

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

[AHS 0423]

APRIL 2023

Sub. Code: 1943

B.Sc. RADIOTHERAPY TECHNOLOGY
FIRST YEAR (Regulation 2018-2019 onwards)
PAPER III – RADIOTHERAPY PHYSICS & PRINCIPLES OF RADIOTHERAPY
Q.P. Code: 801943

Time: Three Hours

Answer All questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Artificial Radioactivity. List out the various types of sources used in RT and their properties.
2. Describe in detail the construction and working of a remote after loading Brachytherapy unit.
3. Elaborate on Stereotactic Radiotherapy and Radio surgery and their advantages over other Radiotherapy techniques.

II. Write notes on:

(8 x 5 = 40)

1. Total attenuation co-efficient.
2. Image Guided Radiotherapy.
3. Factors affecting Tissue Air Ratio, Back Scatter factor and Tissue Maximum Ratio.
4. Radio isotopes used in Medicine.
5. SRT and SRS.
6. Immobilization devices in Radiotherapy.
7. Relationship between half life and decay constant.
8. Tissue Equivalent Materials.

III. Short answers on:

(10 x 3 = 30)

1. Decay Process of Co-60 Source.
2. Wedge filter
3. Tissue Maximum dose.
4. Port film.
5. Particle range.
6. What is the role of a phantom in dosimetry?
7. Define Linear Energy Transfer and state its unit?
8. What is the advantage of Tomotherapy over conventional RT?
9. Explain Binding Energy.
10. Absorbed dose.
