[LG 0215] **FEBRUARY 2015** **Sub.Code :2112**

B.Sc. NUCLEAR MEDICINE TECHNOLOGY

SECOND YEAR

PAPER II – RADIOCHEMISTRY AND RADIO PHARMACY

Q.P. Code: 802112

Time: Three Hours **Maximum: 100 Marks**

Answer All questions

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

1. Describe the six major methods in the preparation of labeled compounds.
2. What are ligands and chelating agents? Define coordination number and explain complex formation.
3. Discuss the different radiopharmaceutical used for hepato biliary and reticuloendotehlial imaging of liver.

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

1. Mention the methods of sterilization.
2. Describe the different mechanisms of localization of radiopharmaceutical in a given organ.
3. Mention the upper limit of Mo99 that can be permitted in Mo-Tc99m eluate.
4. Why cadmium rods and graphite rods are used in reactor?
5. Describe the rabbit test for pyrogenicity testing.
6. Mention the features of an ideal therapeutic radiopharmaceutical.
7. List the ideal characteristics of a radionuclide generator.
8. What is the function of push-button isotope selector on a dose calibrator?

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

1. Mention the different radiopharmaceutical used for cerebral perfusion imaging.
2. What are the common radionuclide contaminants in Moly generator?
3. Why is the specific activity of fission produced Isotopes are higher than those in reactor (n.γ)?
4. What is the difference between MAA and colloid particles?
5. Why are gelatin and EDTA added toTc99m sulfur colloid?
6. State the recommended temperature for storage of Tc9m sulfur colloid.
7. Why do you wait for 3 hours for bone scan imaging after injection?
8. Mention the dose limits of packages of radioactive material.
9. What are the differences between an ionization chamber and Geiger Muller counter?
10. Name the two solvent systems used in Tc99m extraction.

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