QP CODE: 304018 **Reg. No.....**

Third Year B.Sc MRT Degree Examinations March 2018

Radiological Protection and Statutory Aspects

Time: 3 Hours **Max Marks: 100**

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

Essays: **(3x10=30)**

1. Explain about the biological effects of radiation.
2. Enumerate the general guidelines in planning a radiation facility which includes diagnostic radiology and radiotherapy. Draw a schematic diagram of a model 6MV linac.
3. Explain emergency preparation in cobalt 60 tele therapy

Short notes: **(8x5=40)**

4. Internal amplification in gas filled detectors and the advantages of it.
5. Inverse square law - explain with an example.
6. Pocket dosimeter.
7. Protection survey in linac with a layout diagram
8. Detail about the protective tools used in radiology.
9. GM counter.
10. The early effects of radiation.
11. Steps involved to reduce the patient dose in CT simulation

Answer briefly: **(10x3=30)**

12. Chromosome aberration.
13. Use factor.
14. Stochastic effect.
15. Internal exposure.
16. The exposure level at the distance of 25 cm is 18 mR/hr. What would be the exposure level at the distance of 1 m and 50 cm.
17. The intensity of radiation 100mR/hr at 1 HVL, calculate for 5HVL.
18. Survey meter
19. Weekly permissible limits for a radiation worker and general public.
20. Primary and secondary barrier.
21. Radiation safety check in radiotherapy.

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