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

[AHS 0423] **APRIL 2023** **Sub. Code: 2111**

B.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER I – PHYSICS OF NUCLEAR MEDICINE INSTRUMENTATION
Q.P. Code: 802111

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

I. Elaborate on: **(3 x 10 = 30)**

1. Explain in detail-Interaction of Radiation with Matter.
2. Different Collimators used in Gamma Camera.
3. Explain different types of Detectors, its uses and applications.

II. Write Notes on: **(8 x 5 = 40)**

1. Isotope Calibrator.
2. Photo Multiplier Tube.
3. Calibration of a Spectrometer.
4. Different Statistical test.
5. Principle of Geiger Muller Survey Meter, its uses and its limitations.
6. Properties of ideal Radiopharmaceutical.
7. I - 131 Spectra.
8. Pulse height analyser.

III. Short Answers on: **(10 x 3 = 30)**

1. Inverse square law.
2. Types of measurement error.
3. Pocket dosimeter.
4. Radioactive Technetium.
5. Liquid Scintillation Counter.
6. Crystal used in PET / CT scanner.
7. Sensitivity of gamma camera.
8. Semiconductor detectors.
9. Signal to noise ratio.
10. Thallium activated Sodium Iodine Crystal.

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