Explain ultrasonic transducer used in sonographic machine.	**07**
		OR	
Q.3	**(a)**	Explain principle of magnetic resonance imaging.	**07**
	(b)	Explain single photon emission computed tomography.	**07**
Q.4	**(a)**	Draw and explain basic pulse echo system.	**07**
	(b)	What is CT number? Explain any one image reconstruction technique of Computed tomography.	**07**
		OR	
Q.4	**(a)**	Explain different types of high voltage generator circuit of x-ray machine.	**07**
	(b)	Explain positron emission tomography.	**07**
Q.5	**(a)**	Explain interaction of photons with matters.	**07**
	(b)	Explain different x-ray detectors.	**07**
		OR	
Q.5	**(a)**	Write a note on digital radiography.	**07**
	(b)	Write a note on microwave thermography.	**07**

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