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

[AHS 0423] **APRIL 2023** **Sub. Code: 2112**

B.Sc. NUCLEAR MEDICINE TECHNOLOGY
SECOND YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER II – RADIOCHEMISTRY AND RADIO PHARMACY
Q.P. Code: 802112

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

I. Elaborate on: **(3 x 10 = 30)**

1. Write the Various Quality Controls for a Radiopharmaceutical.
2. Describe the Principles of Cyclotron produced Radionuclides with examples.
3. Describe the Chemistry of Tc99m, its Reduction and Labelling.

II. Write Notes on: **(8 x 5 = 40)**

1. Gel chromatography.
2. Tc99m Macro aggregated Albumin.
3. Characteristics of Ideal Therapeutic Radiopharmaceutical.
4. Transient Equilibrium.
5. Tc99m GHA labelling procedure.
6. Tracers for Infection Imaging.
7. Lymphoscintigraphy Tracers.
8. Short lived Radionuclides.

III. Short Answers on: **(10 x 3 = 30)**

1. Sulfur colloid labelling.
2. Normality of Solution.
3. Sesta MIBI.
4. Two solvent systems in Tc99m extraction.
5. What are Buffer solutions?
6. Physical half –life.
7. Carrier Free State.
8. Radiolysis.
9. Specific activity.
10. Covalent co-ordinate bond.

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