

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**
