

**NUCLEAR MEDICINE****PAPER-II**Time: 3 hours  
Max. Marks:100

NM/J/19/24/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. Mechanism of uptake of various therapeutic radiopharmaceuticals. Describe each with examples. 10
2. Tabulate characteristics of various radiopharmaceuticals used for bone pain palliation with comparison. 10
3. Various methods of RBC labelling, advantages & disadvantages of each method. 10
4. Nuclear Medicine imaging investigations in medical and surgical emergencies. 10
5. Special imaging techniques/procedures/views in PET-CT imaging 10
6. a) Ga-68-exendin. 5+5  
b) NaF Bone Scan Vs Tc99m Bone scan, mechanism, advantages & disadvantages.
7. a) PET Radiopharmaceuticals used for dementia. 5+5  
b) PET Radiopharmaceuticals used for hypoxia imaging.
8. a) Define Radionuclide purity. What are radionuclide impurity in Tc99m and how to detect them and their prescribed limits? 5+5  
b) Define Radiochemical purity. What are radiochemical impurities in Tc99m and how to detect them with prescribed limits?
9. a) Metabolic Biopsy. 5+5  
b) TI-201 Vs Tc99m-MIBI, mechanism, advantages & disadvantages with respect to tumour and myocardial perfusion imaging.
10. a) What is SUV and what are factors effecting SUV? 5+5  
b) Brief description of various quantitative parameters used in PET other than SUV.

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