

QP Code: 101117

Reg. No.:.....

**PG Degree Regular/Supplementary Examinations in Radiation
Oncology (MD) November 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. How will you obtain an ideal matchline between the supraclavicular field and tangential field while using one isocentre and dual isocentres. Explain for a flat breast board and an inclined breast board. Illustrate your answer with diagrams
(10+10)

Short essays: (8x10=80)

2. Describe an ideal brachytherapy source and discuss briefly the isotopes used in brachytherapy for carcinoma cervix
3. What is conventional fractionation. Discuss the evolution of fractionation and various altered fractionation schedule.
4. Compare a Linear Accelerator with a Cobalt 60 teletherapy unit
5. Describe the different types of Penumbra. What are the factors that influence penumbra
(6+4)
6. What are the various interaction of radiation with matter. Discuss Compton effect in detail.
(8+2)
7. What is a flattening free filter and discuss the advantages and disadvantages of flattening free filters
(5+5)
8. Cell cycle checkpoints
9. Describe the histology and lymphatic drainage of the oesophagus. Describe the endoscopic and radiological divisions of the oesophagus
(2+2+6)
