

**NUCLEAR MEDICINE**

**PAPER – I**

Time : 3 hours  
Max. Marks : 100

NM/D/17/24/I

**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:

- |     |   |       |
|-----|---|-------|
| 1.  | Quality assurance tests to planar and SPECT gamma camera.   | 10    |
| 2.  | Emergency handling in high dose radionuclide therapy.   | 10    |
| 3.  | Define following:<br>a) Absorbed dose<br>b) Equivalent dose<br>c) Effective dose<br>d) Biologically equivalent dose | 2.5x4 |
| 4.  | Filtered back projection and OSEM image reconstruction algorithm.   | 10    |
| 5.  | Latest ICRP recommendation  | 10    |
| 6.  | eLORA   | 10    |
| 7.  | Comparison of SPECT/CT, PET/CT and PET/MR systems.  | 10    |
| 8.  | Interaction of Radiation with matter.   | 10    |
| 9.  | Binomial, Poisson and normal probability distribution.  | 10    |
| 10. | Modes of Radionuclide decay.  | 10    |

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