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

**[AHS 0522]** **MAY 2022** **Sub. Code: 2304**

**M.Sc. NUCLEAR MEDICINE TECHNOLOGY**
**FIRST YEAR**
**(Candidates admitted from 2019-2020 onwards – Paper IV)**
**(Candidates admitted from 2020-2021 onwards – Paper V)**
**PAPER IV & V – RADIATION PHYSICS AND RADIATION CHEMISTRY**
***Q.P. Code : 282304***

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

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

1. Explain the construction and production of Radionuclides in a Nuclear Rector.

2. What is pH value? Describe role of pH in preparation of radiopharmaceuticals.

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

1. Explain beta plus and beta minus decay with examples.
2. What is radioactivity? Derive the decay equation $N = Noe(-\lambda t)$.
3. Radio isotopes used in Nuclear Medicine.
4. Liquid Scintillation Detectors.
5. Multi channel analyser system.
6. Describe the coordinate covalent bond.
7. Preparation of standard (Reference) solution.
8. Normality of solution.
9. Difference of Solute and Solvents.
10. What are Buffer solutions?

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