

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 180302****Subject Name: Advanced Medical Techniques****Date: 12/05/2012****Time: 10.30 am – 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) Give classification of heart arrhythmia. Explain the procedure for detection of arrhythmia. **07**
(b) Discuss the diagnostic applications of EEG. **07**

- Q.2** (a) Using schematic diagram explain components and configuration of an image archive system. **07**
(b) Explain Filter back projection method for CT image reconstruction. **07**

OR

- (b) Explain the image orientation correction in digital radiography to be used in PACS. **07**

- Q.3** (a) Explain various effects in interaction between laser beam and tissue. **07**
(b) Explain the principles involved in light transmission through optical fibers. **07**

OR

- Q.3** (a) What is Hyperbaric Oxygen Therapy (HOT)? Explain the complications of HOT. **07**
(b) List the applications of Hyperbaric Oxygen Therapy. Explain any one in detail. **07**

- Q.4** (a) Draw the schematic diagram of full endoscopic system. Discuss the features of common endoscopic systems. **07**
(b) Explain the principles and working of direct physical fiberoptic sensors. **07**

OR

- Q.4** (a) Explain Mechanism of tissue destruction and dosimetry for thermal therapy. **07**
(b) Explain Noninvasive thermal therapy. **07**

- Q.5** (a) Discuss the common problems encountered in use of laser fiber optic systems. **07**
(b) List the clinical applications of various types of laser system. **07**

OR

- Q.5** (a) Discuss the design considerations for vascular stents. **07**
(b) Write a short note on Cardiac Ablation Catheters. **07**
