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

[AHS 0321] **MARCH 2021** **Sub. Code: 2307**

(OCTOBER 2020 EXAM SESSION)

M.Sc. NUCLEAR MEDICINE TECHNOLOGY

FIRST YEAR (From 2019-2020 onwards)

PAPER VII – RADIOPHARMACY - I

Q.P. Code : 282307

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Ge^{68}-Ga^{68} generator system.
2. Production of O^{15} in cyclotron.

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

1. Formulation of Tc^{99m} HSA.
2. Chemical structures for Tc^{99m} DTPA , Tc^{99m} MIBI.
3. Pharmacokinetic and Pharmacodynamic properties of Tc^{99m} MYOVIEW.
4. Heat Damaged Tc^{99m} RBC`s
5. Radioiodination methods.
6. Descending Chromatography.
7. Biological tests for Radiopharmaceuticals.
8. Passive diffusion Mechanism with examples.
9. Wet Tc^{99m} Generator system principle, advantages and disadvantages.
10. Tc^{99m}WBC labeling methods and Pharmacological properties.

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

[AHS 0921] **SEPTEMBER 2021** **Sub. Code: 2307**
(MAY 2021 EXAM SESSION)

M.Sc. NUCLEAR MEDICINE TECHNOLOGY
FIRST YEAR (From 2019-2020 onwards)
PAPER VII – RADIOPHARMACY - I
Q.P. Code : 282307

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Mo^{99}-Tc^{99m} generator system.
2. Principle and operation procedures of Medical cyclotron.

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

1. Mechanism of ^{18}FDG.
2. Millipore filtration.
3. Formulation of Tc^{99m} DTPA.
4. Calculate and label Tc^{99m} MAA particles, required for a patient with one lung who came for VQ study, if the vial contains 5Lacs particles totally.
5. Interference of Mo^{99} on Tc^{99m} eluate.
6. Pharmokinetic and Pharmadynamic properties of Tc^{99m}Medronate.
7. Particle size of Tc^{99m} sulphur colloid, during heating process.
8. Ascending chromatography.
9. Alumina and Mo^{99} Breakthrough test.
10. Carrier free Radionuclides.

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

[AHS 0222] **FEBRUARY 2022** **Sub. Code: 2307**
(OCTOBER 2021 EXAM SESSION)

M.Sc. NUCLEAR MEDICINE TECHNOLOGY
FIRST YEAR
(Candidates admitted from 2019-2020 onwards – Paper VII)
(Candidates admitted from 2020-2021 onwards – Paper VIII)
PAPER VII & VIII – RADIOPHARMACY - I
Q.P. Code : 282307

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Rb^{82} generator system.
2. Production of N^{13} in cyclotron.

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

1. Mechanism of Tc^{99m}ECD complex.
2. Enumerate on wet and dry generator Tc99m system.
3. Tc99mPlatlet labeling methods.
4. Formulation of Tc99mMIBI.
5. Chemical structures of Tc99mTetrofosmin, Tc99mMDP.
6. Thin layer chromatography & Retardation factor.
7. Criteria's for selecting Radionuclide's for therapy and diagnostic nuclear medicine.
8. Modified In-Vitro RBC labeling method.
9. Synthesis of ^{18}FDG.
10. Tc99m Sulphur colloid labeling for Lymphoscintigraphy.

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

[AHS 0522] **MAY 2022** **Sub. Code: 2307**

M.Sc. NUCLEAR MEDICINE TECHNOLOGY
FIRST YEAR
(Candidates admitted from 2019-2020 onwards – Paper VII)
(Candidates admitted from 2020-2021 onwards – Paper VIII)
PAPER VII & VIII – RADIOPHARMACY - I
Q.P. Code : 282307

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Rb^{82} generator system.

2. Production of N^{13} in cyclotron.

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

1. Mechanism of Tc^{99m}ECD complex.
2. Enumerate on wet and dry generator Tc99m system.
3. Tc99mPlatlet labeling methods.
4. Formulation of Tc99mMIBI.
5. Chemical structures of Tc99mTetrofosmin, Tc99mMDP.
6. Thin layer chromatography & Retardation factor.
7. Criteria's for selecting Radionuclide's for therapy and diagnostic nuclear medicine.
8. Modified In-Vitro RBC labeling method.
9. Synthesis of ^{18}FDG.
10. Tc99m Sulphur colloid labeling for Lymphoscintigraphy.

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