

Third Year B.Sc MRT Degree Regular/Supplementary Examinations
April 2025

Radiation Physics II

Time: 3 Hours

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*

Essays:

(3x10=30)

1. Explain PDD and what are the factors affecting PDD.
2. Explain in detail working of a linear accelerator with a diagram
3. Describe the depth dose characteristics of electron beam, factors influencing it, isodose curves for varying beam energies.

Short notes:

(8x5=40)

4. Particle beams used in radiotherapy.
5. Volumetric Arc radiotherapy (VMAT).
6. Klystron.
7. Physical and dynamic wedges.
8. Electronic Portal Imaging Device (EPID).
9. Total Body Irradiation (TBI).
10. Discuss about surface mould therapy
11. Immobilization devices used in radiotherapy.

Answer briefly:

(10x3=30)

12. Decay scheme of cobalt 60.
13. What is Specific activity of a radioactive source.
14. Explain Biological half lives.
15. Define front and back pointer.
16. Integral dose and its significance
17. TAR.
18. Isocentre.
19. What is Secondary Standard Dosimeter (SSD).
20. Cone beam CT.
21. GTV, CTV and PTV.
