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

Third Year B.Sc MRT Degree Regular/Supplementary Examinations April 2024
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. Explain the annual effective dose limits as prescribed by the Atomic Energy Regulatory Board (AERB) and ICRP recommendation for radiation worker, member of the public and pregnant radiation worker
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 in detail of different types of gas filled detector, principles and its applications

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

4. Acute and late effects of radiation
5. Cell survival curve
6. Steps involved in radiation exposure to public in CT simulation in case of paediatric patient
7. Equivalent and effective dose
8. Periodical safety test in the Linac installation
9. Ten-day rule and its use
10. What are single and double strand breaks. Explain them with neat diagram
11. Fractionation in radiotherapy

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

12. GM counter
13. SLD (Sub lethal damage)
14. Quality assurance testing in fluoroscopy
15. Dose limits for considering termination of pregnancy
16. Tissue weighting factors
17. Chromosome aberration
18. Survey meter
19. Transport index (used for transport of radioactive materials)
20. Autoradiography in brachytherapy
21. Absorbed dose

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