

B.Sc. in Radiation Therapy Technology (BRTT)

Term-End Examination

December, 2013

**BAHI-043 : RADIOBIOLOGY AND RADIATION
PROTECTION**

Time : 3 hours

Maximum Marks : 70

PART - A

Answer **any five** questions. Each question carries
8 marks.

8x5=40

1. Explain Radiation Effects on reproductive organs.
2. Write a note on altered fractionation schedules and their clinical importance.
3. Explain in detail the oxygen effect and its clinical significance.
4. Explain in detail stochastic and deterministic effects and give some examples.
5. Explain RBE and OER and their dependence on LET.
6. What are the primary and secondary barriers in a Telecobalt room ?

7. What are radiation weighting factors and tissue weighting factors ? How are they used in estimating effective dose ? What is the unit of effective dose ?
8. What are the principles of radiation protection ?

PART-B

Write short notes on **any five** of the following.

Each carries **6** marks.

6x5=30

- (a) Radiosensitivity and cell cycle.
 - (b) Necrosis and apoptosis.
 - (c) The relationship between RBE and LET with a neat graph.
 - (d) TCP and NTCP.
 - (e) The daily QA procedure to be performed on a Linear accelerator.
 - (f) The safety checks to be performed on a Telecobalt unit on a daily basis.
 - (g) Telecobalt room construction with a drawing of a typical layout of the room.
 - (h) Personal Monitoring device.
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