

**B.Sc. IN RADIATION THERAPY TECHNOLOGY
(BRTT)**

Term-End Examination

December, 2013

**BAHI-041 : ADVANCE RADIOTHERAPY
EQUIPMENT**

Time : 3 Hours

Maximum Marks : 70

PART - A

Answer any five questions. Each question carries
8 marks. 8x5=40

1. Explain the role of Tomotherapy in high precision Radiotherapy and explain how the radiation delivery differs from other forms of external beam radiation therapy.
2. Explain the respiration synchronized imaging and treatment in gated RT and how does it improve the treatment of moving targets ?
3. What is the difference between Gamma Knife and Cyber Knife and give their essential features ?
4. List the importance of PET-CT imaging in radiotherapy planning.
5. Give the basic principles of boron neutron capture therapy and how this noninvasive therapeutic modality is being used for treating locally invasive malignant tumors

6. Describe various quality assurance tests performed daily, weekly, monthly and annually in teletherapy machines.
7. Explain in detail how the portal verification using film is performed.
8. What are the patient specific quality assurance tests carried out for IMRT treatment ?

PART-B

9. Write short notes on **any five** of the following.
Each carries **six** marks. **6x5=30**
 - (a) CT/MRI Based Brachy Therapy
 - (b) Types of MLC and their importance
 - (c) Role of EPID
 - (d) DICOM RT Transfer
 - (e) QA for MLC accuracy
 - (f) Proton therapy
 - (g) 4D, IGRT
 - (h) Winston Lutz test in SRSQA
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