

[LL 1017]

OCTOBER 2017

Sub. Code: 4031

**M.Sc. MEDICAL PHYSICS EXAMS  
SECOND YEAR  
PAPER I – ADVANCED TECHNIQUES OF RADIOTHERAPY**

*Q.P. Code: 284031*

**Time : Three hours**

**Maximum : 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Discuss in details about the step-by-step workflow, starting from patient imaging for Intensity Modulated Arc Therapy till treatment delivery.
2. Describe the HDR treatment unit with a schematic diagram, list the different sources used in various units, source calibration procedure and explain the treatment planning workflow.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Intra-operative radiotherapy.
2. X knife and Gamma Knife.
3. Different types of immobilization.
4. Image Guided Radiation Therapy.
5. Machine specific Quality Assurance for Intensity Modulated Radiation Therapy.
6. Cyber Knife radiotherapy.
7. Sources used for prostate implants.
8. Treatment techniques for intravascular brachytherapy.
9. Electronic brachytherapy.
10. Flowchart of treatment planning process in Three-Dimensional Computed Tomography.

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