

NUCLEAR MEDICINE

PAPER-II

TIME: 3 HOURS  
MAX. MARKS: 100

NM/J/18/24/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. What are the principles and types of generators used in nuclear medicine? Describe the generator produced PET radionuclides. (2+3)+5
2. Describe the various radiopharmaceuticals used for metastatic bone pain palliation and compare two most commonly used radiopharmaceuticals in India. 7+3
3. Mechanism of various radiotracer accumulations in tissues/organs. 10
4. Compare the radiopharmaceuticals used in Radiosynovectomies of various joints. 10
5. Tc99m TRODAT and F18-FluoroDOPA in the diagnosis of Parkinson's disease 5+5
6. a)  $^{11}\text{C}$ -Methionine 5+5  
b)  $^{18}\text{F}$ -FLT
7. a) Curie system of Staging of  $^{123}\text{I}$ -MIBG in Neuroblastoma 5+5  
b) Interventional techniques to improve PET/CT Imaging
8. a) Amyloid Beta Imaging Tracers 5+5  
b) Tau Tracers
9. a) PET/CT Staging of Non-Small Cell Lung Cancers. 5+5  
b) PET/CT scanning for the detection of Insulinoma.
10. Characteristics of therapeutic Radionuclides and discuss in detail Lu-177. 4+6

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