

**B.Sc. NUCLEAR MEDICINE TECHNOLOGY  
THIRD YEAR  
PAPER III – QUALITY ASSURANCE IN NUCLEAR MEDICINE**

*Q.P. Code: 802123*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Routine quality control procedures for PET scanners.
2. How to set-up a nuclear medicine lab? Explain with Layout diagrams.
3. Enumerate reference tests of NEMA for SPECT system. What are the operational checks you will perform?

**II. Write notes on:**

**(8 x 5 = 40)**

1. Pulse height spectrometry.
2. External factors affecting Gamma camera performance.
3. What does physical performance of PET compare with SPECT?
4. Enumerate desirable qualities of PET scintillator.
5. Enumerate test for precision and linearity in radiation survey meter.
6. Write short notes on flat field and focusing collimator.
7. What is time of light in PET?
8. What are methods can be used in acquisition to optimize resolution in SPECT?

**III. Short answers on:**

**(10 x 3 = 30)**

1. System sensitivity measurement formula.
2. Gamma zone monitor.
3. Photo peak.
4. Isotope calibrator.
5. Step wedge.
6. Resolution.
7. Sodium iodide crystal.
8. Preventive maintenance.
9. Liquid scintillation counter.
10. Modulation transfer function.

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