

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

[AHS 0122]

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

Sub. Code: 4033

**M.Sc. MEDICAL PHYSICS
SECOND YEAR (From 2010-2011 onwards)
PAPER III – PHYSICS OF NUCLEAR MEDICINE AND INTERNAL DOSIMETRY
*Q.P. Code : 284033***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Describe the principle of SPECT CT and reconstruction methods.
2. Discuss in detail the MIRD technique to calculate specific absorbed fraction.

II. Write Short Notes on:

(10x6 = 60)

1. Precautions during Radioiodine(I^{131}) therapy.
2. Principle of radionuclide wet generator system.
3. Two Compartment models.
4. Rectilinear scanner and its principle.
5. Radioactive waste management in Nuclear medicine.
6. RIA and IRMA techniques.
7. Layout design recommended by AERB for a SPECT facility.
8. Attenuation Correction in PET.
9. Synthesis of ^{18}F FDG.
10. Thyroid Uptake study.
