

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II (OLD) – • EXAMINATION – SUMMER 2016

Subject Code: 1723102

Date: 18/05/2016

Subject Name: Advance Biomedical Imaging

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) Explain schematics of A-mode and M-mode of Ultrasound Imaging. **07**
(b) Explain Interaction of X rays with matter in detail. **07**
- Q.2** (a) Explain application of SPECT for Diagnosis. **07**
(b) Explain Instrumentation of Gamma Camera with necessary diagram. **07**
- OR**
- (b) Explain computed Radiography with necessary block diagrams. **07**
- Q.3** (a) Explain instrumentation of CT scan with necessary diagram. **07**
(b) Explain reconstruction techniques of PET. **07**
- OR**
- Q.3** (a) Write a short note on Photo acoustic Imaging. **07**
(b) Explain iterative reconstruction method for image processing in CT scan. **07**
- Q.4** (a) Explain Instrumentation of MRI Machine. **07**
(b) Explain instrumentation of Thermal Imaging system with necessary block diagram. **07**
- OR**
- Q.4** (a) Write a short note on MRI Artifacts. **07**
(b) Explain Infrared Thermal Imaging with necessary image reconstruction technique in detail. **07**
- Q.5** (a) Write a short note on properties of Magnetic Particle. **07**
(b) Enlist application of PET and SPECT in medical Field. **07**
- OR**
- Q.5** (a) Write a short note on X ray Detectors. **07**
(b) What is Nano particle? Explain Application of Nano Technology in Medical Imaging. **07**
