

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

[LR 1220]

**DECEMBER 2020
(AUGUST 2020 EXAM SESSION)**

Sub. Code: 2123

**BACHELOR IN NUCLEAR MEDICINE TECHNOLOGY
THIRD YEAR
PAPER III – QUALITY ASSURANCE IN NUCLEAR MEDICINE
Q.P. Code: 802123**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Enumerate daily quality control, operating care and maintenance of Gamma camera and caution taken in case of non-uniformity.
2. Brief the routine daily check Quality control of gamma camera, dose Calibrator and uptake probe
3. Enumerate the reference tests of NEMA tests for a SPECT gamma camera. What are the operational checks you will perform?

II. Write notes on:

(8 x 5 = 40)

1. Write about the Jaszczak phantom in respect of QA procedures.
2. Write the test for Intrinsic/Extrinsic uniformity & sensitivity in SPECT scan
3. Write the test for center of rotation (COR) calibration in H-&L- mode in SPECT scan.
4. Write the test for precision and Linearity for Radiation survey meter.
5. External factors affecting Gamma camera performance
6. Count rate capability
7. Field uniformity
8. Standardized uptake value and factors affecting SUV.

III. Short answers on:

(10 x 3 = 30)

1. Energy resolution
2. FWTM
3. Test for a gamma zone monitor.
4. Ring artefact on CT image.
5. Contamination Monitor.
6. Pin source
7. Zero adjustment test.
8. Scintillation detector.
9. Linogram
10. FWHM and pixel size selection in SPECT.
