

QP CODE: 304018

Reg. No.....

Third Year B.Sc MRT Degree Examinations February 2019

Radiological Protection and Statutory Aspects

Time: 3 Hours

Max Marks: 100

- **Answer all questions**
- **Draw diagrams wherever necessary**

Essays:

(3x10=30)

1. Explain in detail about chromosomal aberrations.
2. Explain theory and working of thermo-luminescence dosimeter.
3. What are the categories for transport of radioactive materials. How are they classified. Explain in detail.

Short notes:

(8x5=40)

4. Acute and late effects of radiation.
5. The 4 Rs of radiobiology and explain each one. Is there a 5th R. If so, explain the same.
6. Internal amplification in gas filled detectors and the advantages of it.
7. Calculate the equivalent dose (HT) for a person exposed to 20mGy of 1 Mev Neutron rays and 5mGy of Alpha and 10 mGy of 6MV X-rays.
8. Write steps taken during spillage of Radioiodine.
9. Periodical safety test in the Linac installation.
10. Area monitor
11. Radiation weighting factor and tissue weighting factor

Answer briefly:

(10x3=30)

12. Dose limits for students and staff.
13. Survey meter.
14. Effects of radiation on DNA.
15. Oxygen Enhancement Ratio (OER).
16. Absorb dose.
17. LET
18. SLD (Sub lethal damage).
19. Records in radiotherapy related to safety.
20. LD 50.
21. Workload.
