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

[AHS 0321] **MARCH 2021** **Sub. Code: 4014**

(OCTOBER 2020 EXAM SESSION)

M.Sc. MEDICAL PHYSICS

FIRST YEAR (From 2010-2011 onwards)

PAPER IV – RADIATION DOSIMETRY AND STANDARDIZATION

Q.P. Code : 284014

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Explain in detail about the calibration of high energy photons using IAEA TRS-398 protocol.
2. Discuss in detail about the methods available for neutron dose measurements.

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

1. Dose equivalent, Ambient and directional dose equivalent.
2. Mass energy transfer and Mass energy absorption coefficients.
3. Radioactive tracers.
4. Charge particle equilibrium.
5. Cyclotron produced isotopes.
6. Bragg –Gray cavity theory
7. Beta gamma coincidence counting.
8. Explain about the free air ionization chamber with a neat diagram.
9. Fricke dosimeter.
10. Define apparent activity, Reference Air Kerma Rate, Air Kerma Rate constant.

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