

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1122]

**NOVEMBER 2022**

**Sub. Code: 1943**

**B.Sc. RADIOTHERAPY TECHNOLOGY  
FIRST YEAR (Regulation 2018-2019)  
PAPER III – RADIOTHERAPY PHYSICS & PRINCIPLES OF RADIOTHERAPY  
Q.P NO. 801943**

**Time: Three Hours**

**Answer All questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Describe in detail about the construction and working of Co-60 teletherapy unit.
2. Describe the Intensity Modulated Radiotherapy.
3. What are the disadvantages of conventional radiotherapy? Describe briefly the three dimensional techniques and their advantages.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Factors that influence percentage depth dose.
2. Tissue Equivalent Materials.
3. Various patient immobilization devices used in radiotherapy.
4. Physical, biological half-life and their relationship.
5. Simulator.
6. Shielding blocks.
7. Explain SSD and SAD techniques and list their merits and demerits.
8. What is Radioactive series and radioactive equilibrium?

**III. Short answers on:**

**(10 x 3 = 30)**

1. Ionization.
2. Wedges.
3. Secondary electrons.
4. Port film.
5. SRS.
6. What is the role of bolus in radiotherapy?
7. Define linear energy transfer and state its unit.
8. Usage of compensators.
9. Particle range.
10. Bragg curve.

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