

PG Degree Regular/Supplementary Examinations in Radiation Oncology (MD) January 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. Describe Linear accelerator with a neat labelled diagram. What are the advantages and disadvantages when compared to Tele cobalt machine

Short essays:

(8x10=80)

2. Discuss the various isotopes of iodine.
3. Discuss the parameters of Isodose curves. Illustrate your answer with diagrams.
4. Compare the different systems of implant dosimetry
5. Describe the Linear quadratic model and its clinical application.
6. Describe the anatomy and lymphatic drainage of the hypopharynx. Describe what constitutes T3 and T4 in the hypopharynx. **(4+3+3)**
7. Discuss the strategies in planning to reduce the Dmax for treating a patient with carcinoma cervix with a patient thickness of 20cm. Illustrate your answer with a diagram **(8+2)**
8. Describe a technique for Total Body Irradiation (TBI). Explain the process, including setup, dose distribution, and delivery methods. List the potential complications and their management strategies. **(5+5)**
9. Personal monitoring devices
