

NUCLEAR MEDICINE

PAPER-IV

Time: 3 hours
Max. Marks:100

NM/J/20/24/IV

Important Instructions:

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

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| 1. | a) Stochastic and non-stochastic effects of radiation.
b) Acute radiation syndrome. | 5+5 |
| 2. | Safe disposal of radioactive waste in a department performing SPECT, PET and RAIU. | 10 |
| 3. | How will you manage the death of thyroid cancer patient in isolation ward treated with high dose of radioactive iodine? | 10 |
| 4. | QC tests for radionuclide dose calibrator. | 10 |
| 5. | a) Hospital Radiation safety committee.
b) Delay Tank. | 5+5 |
| 6. | TKIs in thyroid cancer: their specific role, mechanism of action and side effects. | 10 |
| 7. | Role of Nuclear Medicine in stem cell imaging. | 10 |
| 8. | Describe following recent advances:
a) Digital PET
b) FAPI PET | 5+5 |
| 9. | Describe about following recent advances:
a) Total Body PET scanner (long-axial-field-of-view scanner)
b) Artificial Intelligence in Nuclear Medicine | 5+5 |
| 10. | a) Radiomics.
b) ^{99m} Tc-Tilmanocept. | 5+5 |
