

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

[AHS 0321]

**MARCH 2021**

**Sub. Code: 2112**

**(AUGUST 2020 EXAM SESSION)**

**B.Sc. NUCLEAR MEDICINE TECHNOLOGY**

**SECOND YEAR (Regulations 2010-2011)**

**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. What are the different Nuclear Reactor produced medically useful Isotopes?  
Write in detail on any ONE isotope.
2. Mechanisms of localization of radiopharmaceuticals. Explain RBC cell labeling with Tc99m.
3. Explain various radiochemical quality control procedures for Radiopharmaceuticals.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Germanium – Gallium generator.
2. Fluorine – 18 radiopharmaceuticals.
3. Co2 Urea breathe wave test.
4. Why cadmium rods and graphite rods are used in reactor?
5. P-C-P bonds.
6. What is the function of push-button isotope selector on a dose calibrator?
7. Secular equilibrium.
8. Medical Cyclotron principle.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Why do you wait for 3 hours for bone scan imaging after injection?
2. Mention the dose limits of packages of radioactive material.
3. Tc99m Phytate.
4. Mobile phase.
5. Tc99m GHA labeling procedure.
6. Chemical structure of MDP.
7. Neutron capture.
8. Labelling IDA derivatives with Tc99m.
9. Stereoisomers.
10. Carrier free.

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