

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0122]

**JANUARY 2022  
(OCTOBER 2021 EXAM SESSION)**

**Sub. Code: 2313**

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY  
SECOND YEAR (From 2019-2020 onwards)  
PAPER III – THERAPEUTIC NUCLEAR MEDICINE TECHNIQUES  
*Q.P. Code : 282313***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Briefly describe the procedures for administration of 5 mCi <sup>131</sup>Iodine for treatment of hyperthyroidism.
2. Describe the procedure for radiation synovectomy for haemophilia.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Radiopharmaceutical for palliation of painful bone metastases.
2. Personnel monitoring during <sup>177</sup>Lu DOTATATE administration.
3. Calibration procedure for dose calibrator for beta emitters.
4. <sup>186</sup>Re.
5. Radiation safety procedure for <sup>131</sup>I-MIBG administration for diagnostic study.
6. Post therapy imaging.
7. Design of radionuclide administration room for therapy procedures.
8. Disposal of radioactive waste.
9. Transport index.
10. Accidental spill of radioactive material.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1022]

**OCTOBER 2022**

**Sub. Code: 2313**

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY  
SECOND YEAR (From 2019-2020 & 2020-2021 onwards)  
PAPER III – THERAPEUTIC NUCLEAR MEDICINE TECHNIQUES**

*Q.P. Code : 282313*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Briefly describe the procedures for administration of 100 mCi <sup>131</sup>I-MIBG for treatment of malignant Pheochromocytoma.
2. Describe the procedure for administration of <sup>177</sup>Lu-DOTATATE therapy for neuroendocrine tumours.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Radiopharmaceutical for radiation synovectomy of knee joint in a patient with haemophilia.
2. Quality control of <sup>131</sup>I-MIBG for diagnostic imaging.
3. Calibration procedure for dose calibrator.
4. <sup>153</sup>Sm EDTMP.
5. Radiation safety procedures for radiation synovectomy.
6. Post synovectomy imaging.
7. Design of delay tank.
8. Post therapy imaging for <sup>131</sup>Iodine therapy.
9. Transport index for radiopharmaceuticals.
10. Accidental spill of radioactive Iodine.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1023]

OCTOBER 2023

Sub. Code: 2313

M.Sc. NUCLEAR MEDICINE TECHNOLOGY  
SECOND YEAR (From 2020-2021 onwards)  
PAPER III – THERAPEUTIC NUCLEAR MEDICINE TECHNIQUES

*Q. P. Code: 282313*

**Time: Three hours**

**Maximum: 100 Marks**

**Answer ALL Questions**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Radionuclide Alpha therapy.
2. Precautions, Preparations and post therapeutic instructions to be followed for I-131 radionuclide therapy and its significance.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Radiation synovectomy and the various radionuclides used.
2. Compare PRRT therapy with Lu177 and Y90.
3. P32 therapeutic applications.
4. Patient with metastatic medullary carcinoma thyroid suggest the nuclear medicine therapeutic procedure which will suit better and why?
5. How to minimize the radiation exposure to the personnel involved in radionuclide therapy?
6. Design a therapeutic radionuclide room as per AERB regulations.
7. Recent therapeutic radionuclides and radiopharmaceuticals in Nuclear Medicine.
8. Quality control tests that should be done before administering Lu177PSMA.
9. Management of Misadministration of a therapeutic radionuclide (I131).
10. Palliative radionuclide therapeutic radiopharmaceuticals.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 1024]**

**OCTOBER 2024**

**Sub. Code: 2313**

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY  
SECOND YEAR (From 2020-2021 onwards)  
PAPER III – THERAPEUTIC NUCLEAR MEDICINE TECHNIQUES**

***Q. P. Code: 282313***

**Time: Three hours**

**Maximum: 100 Marks**

**Answer ALL Questions**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Radionuclide PRRT therapy for neuro endocrine therapy.
2. Precautions, Preparations and post therapeutic instructions to be followed for <sup>1131</sup>mIBG radionuclide therapy and its significance.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Palliative radionuclide therapy and the various radionuclides used.
2. Treatment for hyperthyroidism, Preparation and Dosage and mechanism.
3. P<sup>32</sup> therapeutic applications for polycythemia vera.
4. Patient with metastatic medullary carcinoma thyroid suggest the nuclear medicine therapeutic procedure which will suit better and why?
5. How to minimize the radiation exposure to the personnel involved in radionuclide therapy?
6. Design a Delay tank as per AERB regulations.
7. Recent therapeutic radionuclides and radiopharmaceuticals in Nuclear Medicine.
8. Quality control tests that should be done before administering Lu<sup>177</sup>DOTATATE.
9. Management of Misadministration of a therapeutic radionuclide.
10. I-<sup>131</sup> radionuclide therapeutic for Metastatic carcinoma thyroid.

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