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

[AHS 0222] **FEBRUARY 2022** **Sub. Code: 4011**
(OCTOBER 2021 EXAM SESSION)

M.Sc. MEDICAL PHYSICS
FIRST YEAR
(Candidates admitted from 2010-2011 onwards – Paper I)
(Candidates admitted from 2020-2021 onwards – Paper II)
PAPER I & 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. Explain the Electromagnetic wave Spectrum and Quantum model.
2. Explain the Transformer working principle and its types

II. Write Short Notes on: **(10x6 = 60)**

1. Write the SI unit of Magnetic flux density and Electric capacitance.
2. Explain the Alpha-Proton nuclear reactions.
3. Explain Pair production and its application.
4. Explain the Atomic Structure.
5. What is the fraction of radiation comes out from 15cm thick brick wall, if its Half Value Layer(HVL) is 5cm.
6. Explain about Radiation Weighting Factor.
7. What is LET(Linear Energy Transfer) and RBE(Relative Biological Effectiveness).
8. What is Half Life Period and give 3 radioactive material's half life period.
9. Explain the Mutual and Self Induction.
10. Explain the Beta negative decay with example.

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