

QP CODE: 304018

Reg. No.....

**Third Year B.Sc MRT Degree Regular/Supplementary Examinations
August 2021**

Radiological Protection and Statutory Aspects

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. How do cells respond to radiation in the presence and absence of oxygen. What are the effects of radiation on the growing foetus.
2. Describe the radiation protection measures in a Diagnostic Radiology Dept.
3. With the help of a neat diagram describe the planning of a LINAC room.

Short notes:

(8x5=40)

4. Explain 'Exposure' and its SI unit.
5. Cell survival curve.
6. Chemical dosimeters.
7. HVL and TVL and their uses.
8. Role of AERB.
9. Radiation damage of the chromosome. Describe with the help of diagram.
10. Quality assurance in brachytherapy.
11. Weighting factors for neutrons.

Answer briefly:

(10x3=30)

12. A Co-60 source gives 200mR/h at a given point. What is the thickness of lead required to be placed between the source and the point to reduce the dose rate to 0.2mR/h. (HVT of Lead for Co-60 gamma rays is 1.1 cm).
13. Protection measures while using portable x ray machine.
14. Radiation dose to the lens of the eye and its protection measures.
15. Dose limit to trainees.
16. Committed equivalent and effective dose.
17. Organogenesis.
18. Area monitoring.
19. Decontamination procedure for liquid spillage of I-131.
20. Oxygen effect.
21. Dose limits for considering termination of pregnancy.
