

QP CODE: 303018

Reg. No.....

**Third Year B.Sc MRT Degree Supplementary Examinations
October 2023**

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 the depth dose curve of clinical electron beams. Explain virtual SSD.
2. What is IMRT. Write the classifications of IMRT techniques and explain the difference between 3DCRT and IMRT.
3. Explain the various dosimetric systems in brachytherapy.

Short notes:

(8x5=40)

4. Electronic Portal Imaging Device (EPID).
5. Virtual simulation.
6. How can you reduce penumbra of a teletherapy photon beam.
7. Particle radiotherapy.
8. Write the use of front and back pointer.
9. Beam profile.
10. Flattening filter, FF beam and FFF beam.
11. Whole body counter.

Answer briefly:

(10x3=30)

12. Explain briefly Intravascular brachytherapy.
13. What are the characteristics of Cobalt source used in brachytherapy.
14. Explain briefly Electron Arc Therapy.
15. What is Secondary Standard Dosimeter (SSD).
16. Explain Intra Operative Radiotherapy (IORT).
17. Name any three isotopes and their uses in nuclear medicine department.
18. Explain exposure rate constant of a radioactive isotope.
19. What are the advantages and disadvantages of treating patient in SSD and SAD techniques.
20. What is Specific activity of a radioactive source.
21. Explain Biological half lives.
