

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

[AHS 0222]

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

Sub. Code: 2308

M.Sc. NUCLEAR MEDICINE TECHNOLOGY

FIRST YEAR

(Candidates admitted from 2019-2020 onwards – Paper VIII)

(Candidates admitted from 2020-2021 onwards – Paper IX)

PAPER VIII & IX – CLINICAL NUCLEAR MEDICINE TECHNIQUES I

Q.P. Code : 282308

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. What are the clinical indications for hepatobiliary scintigraphy? Write in detail the technique of scintigraphy in any one of them.
2. Describe the technique of Multigated Blood pool Acquisition and the steps in processing of images for estimation of ejection fraction of left ventricle.

II. Write Short Notes on:

(10x6 = 60)

1. Split renal function.
2. Principle of lung perfusion study.
3. Principle of Meckel's diverticulum scintigraphy.
4. Thyroxine after total thyroidectomy in thyroid cancer patients.
5. Vesicoureteric reflux.
6. Nephrostomy.
7. Pyeloplasty.
8. Tracheostomy.
9. Ewing's sarcoma.
10. Radiation synovectomy.

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 2308

M.Sc. NUCLEAR MEDICINE TECHNOLOGY

FIRST YEAR

(Candidates admitted from 2019-2020 onwards – Paper VIII)

(Candidates admitted from 2020-2021 onwards – Paper IX)

PAPER VIII & IX – CLINICAL NUCLEAR MEDICINE TECHNIQUES I

Q.P. Code : 282308

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Discuss the principle of radio-immuno-assay (RIA) and radio-immuno-metric assay (IRMA). Advantages and disadvantages of RIA and IRMA.
2. Discuss the various methods of Red Blood Cells (RBC) labeling. What are advantages and disadvantages of each method?

II. Write Short Notes on:

(10x6 = 60)

1. TSH stimulation test.
2. Infection imaging.
3. Vitamin B₁₂ absorption study.
4. Perchlorate discharge test.
5. Adrenal gland imaging.
6. RBC survival study.
7. Lymphatic Scintigraphy.
8. Sentinel node Scintigraphy.
9. Plasma volume estimation.
10. Lacrimal Scintigraphy.

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

[AHS 1023]

OCTOBER 2023

Sub. Code: 2308

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER IX – CLINICAL NUCLEAR MEDICINE TECHNIQUES I**

Q.P. Code: 282308

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Iodinated radiopharmaceuticals.
2. Cyclotron produced radionuclides.

II. Write Short Notes on:

(10x6 = 60)

1. Synthesis of $^{13}\text{NH}_3$.
2. Gastro intestinal imaging agents.
3. RIA.
4. Labeling of MDP.
5. Column generator.
6. Reduced Technetium complexes.
7. ^{81}Rb - $^{81\text{m}}\text{Kr}$.
8. Vitamin B12 absorption study.
9. Thyroid antibodies assay.
10. Criteria for selection of radionuclides for therapy.

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

[AHS 1024]

OCTOBER 2024

Sub. Code: 2308

M.Sc. NUCLEAR MEDICINE TECHNOLOGY

FIRST YEAR (From 2020-2021 onwards)

PAPER IX – CLINICAL NUCLEAR MEDICINE TECHNIQUES I

Q.P. Code: 282308

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Nuclear Reactor Produced Radionuclides. Describe in detail about ^{131}I and ^{67}Ga .
2. Receptor assays.

II. Write Short Notes on:

(10x6 = 60)

1. Synthesis of Carbon 11.
2. Lymphoscintigraphy.
3. Red-cell mass estimation.
4. Gastrointestinal protein loss estimation.
5. IRMA.
6. ELISA.
7. DTPA labeling.
8. ^{68}Ga .
9. Sulphur Colloid.
10. Oxidized Technetium Complexes.

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

[AHS 1025]

OCTOBER 2025

Sub. Code: 2308

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER IX – CLINICAL NUCLEAR MEDICINE TECHNIQUES I**

Q.P. Code: 282308

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. What is parathyroid gland and scintigraphy? Write about indications, radiopharmaceuticals, subtraction imaging and dual time protocol, processing and SPECT CT.
2. FDG PET CT -indications, patient preparation, imaging, processing, follow-up imaging. Explain about artifacts in FDG imaging.

II. Write Short Notes on:

(10x6 = 60)

1. Seizure imaging.
2. Lung perfusion imaging.
3. Gastric emptying time.
4. Testis scintigraphy.
5. Amyloidosis study.
6. Sentinel node probe uses.
7. Lymphoscintigraphy – lower limb edema.
8. Thyroid scintigraphy.
9. I-131 imaging.
10. WBC labeled infection imaging.
