

[LG 0215]

FEBRUARY 2015

Sub.Code :1911

B.Sc. RADIOTHERAPY TECHNOLOGY
SECOND YEAR
PAPER I – PHYSICS OF RADIOTHERAPY AND EQUIPMENTS

Q.P. Code: 801911

Time: Three Hours

Maximum : 100 Marks

Answer All Questions

I. Elaborate on:

(3 x 10 = 30)

1. The source housing and ON – OFF mechanisms of telecobalt units with a neat diagram.
2. The methods used for obtaining broad electron beam and the electron beam collimation system of a Linear Accelerator.
3. The advantages of remote after loading systems in brachytherapy.

II. Write Notes on:

(8 x 5 = 40)

1. Deep x-ray therapy and its applications
2. What are penumbra trimmers? Write the advantages and disadvantages of the same.
3. What is depth of dose maximum? Describe the methods to increase the surface dose.
4. Isocentric technique and its advantages.
5. Advantages of electron beams and the therapeutic range.
6. Wedges and types of wedges used in linear accelerators.
7. Methods used for applying tissue heterogeneity correction.
8. Intracavitary Brachytherapy, the sources and the techniques used for various sites.

III. Short Answers on:

(10 x 3 = 30)

1. Superficial x-ray therapy.
2. What is a magnetron and where is it used?
3. Define percentage depth dose.
4. Define scatter-to- air ratio.
5. The factors used for treatment time calculation in SAD technique.
6. What are isodose charts and their uses?
7. The method for reducing the hot spot and over lapping of beams for two adjacent photon fields.
8. Write the differences between LDR, MDR and HDR brachytherapy treatments.
9. Permanent implant.
10. Calibration of Brachytherapy sources.
