

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

[AHS 0122]

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

Sub. Code: 2315

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR (From 2019-2020 onwards)
PAPER V- RADIOPHARMACY - II
*Q.P. Code : 282315***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on: (2 x 20 = 40)

1. Various Quality Control of PET radiopharmaceuticals by TLC scanner, HPLC and Gas Chromatography (GC).
2. Describe various methods of iodination technique and their merits and disadvantages?

II. Write Short Notes on: (10x6 = 60)

1. Quality Control Tests for Radiopharmaceuticals other than PET.
2. Bio-distribution studies.
3. Synthesis of PET Radiopharmaceuticals.
4. Quality control of ^{99m}Tc-Elute.
5. ISO and ISI Standards In Radiopharmaceuticals.
6. LD_{50/60} of a radiopharmaceutical. How can you determine this quality?
7. Regulatory requirements for the dispensing and supply of radiopharmaceuticals.
8. Recent Trends in Radiopharmaceuticals.
9. Ligands and Labelling of Molecules.
10. Specific Activity role in radiopharmaceutical.

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 2315

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR
(Candidates admitted from 2019-2020 & 2020-2021 onwards)
PAPER V- RADIOPHARMACY-II**

Q. P. Code: 282315

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on: **(2 x 20 = 40)**

1. Characteristics of Ideal Radiopharmaceuticals and Factors Influencing the Design of New Radiopharmaceuticals.
2. Various Quality Control of PET radiopharmaceuticals by TLC scanner, HPLC and Gas Chromatography (GC).

II. Write notes on: **(10 x 6 = 60)**

1. Good Manufacturing practice (GMP) in Radiopharmacy.
2. SI and ISO standards in radiopharmaceuticals.
3. Regulations, Ethics and Registration of radiopharmaceuticals. Barriers of health communication.
4. Specific Activity role in radiopharmaceutical.
5. Iodination and its Techniques.
6. Bio-distribution studies.
7. Radionuclide and Radiochemical Purity.
8. Biological Tests.
9. Role of Chromatographic Solvent and Rf value.
10. Quality control of ^{99m}Tc-Elute.

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

[AHS 1023]

OCTOBER 2023

Sub. Code: 2315

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER V – RADIOPHARMACY - II**

Q. P. Code: 282315

Time: Three hours

Maximum: 100 Marks

Answer ALL Questions

I. Elaborate on:

(2 x 20 = 40)

1. Various Quality Control methods of Radiopharmacy.
2. Various methods of iodination technique and their merits and disadvantages.

II. Write notes on:

(10 x 6 = 60)

1. Various receptor imaging.
2. Labeling with Bi-functional Chelating Agents.
3. Specific Activity and its role in radiopharmacy.
4. HPLC and GAS Chromatography.
5. Physiochemical Tests.
6. Pyrogens and their symptoms and tests.
7. Mechanism of localization of radiopharmaceutical.
8. Good Manufacturing practice (GMP) and ISO standards.
9. Sterilization and sterility testing.
10. ^{99m}Tc Content in ^{99m}Tc -Eluat.

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

[AHS 1024]

OCTOBER 2024

Sub. Code: 2315

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER V – RADIOPHARMACY - II**

Q. P. Code: 282315

Time: Three hours

Maximum: 100 Marks

Answer ALL Questions

I. Elaborate on:

(2 x 20 = 40)

1. Mechanism of localisation of radiopharmaceutical in different organs.
2. Characteristics of Ideal Radiopharmaceuticals and different factors influencing the design of new radiopharmaceuticals.

II. Write notes on:

(10 x 6 = 60)

1. Regulations, ethics, registration of radiopharmaceuticals.
2. Recent trends in Radiopharmaceuticals.
3. Iodination and its Technique.
4. Short note on pharmaceutical safety practices.
5. Pyrogen test.
6. Chromatographic solvent and Rf value.
7. Good manufacturing practice in radiopharmaceuticals.
8. Radiochemical purity-Quality control.
9. Ligands and Labeling of molecules.
10. Quality control in hospital Radiopharmacy practices.

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

[AHS 1025]

OCTOBER 2025

Sub. Code: 2315

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER V – RADIOPHARMACY - II**

Q. P. Code: 282315

Time: Three hours

Maximum: 100 Marks

Answer ALL Questions

I. Elaborate on:

(2 x 20 = 40)

1. Describe various Quality Control method of radiopharmaceutical.
2. Characteristics of Ideal radiopharmaceuticals and Factors Influencing the Design of New Radiopharmaceuticals.

II. Write notes on:

(10 x 6 = 60)

1. Synthesis of ^{18}F – Fluorodeoxyglucose (FDG).
2. Thin Layer chromatography and Retardation factor.
3. Criteria for selecting Radionuclide for therapy and diagnostic Nuclear medicine.
4. Various method of RBC labeling with $\text{Tc } 99\text{m}$.
5. Radionuclides used for Bone Pain palliation.
6. Positron emitting Cardiac agents.
7. Radiolabelled leukocytes and platelets.
8. Sterility test of Radiopharmaceuticals.
9. ^{99}Mo Molybdenum Breakthrough Test.
10. Radiopharmaceuticals for Neuro imaging.
