

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 2306

M.Sc. NUCLEAR MEDICINE TECHNOLOGY

FIRST YEAR

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

(Candidates admitted from 2020-2021 onwards - Paper - VII)

PAPER VI & VII – NUCLEAR MEDICINE INSTRUMENTATION - I

Q. P. Code: 282306

Time: Three hours

Maximum: 100 Marks

Answer ALL Questions

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

1. With the help of a neat diagram explain the working principle of thyroid uptake probe. How do you find out the working distance?
2. Discuss in detail the collimators used in rectilinear scanner. Focal length and focal depth of collimators used in rectilinear scanner.

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

1. Whole body counters.
2. Clinical application of per operative Gamma probe.
3. Working principle of photo multiplier tube (PMT).
4. Iso-response curve of focusing collimator.
5. Various factors affecting the resolution and sensitivity of rectilinear.
6. Modulation Transfer Function (MTF).
7. Profile scanners.
8. Working principle of Gamma Ray Spectrometer (GRS).
9. Spatial resolution.
10. Disadvantage of Rectilinear Scanner.
