

164-NR

M.D. DEGREE EXAMINATION – APRIL, 2013

RADIOTHERAPY

PAPER-I : BASIC SCIENCES

Time: 3 Hours

Max. Marks:100

Note: Answer all questions

All questions carry equal marks

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WRITE SHORT ESSAYS ON THE FOLLOWING:

1. Discuss the steps involved in IMRT treatment of a nasopharyngeal carcinoma.
2. Define wedges. Discuss the use of wedges in the treatment of head and neck malignancies with radiotherapy.
3. What is percentage depth dose and what are the factors influencing it?
4. Define linear energy transfer. Discuss the variation of this entity in the different modalities of particulate radiation.
5. Describe briefly the various beam modifying devices.
6. Define hyperfractionation and discuss the radiobiological rationale.
7. Enumerate the deterministic effects of radiation. Add a note on radiation cataractogenesis.
8. Discuss the effects of radiation on the embryo at various developmental ages.
9. Enumerate the dose limits as per the NCRP guidelines. Add a note on the concept of ALARA.
10. Discuss the late effects of radiation on the lung. Add a note on its management.

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