Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER-V • Examination - WINTER • 2014

Subject Name: Medical Imaging Techniques		Oate: 02-12-2014 Fotal Marks: 70	
	tructio	<u> </u>	Total Walks. A
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	1. 2. 3. 4. 5. 6. 7. 8. 9.	Answer any seven out of ten. Tube current. X-ray. Filament current. Grids. X-ray tube. Roentgen. Larmor frequency. CT number. Angular momentum. Angiography.	14
Q.2	(a)	Describe the electromagnetic radiations.	03
	(a)	OR Explain Line focus principle of X-ray generators.	03
	(b)	Explain factors that affect attenuation coefficient. OR	03
	(b) (c)	Define Radiation absorbed dose in brief. Explain construction of beam restrictors. OR	03 04
	(c) (d)	Explain need of grids. Compare stationary and rotating X-ray tubes. OR	04 04
	(d)	Draw rotating X-ray tube only.	04
Q.3	(a)	Explain Image intensifier in brief. OR	03
	(a) (b)	Explain X-ray films in brief. Define the basic components of fluoroscopy. OR	03 03
	(b) (c)	State Angiography procedure in brief. Describe the Compton effect in short.	03 04
	(c)	OR Enlist the various pressure waveforms associated with catheterizat procedure.	ion 04
	(d)	Draw the layout of catheterization laboratory. OR	04
	(d)	State the principle of CT scan.	04
Q.4	(a)	Describe photo scattering in brief. OR	03
	(a)	Describe the 3 rd and 4 th generation of CT Scan.	03

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	(b)	04			
		OR			
	(b)	Explain principle of MRI.	04		
	(c)	Describe the biological effects of magnetic field in detail.	07		
Q.5	(a)	Enlist various properties of ultrasound.	04		
_	(b)				
	(c)				
	(d)	Give the disadvantages of ultrasound transducer.	03		

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