

**NUCLEAR MEDICINE**

**PAPER – II**

Time : 3 hours  
Max. Marks : 100

NM/D/17/24/II

**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 control tests required for a radiopharmaceutical before injection to a patient.    | 10  |
| 2.  | Radiopharmaceuticals used for hypoxia imaging.   | 10  |
| 3.  | a) Fluoro estradiol (FES) PET/CT imaging.<br>b) PSMA PET/CT Imaging.                       | 5+5 |
| 4.  | Principles of small molecular imaging with PET/CT & clinical applications.                 | 10  |
| 5.  | Quantitative parameters in myocardial perfusion with SPECT/CT scintigraphy.                | 10  |
| 6.  | a) C-14 urea breath test.<br>b) GFR estimation using plasma sample method                  | 5+5 |
| 7.  | Radiopharmaceuticals used in patients of gastrointestinal bleeding.                        | 10  |
| 8.  | PET/CT imaging in a patient with progressive memory loss.                                  | 10  |
| 9.  | Mechanism of localization of various radiopharmaceuticals.                                 | 10  |
| 10. | Nuclear Medicine techniques for estimation of:<br>a) RBC cell mass<br>b) RBC cell survival | 5+5 |

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