Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014

Subject code: 1723102 **Date: 03-12-2014**

Subject Name: Advance Biomedical Imaging

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)**	Explain the Interaction of X-Ray with matter in detail.	**07**
	(b)	Enlist and explain CT image reconstruction algorithms in brief.	**07**
Q.2	**(a)**	Write clinical applications of CT imaging technique.	**07**
	(b)	Write a technical note on X-ray image intensification.	**07**
		OR	
	(b)	Write a technical note on X-ray detectors.	**07**
Q.3	**(a)**	Draw and explain the block diagram of MRI instrumentation.	**07**
	(b)	Explain Computed Radiography with necessary block diagrams.	**07**
		OR	
Q.3	**(a)**	Enlist and explain the limitations and applications of thermography.	**07**
	(b)	Explain Digital Radiography with necessary block diagrams.	**07**
Q.4	**(a)**	Explain the reconstruction techniques of photoacoustic imaging.	**07**
	(b)	Write a technical note on Fluoroscopy.	**07**
		OR	
Q.4	**(a)**	Write a brief note on MRI artifacts. Suggest the techniques to remove artifacts.	**07**
	(b)	Briefly describe the principal of photoacoustic imaging.	**07**
Q.5	**(a)**	Explain Signal Generation and Acquisition Hardware of MPI.	**07**
	(b)	Enlist and explain the Characteristics of MRI image.	**07**
		OR	
Q.5	**(a)**	Explain k-Space Analysis of Data Acquisition of MRI image.	**07**
	(b)	Write a technical note on properties of magnetic particle.	**07**

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