

**B.Sc. IN MEDICAL IMAGING TECHNOLOGY
(BMIT)**

00023

**Term-End Examination
December, 2012**

**BAHI-056 : ADVANCE PHYSICS OF
RADIOLOGICAL EQUIPMENT - II**

Time : 3 hours

Maximum Marks : 70

PART - A

Answer *any five* questions. Each question carries
8 marks.

8x5=40

1. Explain in detail with neat diagrams the different generations of CT scanners.
2. What are the two types of relaxations ? Write a detail note on spin echo, gradient echo and inversion recovery sequences in MRI.
3. Give a detailed note on the interaction of ultrasound with matter. List the medical applications of ultrasound.
4. Give a detailed note on the basic principles of image reconstruction in computed Tomography.

5. Explain in detail with a neat diagram the principle, construction and working of a spiral CT scanner.
6. Enumerate in detail about the different types of magnets and coils used in Magnetic Resonance Imaging.
7. What is ultrasound ? Write a note on the production of ultrasound and explain how the echo principle is applied in ultrasonography ?
8. Explain in detail with neat diagrams the basic principles of Magnetic Resonance Imaging and how the MRI signal is produced and analysed ?

PART - B

9. Write short notes on *any five* questions.
Each question carries 6 marks. 6x5=30
- (a) Artefacts found in CT images.
 - (b) Magnetic Resonance spectroscopy and its applications.
 - (c) Contrast ultrasound.
 - (d) Principle of Doppler ultrasound and its types.
 - (e) Multi - slice CT.
 - (f) Transducers and their uses in ultrasonography.
 - (g) Diffusion weighted imaging.
 - (h) Safety issues in Magnetic Resonance Imaging.
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