

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. - SEMESTER – VIII EXAMINATION – OCTOBER 2012****Subject code: 180302****Date: 29/10/2012****Subject Name: Advanced Medical Techniques****Time: 02.30pm - 05.00pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) What is arrhythmia? List the types of arrhythmia. Discuss the method of arrhythmia detection. **07**

(b) What are the diagnostic applications of HRV analysis? **07**

Q.2 (a) What are the different methods available for medical image registration? Explain any one in detail. **07**

(b) Explain iterative method for CT image reconstruction. **07**

OR

(b) Explain the standards requires for compression and communication using PACS. **07**

Q.3 (a) What is minimally invasive cardiovascular technology? How these techniques are more advantageous over conventional methods. **07**

(b) Write short note on Aneurysm Treatment. **07**

OR

Q.3 (a) Explain the construction of Hyperbaric Oxygen Therapy chamber and HOT procedures. **07**

(b) What are the therapeutic applications of Hyperbaric Oxygen Therapy? Explain any one in detail. **07**

Q.4 (a) Explain the image guided thermal therapy. **07**

(b) Explain the instrumentation and applications of noninvasive thermal therapy. **07**

OR

Q.4 (a) Differentiate direct and indirect fiber optic biomedical sensors. **07**

Q.4 (b) Explain the fundamental and working of endoscopic imaging system. **07**

Q.5 (a) What are the common problems encountered in use of laser fiber optic systems? **07**

(b) Explain the system, subsystems and components of Laser-Fiber integrated systems. **07**

OR

Q.5 (a) Explain the fibreoptic Laser systems in gastroenterology. **07**

(b) Explain photocoagulation and hyperthermia using Laser. **07**
