NUCLEAR MEDICINE

PAPER – II

NM/J/17/24/II

Time : 3 hours
Max. Marks : 100

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. a) Define radionuclide generator. 2+8
   b) Various types of generators.

2. Compare and contrast the nuclear reactors and cyclotrons. 10

3. a) ^{68}Ga-Pentixafor 2.5x4
   b) ^{11}C-Choline
   c) ^{18}F-Tau
   d) ^{11}C-Methionine

4. Role of amino acid tracers in brain tumour imaging. 10

5. Radiotracers for myocardial viability study. 10

6. Improvements in the imaging of skeletal system using various radiotracers. 10

7. a) Lu-177 2.5x4
   b) Re-188
   c) Sm-153
   d) Zr-89

8. a) GMP applications in hospital radiopharmacy. 5+5
   b) Quality control of dose calibrator.

9. Quality control measures in dual headed SPECT camera. 10

10. a) Bifunctional chelates 2.5x4
    b) Theranostic principles
    c) Short comings of 18F-FDG PET/CT in tumour response evaluation.
    d) Quality control of 99mTc-Sulfur colloid.

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