

M.D. DEGREE EXAMINATION
BRANCH XXIV – NUCLEAR MEDICINE
PAPER IV – RADIATION BIOLOGY, RADIATION SAFETY AND
QUALITY ASSURANCE IN NUCLEAR MEDICINE

Q.P. Code :203004

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Quality control procedures for ¹⁸F-FDG.
2. Peptide receptor radionuclide therapy.

II. Write notes on:

(10 x 7 = 70)

1. ⁹⁹Molybdenum generator.
2. Permissible limits of radiation exposure.
3. Mechanisms of localization of radiopharmaceuticals.
4. Tracers for tumor scintigraphy with gamma camera.
5. ¹⁵³Sm-EDTMP.
6. ¹²³Iodine.
7. Quality control of ^{99m}Tc based radiopharmaceuticals.
8. Radionuclides for radiation synovectomy.
9. Basic design of PET-CT facility.
10. Radioimmunoassay.

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Time : Three Hours

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I. Elaborate on:

(2 x 15 = 30)

1. Radiation Emergency in Nuclear Medicine and Preparedness.
2. Direct and indirect action of radiation.

II. Write notes on:

(10 x 7 = 70)

1. Repair of sublethal radiation damage.
2. Relative biologic effectiveness.
3. Casarett's classification of tissue radiosensitivity.
4. Acute radiation syndrome.
5. Cell survival curve.
6. Personnel monitoring.
7. Radioactive waste disposal.
8. Transport Index.
9. Regulatory requirements for cyclotron facility.
10. ICRP recommendation of dose limits.
