

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

[AHS 0222]

**FEBRUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 4014

**M.Sc. MEDICAL PHYSICS
FIRST YEAR**

(Candidates admitted from 2010-2011 onwards – Paper IV)

(Candidates admitted from 2020-2021 onwards – Paper V)

PAPER IV & V – 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 Spencer Attix and Burlin cavity theories in detail.
2. Explain in detail about the calibration of a HDR source using well type chamber.

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

1. Show that the roentgen to rad conversion factor for air is 0.876 under CPE.
2. Photo neutrons.
3. Reactor produced isotopes.
4. Kerma, Absorbed dose and centre of electron production .
5. IAEA TRS -277
6. Liquid scintillation counters.
7. Beer – Lambert's law and applications of chemical dosimeters in radiotherapy.
8. FBX dosimeter.
9. Theory and operation of Silicon Diode detectors.
10. Discuss about the calibration of survey meters and its recommended frequency of calibration in India.
