

**M.D. DEGREE EXAMINATION
BRANCH IX – RADIO THERAPY**

**PAPER I – MEDICAL RADIATION PHYSICS AS APPLIED TO
RADIOTHERAPY AND RADIATION BIOLOGY**

Q.P.Code: 202035

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Define Brachytherapy. Describe the radiobiological rationale for brachytherapy. What are the advantages of HDR brachytherapy over LDR brachytherapy?
2. What are Beam Modifying Devices? Explain in detail about any two of them.

II. Write notes on:

(10 x 7 = 70)

1. Draw a block diagram of Linear Accelerator and label its parts.
2. Maximum Permissible Dose.
3. Unsealed radioisotopes.
4. Modes of cell death after irradiation.
5. Stochastic and non stochastic effects of radiation.
6. Discuss the benefit of accelerated fractionation with respect to Radiobiology.
7. Hypoxic Radiosensitizers.
8. Four field technique in carcinoma cervix.
9. Iridium-192.
10. SLD and PLD (Sublethal damage and Potentially lethal damage).
