

**PG Degree Supplementary Examinations in Radiation Oncology
(MD) July 2025**

Paper I – Radiation Physics, Radiobiology & Other Basic Sciences

Time: 3 hrs

Max marks:100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

Essay:

(20)

1. a) What are the 4 Rs of radiobiology
- b) Discuss in detail about their effect in radiation treatment

Short essays:

(8x10=80)

2. What are the modes of cell death after Radiotherapy
3. ICRU 62
4. Discuss acute effect of whole body exposure to ionising radiation
5. Use of 18 FDG PET in Radiotherapy
6. What is maximum permissible dose. What are AERB recommendations for permissible dose limits and what are Radiation protection principles
7. Enumerate the advantages and disadvantages of Linac over Cobalt 60 units
8. What is thermoluminescence. What are its clinical and laboratory applications
9. What are isodose curves. What are the different methods to achieve ideal isodose distribution
