

QP CODE: 304018

Reg. No.....

**Third Year B.Sc MRT Degree Supplementary Examinations
August 2017
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 cell cycle and effects of radiation on normal and cells.
2. Explain the dose limits specified by ICRP 60 and atomic energy regulatory board (AERB) for whole body and organs; compare these dose limits as per ICRP and AERB for radiation worker, member of the public and explain why the public has different dose limits.
3. Scintillation detectors and its applications.

Short notes: (8x5=40)

4. Discuss the applications of gas filled detectors in radiation protection and their relative merits.
5. What are single and double strand breaks. Explain them with neat diagram.
6. Steps during the spillage of I-131 unsealed source.
7. HVL and TVL.
8. Relation between RBE and LET.
9. Pocket dosimeter
10. The exposure level at the distance of 50 cm is 16mR/hr. Calculate for 1m, 25cm.
11. Relation between kerma and absorb dose.

Answer briefly: (10x3=30)

12. Protective barriers used in diagnostic radiology.
13. Inverse square law.
14. Ten day rule.
15. ALARA
16. Simple target theory.
17. Oxygen effect.
18. Transport index (used for transport of radioactive materials)
19. Use factor
20. Roentgen and rad.
21. Equivalent dose.
