

**NUCLEAR MEDICINE**

**PAPER-III**

Time: 3 Hours  
Max. Marks: 100

NM/D/19/24/III

**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. Define biochemical recurrence in prostate cancer. Explain the treatment protocol for PSMA-ligand based radionuclide therapy. 2+8
2. Define hyperparathyroidism and its types. Discuss the role of nuclear medicine in management of parathyroid adenoma. 3+7
3. a) FFR and CFR. 5+5  
b) Cardiac PET protocol for imaging cardiac sarcoidosis.
4. What is refractory thyroid cancer? Discuss the treatment options for a patient with refractory thyroid cancer. 10
5. a) Sentinel node imaging – procedure and uses. 5+5  
b) Radiological anatomy of liver segments and its significance. Also illustrate with diagrams.
6. How will you modify the PET-CECT protocol in evaluation of neuroendocrine tumors and liver metastases, with respect to oral contrast agent and the protocol for contrast enhanced CT? 10
7. a) Hypoxia imaging. 5+5  
b) Tau protein imaging in dementia.
8. a) PET-CT in evaluation of lung cancer. 5+5  
b) Nuclear Medicine in evaluation of obstructive uropathy.
9. a) Imaging in GI bleed. 5+5  
b)  $^{18}\text{F}$ -NaF imaging – advantages and disadvantages.
10. a) Radioimmunotherapy. 5+5  
b) Perchlorate discharge test.

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