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. How would you calculate/prescribe the dose of Iodine-131 for the treatment of a patient with Grave’s disease? Enumerate the advantages and disadvantages of these methods.

2. a) Enumerate various radionuclides useful in bone pain palliation.
b) Samarium – 153 in nuclear medicine practice.

3. a) Clinical applications of PRRNT in adults.
b) Associated technical problems and solutions.

4. Pre-treatment workup, therapy protocol and post treatment follow up the patients for Iodine – 131 MIBG therapy.

5. Decay scheme of:
a) Lu – 177
b) Iodine – 131

6. a) Principles of Radio-immunotherapy and its clinical applications
b) HAMA with radionuclide monoclonal antibodies, strategies to prevent them

7. What is radiosynovectomy? How is it advantageous over conventional methods of treatment? Enumerate the most commonly employed radiopharmaceuticals in radiosynovectomy.

8. a) What are the current guidelines in management of postoperative medullary thyroid cancer?
b) Novel therapies in I-131 refractory thyroid cancer.

9. Tungsten-188/Rhenium-188(W-188/Re-188) generator and newer therapeutic radiopharmaceuticals labeled with Rhenium-188.

10. a) How would you handle death of a patient in the isolation ward who has been administered 150 mCi of Iodine-131 for thyroid cancer 24 hour later?
b) What will be your radiation safety advice/instructions to a young married woman of 30 years age who has been post-operatively administered 130 mCi of I-131 for papillary thyroid cancer?

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