

[LJ 0816]

AUGUST 2016

Sub.Code :2111

B.Sc. NUCLEAR MEDICINE TECHNOLOGY

SECOND YEAR

PAPER I – PHYSICS OF NUCLEAR MEDICINE INSTRUMENTATION

Q.P. Code: 802111

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain the various types of collimators and their applications.
2. Explain the single and multi-channel analyzers.
3. Explain how to check the reliability of radiation counting instrument with the help of statistical tests.

II. Write Notes on:

(8 x 5 = 40)

1. NaI(Tl) crystal.
2. Iso response curve.
3. Voltage response curve of gas filled radiation detectors.
4. Dose Calibrator.
5. Photomultiplier tube.
6. Uptake probe.
7. Gaussian distribution.
8. Spectra of Tc^{99m} .

III. Short answers on:

(10 x 3 = 30)

1. Ratemeter.
2. Standard deviation.
3. Properties of some Scintillator materials.
4. Dead time.
5. FWHM.
6. Signal to noise ratio.
7. Geometric efficiency of Well counter.
8. Rectilinear scanner.
9. Conversion of counts per minute to activity.
10. Frequency domain.
