

QP CODE: 303018

Reg. No.....

**Third Year B.Sc MRT Degree Supplementary Examinations
January 2020**

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 in detail about different modes of online radiotherapy treatment verification.
2. Explain isodose curves, beam flatness and symmetry. Mention the parameters and factors affecting them.
3. Explain in detail on Linear Accelerator Machine

Short notes:

(8x5=40)

4. Discuss the source movement mechanism in HDR brachytherapy machine.
5. Field shaping in electron therapy.
6. Types of penumbra.
7. Describe about the simulation procedures using orthogonal or semi orthogonal images for intra-cavitary brachytherapy.
8. Differentiate between geometrical and dosimetric field size.
9. Define ICRU reference bladder and rectum point in ICR brachy.
10. Discuss the different tissue in homogeneities.
11. Discuss about surface mould therapy

Answer briefly:

(10x3=30)

12. Define exposure rate.
13. Write fiducials (reference marker) in simulation.
14. Define ITV.
15. List out the sources used for permanent implantation.
16. Two differences between step and shoot with dynamic IMRT.
17. Few properties of Cs-137 source.
18. Advantages of VAC-LOCK.
19. Ideal properties of radioisotopes used in medicine.
20. Define front and back pointer.
21. Electron contamination of photon beams
