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

[AHS 0222] **FEBRUARY 2022** **Sub. Code: 2306**
(OCTOBER 2021 EXAM SESSION)

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 **Answer ALL Questions** **Maximum: 100 Marks**

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

1. What is a Collimator of a Gamma Camera. Discuss in detail about the properties of various types of Collimators commonly used in a Clinical Setting.
2. Describe the construction and operating principles of all Non-Scintillation Detectors.

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

1. Difference between Liquid Scintillation Counting System and Scintillation Crystal System.
2. Define NEMA Standards and its application in Nuclear Medicine.
3. List out and discuss various Quality Control Parameters required in SPECT Camera.
4. Draw a diagram and explain about Digital Storage of Images.
5. Techniques used to acquire Gated Cardiac SPECT.
6. Attenuation Correction by low dose CT images and Scatter Correction methods.
7. Definition of SUV, its calculation and use to generate quantitative measurements.
8. Partial Volume Effect and its significance.
9. Solid State Photo detectors and its use in Nuclear Medicine.
10. How to disinfect SPECT – CT facility during in the era of COVID patient imaging.

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