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

[AHS 1023]   **OCTOBER 2023**   **Sub. Code: 4011**

M.Sc. MEDICAL PHYSICS
FIRST YEAR (From 2020-2021 onwards)
PAPER II – RADIATION PHYSICS

Q.P. Code: 284011

Time : Three Hours   **Answer ALL questions**   **Maximum : 100 marks**

I. Elaborate notes on: **(2 x 20 = 40)**

  1. Interaction of charged particles with matter and their clinical importance.

  2. Various methods of radioactive decay.

II. Write notes on: **(10 x 6 = 60)**

  1. Wave theory and Quantum theory of electromagnetic radiation.
  2. Linear and Mass attenuation coefficient.
  3. Law of radioactive disintegration and derive the equation for the number of atoms present at any instant.
  4. Neutron bombardment and proton bombardment.
  5. Liquid and nuclear shell model.
  6. Autotransformer and its applications.
  7. Cerenkov radiation.
  8. Bragg Peak Curveand the spread of Bragg peak in clinical use.
  9. Relationship between Kerma, Exposure and Absorbed dose.
  10. Continuous Slowing Down Approximation (CSDA).

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