

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

**[AHS 1022]**

**OCTOBER 2022**

**Sub. Code: 4033**

**M.Sc. MEDICAL PHYSICS**  
**SECOND YEAR (From 2010–2011 & 2020-2021 onwards)**  
**PAPER III – PHYSICS OF NUCLEAR MEDICINE AND INTERNAL**  
**DOSIMETRY**  
*Q.P.Code : 284033*

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

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

1. Describe in detail design, construction and working of SPECT Gamma camera.
2. Describe planning radiation safety regulatory requirements of AERB to install PET/CT scan.

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

1. Derive the relationship between Physics Half-life and biological Half-life.
2. Explain the Thyrotoxicosis.
3. Delay Tank.
4. The prepared activity of iodine-131 for patient administration after time period lapse of 5 half –life is 12.5 MBq. Calculate what the original activity was.
5. Thyroid uptake measurement.
6. Display system of nuclear medicine devices.
7. P-32 Therapy.
8. Renogram.
9. Principles of RIA and its applications.
10. Specific activity and specific concentration.

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