

B.Sc. NUCLEAR MEDICINE TECHNOLOGY
THIRD YEAR
PAPER I – RECENT ADVANCE IN NUCLEAR MEDICINE
TECHNIQUES

Q.P. Code: 802121

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the newer image processing techniques in Nuclear Medicine practice.
2. Mention any four of the current radiopharmaceuticals for SPECT imaging. Describe the basic steps in the image acquisition for any one of them.
3. What are the basic principles of PET imaging?

II. Write notes on:

(8 x 5 = 40)

1. Newer scintillation crystals.
2. Butterworth filter in image processing.
3. Attenuation correction in SPECT CT imaging.
4. Radiation safety precautions in ^{18}F -FDG PET study.
5. Symptoms of contrast allergy.
6. Reconstruction of Myocardial SPECT images.
7. Precautions to be followed during ^{18}F FDG administration for PET study.
8. Standardized uptake value max (SUV max).

III. Short answers on:

(10 x 3 = 30)

1. Non-ionic contrast.
2. Principle of bone SPECT study.
3. Importance of serum creatinine prior to ^{18}F FDG PET-CT study.
4. Hydrocortisone injection.
5. Muscle uptake in FDG PET study.
6. Lead apron.
7. Picture Archiving and Communication System (PACS).
8. Image guided radiotherapy.
9. Pixel.
10. Colour scale for image display.
