Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–8 • EXAMINATION – SUMMER 2015

Subject Code: 180302 **Date:07/05/2015**

Subject Name: Advance Medical Techniques

Time: 10:30 am to 01:00 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)**	What is PACS? Explain the difficulties to implement PACS and its solutions.	**07**
	(b)	Enlist the stages of sleep and EEG waveforms associated with them.	**07**
Q.2	**(a)**	What is DICOM? Enlist and explain DIMSE-C and DIMSE-N services.	**07**
	(b)	Explain Algebraic Reconstruction Techniques (ART) for CT image reconstruction.	**07**
		OR	
	(b)	Explain Simultaneous Algebraic Reconstruction Technique (SART) for CT image reconstruction.	**07**
Q.3	**(a)**	Describe the interaction of laser beams with various types of materials.	**07**
	(b)	Explain Pan & Tompkins algorithm.	**07**
		OR	
Q.3	**(a)**	Explain the stereotactic laser–neurosurgery with appropriate diagrams.	**07**
	(b)	Describe the technique of image guided thermal therapy.	**07**
Q.4	**(a)**	Explain the principal of endoscopic ultrasound imaging.	**07**
	(b)	Write a short note on photodynamic therapy (PDT).	**07**
		OR	
Q.4	**(a)**	Write a brief note on Angioplasty.	**07**
	(b)	Describe the treatment of the retinal damage through application of laser.	**07**
Q.5	**(a)**	Explain the principle of power transmission through optical fibers.	**07**
	(b)	Enlist and explain various optical fibers for Ultraviolet, Infrared and visible light.	**07**
		OR	
Q.5	**(a)**	Explain Cardiac ablation Catheters.	**07**
	(b)	Describe the indications and outcomes of hyperbaric oxygen therapy (HOT).	**07**

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