

NUCLEAR MEDICINE

PAPER – I

NM/J/16/24/I

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. Quality control of PET/CT scanner. 10
2. Interaction of radiation with matter and its clinical significance. 5+5
3. a) Define various Parent-daughter equilibriums in Generator systems. 6+4
b) What is the significance of Bateman equation?
4. a) Bayesian analysis. 5+5
b) Various modes of radioactive decay.
5. Major changes of ICRP 2007 compared to ICRP 1990. 10
6. a) Radiosensitizers. 5+5
b) Half value and tenth value layer
7. a) Reconstruction technique in PET/MR, 5+5
b) Designs of PET/MR Gantry available.
8. Effects of radiation on human being and management of radiation accident. 3+7
9. a) Contamination monitor 5+5
b) Gamma ray spectrometer
10. a) Importance of Quality Control (QC). 4+6
b) Elaborate QC procedure of Non-imaging devices.
