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BAHI-51

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B.Sc. IN MEDICAL IMAGING TECHNOLOGY (BMIT)

Term-End Examination

June, 2014

BAHI-51 : PHYSICS OF RADIOLOGICAL EQUIPMENT - I

Time : 3 Hours *Maximum Marks : 70*

PART - A

Answer **any five** questions. **8x5=40**

1. Draw a circuit diagram of X-ray machine and label the parts. What is the advantage of three phase X-ray unit over single phase X-ray unit ?

2. What is Anode Heel Effect ? How is it used in radiography and mammography for our advantages ?

3. Draw a diagram of an X-ray tube and label its various parts. Write in detail about filament.

4. Write in detail about Digital Fluoroscopy including its various components.

5. What is Tomography ? Write in detail about X-ray tube, detectors and collimators being used in computed Tomography.

6. Explain the principle of PET. Why is it combined with CT ?

7. How is the breast imaging different from other conventional radiography imaging of the body ? What are the advantages of breast compression during mammography ?

8. What are Bremsstrahlung and characteristic X-rays ? Draw a diagram for X-ray emission spectrum from an X-ray tube.

PART - B

9. Write notes on **any five** : **6x5=30**
   (a) Computed Radiography (CR)
   (b) Quality Assurance of Mammography
   (c) PACS
   (d) Spiral CT
   (e) SPECT
   (f) Portable X-ray unit
   (g) Types of Grid
   (h) X-ray beam limiting devices used in radiography