Code :R5321106

R5

III B.Tech II Semester(R05) Supplementary Examinations, April/May 2011
MEDICAL IMAGING TECHNIQUES
(Biomedical Engineering)

Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. (a) Explain the five techniques of interaction between X-ray and matter.

   (b) Define the attenuation and explain the linear attenuation coefficiant with relevant equations.

2. (a) Explain the characteristics of X-ray image?

   (b) Describe in detail about the various image enhancement techniques used in the imaging field.

3. Discuss the following in Detail:

   (a) Projection function.

   (b) Image artifacts

   (c) Weighing factor

4. (a) Describe about the cyclotron in detail.

   (b) Describe the PET scan with a neat sketch.

5. Derive the equation of motion for compressional Wave for the one dimensional case with necessary diagrams.

6. (a) List the requirements of real time ultrasonic imaging system.

   (b) Explain one pulse echo system with block diagram.

7. Explain the following terms with respect to MRI system adjustments.

   (a) Receiver Gain

   (b) CYCLOPS and Phase Cycling

   (c) Shimming.

8. Explain Frequency encoding procedure with pulse sequence during the preparation phase of the imaging sequence.

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