[LK 0217] FEBRUARY 2017 **Sub.Code: 1922**

B.Sc. RADIOTHERAPY TECHNOLOGY
THIRD YEAR
PAPER II – RECENT ADVANCES IN RADIOTHERAPY TECHNIQUES

Q.P. Code : 801922

Time: Three Hours **Maximum: 100 Marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. What is total body skin irradiation? Describe the work flow in planning and execution of total-body skin irradiation.
2. Mention various frames that are used for immobilisation in SRS. Describe Treatment planning, patient - set up and QA in CYBERKNIFE.
3. Describe the dosages and field set up for a patient with stage 2B seminoma with diagram. Mention the relevant OARs and its dose constraints.

II. Write Notes on: **(8 x 5 = 40)**

1. What is mantle field irradiation where it is used? Explain mantle field with diagram.
2. Types of multileaf Collimators and tabulate the merits and demerits of each of them.
3. Verification methods used for 3 Dimensional Conformal Radiotherapy.
4. Immobilisation devices.
5. Advantages of CT-MR registration and fusion in Radiotherapy planning.
6. Describe various methods used to deliver tumoricidal dose to a moving tumour.
7. Patient setup verification strategies in conformal radiotherapy.
8. Uses of wedges in Radiotherapy modification of isodose chart by a 30 degree wedge with diagram.

III. Short Answers on: **(10 x 3 = 30)**

1. Cone-beam CT and its role in RT.
2. Inverse planning and its dis-advantages.
3. Name three indications for stereotactic body radiotherapy.
4. Advantages of Gamma knife over Cyberknife.
5. Mention 2 OARs and its dose constraint of Intensity Modulated Radiation Therapy for parotid cancer.
6. What is angiographic localizer box, where is it used?
7. Types of dose volume histograms and its significance.
8. Mention three indications for proton beam therapy.
9. Mention three benign conditions treated using radiotherapy.
10. Three differences between Stereotactic Radiosurgery and stereotactic body radiotherapy.

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