

**B.Tech. SEM -VI Bio Medical 2014 Course (CBCS) : WINTER -  
2017**

**SUBJECT : MEDICAL IMAGING TECHNIQUES**

Day : **Wednesday**

Time : **10.00 AM TO 01.00 PM**

Date : **22/11/2017**

**W-2017-2242**

Max. Marks : **60**

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagrams **WHEREVER** necessary.
  - 4) Assume suitable data if necessary.
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**Q.1** Write a short note on production of X-Ray. Also explain with the help of a neat diagram stationary anode X-ray tube. [10]

**OR**

Define Angiography. Explain in detail various Angiography techniques.

**Q.2** With the help of a neat block diagram explain linear scanning using multi element linear array scanner in ultrasound imaging. [10]

**OR**

Define basic principle of ultrasonography. Also explain the concept of Doppler color flow imaging in detail.

**Q.3** Define Computed Tomography (CT). Also explain different types of detectors used in CT with the help of a neat diagram. [10]

**OR**

Define PET. With the help of a block diagram explain the working of PET System.

**Q.4** Define Radioactivity and also explain in detail radioactive emissions and time decay of radioactive isotopes. [10]

**OR**

List the various collimators used with Gamma Camera. Explain any two collimators in detail.

**Q.5** Define medical thermography and explain in detail physics of thermography. [10]

**OR**

Define MRI. Describe the basic principle of MRI.

**Q.6** List and explain various digital imaging formats. Also explain in detail JPEG image format. [10]

**OR**

What is Image Restoration and Image enhancement? Explain the basic principle of Image Restoration.

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