

**MANIPAL ACADEMY OF HIGHER EDUCATION**

(Deemed University)

**THIRD YEAR B.N.M.T DEGREE EXAMINATION – JUNE 2006****SUBJECT: CLINICAL NUCLEAR MEDICINE  
(OLD REGULATION)**

Monday, July 03, 2006

Time: 3 Hrs.

Max. Marks: 80

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**Answer ALL the questions.**

1. Describe the various techniques of parathyroid imaging.  
(20 marks)
2. Describe the procedure protocol for Left Ventricular Ejection Fraction estimation.  
(20 marks)
3. Describe the procedure protocol for Blood volume estimation with  $^{51}\text{Cr}$ .  
(20 marks)
4. Short notes (Answer any **FOUR**):  
(5×4 = 20 marks)
  - 4A. Dacryoscintigraphy.
  - 4B. Salivary gland imaging.
  - 4C. Lymphoscintigraphy.
  - 4D. Sentinel node imaging.
  - 4E. Gall bladder ejection fraction.



**MANIPAL ACADEMY OF HIGHER EDUCATION**

(Deemed University)

**THIRD YEAR B.N.M.T. DEGREE EXAMINATION – JUNE 2006****SUBJECT: THERAPEUTIC NUCLEAR MEDICINE  
(OLD REGULATION)**

Tuesday, July 04, 2006

Time: 3 Hrs.

Max. Marks: 80

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**✍ Answer all the questions.**

- 1A. Design and layout of a category 4 Nuclear medicine lab.
- 1B. A female patient suffering from Graves disease has been referred to your department for  $^{131}\text{I}$  therapy. How will you decide upon the dose of radioiodine to be given to this patient?
- 1C. A patient suffering from carcinoma of thyroid has come for a  $^{131}\text{I}$  low dose scan to the department but on inquiry you find that the patient has not stopped thyroxin (Eltroxin) even after advice. Enumerate along with their physical characteristics the radiopharmaceuticals/radionuclides which may be used to scan this patient.

(20×3 = 60 marks)

2. Short notes (answer any **FOUR**):
- 2A. Post  $^{131}\text{I}$  therapy scan.
- 2B. Radionuclide therapy of malignant pleural effusion.
- 2C. Radiation detectors in  $^{131}\text{I}$  therapy.
- 2D. Swipe sampling.
- 2E. Radionuclide therapy for joint disorders.

(5×4 = 20 marks)



Reg. No.

# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

## THIRD YEAR B.N.M.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: SPECT, PET AND RECENT ADVANCES IN NUCLEAR MEDICINE  
(OLD REGULATION)

Wednesday, July 05, 2006

Time: 3 Hrs.

Max. Marks: 80

✍ Answer ALL questions.

1. Describe various detectors used in PET cameras. What is coincidence detection?
2. Describe various processing steps required to get a refined, interpretable SPECT data.
3. Explain the mandatory QC tests to be performed before patients SPECT study.

(20×3 = 60 marks)

4. Write short notes on any **FOUR** of the following:

- 4A. Positron emitters.
- 4B. Bull's eye.
- 4C. Collimators for SPECT.
- 4D. Flood field image for SPECT.
- 4E. Pulse Height Analyser.

(5×4 = 20 marks)

