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B.Sc. in Radiation Therapy Technology (BRTT)

Term-End Examination

June, 2014

**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. Acute radiation syndrome.
2. Radiation effects on reproductive organs.
3. Radiation effects on skin.
4. Explain LQ model. What do alpha and beta represent ? What is the equation for BED ?
5. What are the safety checks to be performed in a Telecobalt unit on a daily basis ? What is a Tee-rod ? Where is that used ?
6. Define the dose limits as per ICRP 103.
7. Draw a typical room layout for a telecobalt unit.
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) Direct and indirect effects of radiation
 - (b) Necrosis and apoptosis
 - (c) Somatic and genetic effect with examples
 - (d) The procedure you would follow in case of a source getting stuck on a cobalt unit with the patient on the treatment couch
 - (e) The QA to be performed on a linear accelerator on a daily and weekly basis
 - (f) A typical room layout for a HDR brachytherapy unit installation
 - (g) Personnel monitoring devices
 - (h) Gamma zone monitor
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