

**B.Sc. NUCLEAR MEDICINE TECHNOLOGY
THIRD YEAR**

**PAPER II – RADIATION BIOLOGY AND RADIATION SAFETY IN
NUCLEAR MEDICINE**

Q.P. Code: 802122

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the various devices used for personnel radiation monitoring of radiation workers.
2. Explain the instruments used in Radiation Survey and Monitoring.
3. Describe the absorbed dose, equivalent dose and effective dose.

II. Write notes on:

(8 x 5 = 40)

1. Barriers of Gamma/X ray shielding.
2. Time, distance and shielding in radiation protection.
3. Annual personnel dose for radiation workers as per AERB rules.
4. Describe the cell cycle and explain the different phases.
5. Long term complications of I131 therapy.
6. Radiation protection for occupational workers.
7. Risk vs. benefits in nuclear medicine.
8. How do you ensure work place is free of contamination?

III. Short answers on:

(10 x 3 = 30)

1. Deterministic effects of radiation.
2. Explain the misadministration of isotopes in NM.
3. HVL of lead for Tc99m, I131 and F18.
4. TVT.
5. Gastro Intestinal Syndrome.
6. ALI.
7. Gamma Zone Monitor.
8. Radiation safety considerations in High dose I131 therapy.
9. Cerebrovascular Syndrome.
10. DAC.
