

The West Bengal University of Health Sciences
M.D. (Radiotherapy) November, 2021 Examination

Paper: II

Full Marks: 100

Time : 3 Hours

Answer all questions

1. Describe percentage depth dose. What are the various factors which influence percentage depth dose ? 10
2. Describe physical properties of electron beam. What are the clinical applications of electron beams at present ? 10
3. Describe various dose rates in brachytherapy. What are the advantages of high dose rate brachytherapy as compared to low dose rate ? 10
4. Describe various tumor and target volumes as defined by ICRU report no. 62. Describe the steps of 3-DCRT planning. 10
5. Describe the physical characteristics and clinical uses of Iridium-192 in radiotherapy. 4+6
6. What are the functions of following components of LINAC: i) Wave guide, ii) Modulator, iii) Magnetron, iv) Primary collimator, v) Flattening filter. 10
7. Describe the radiobiological basis of altered fractionation. Describe different types of altered fractionation schedules . 4+6
8. Enumerate beam modifying devices used in radiotherapy. Describe in detail types of wedges available in practice. 5+5
9. What is radiation bystander effect ? Describe various methods of biological dosimetry. 2+8
10. What is ALARA principle ? Explain how this concept has been used for radiation protection. 2+8