

**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. Discuss the different radiopharmaceuticals used for hepatobiliary and Reticuloendothelial imaging of liver.
2. Describe the structure of nephron and various radiopharmaceuticals used in renal function evaluation.
3. What are ligands and chelating agents? Define coordination number and explain complex formation.

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

1. Germanium – Gallium generator.
2. Describe the rabbit test for pyrogenicity.
3. Mention about Target to non-Target Ratio.
4. Why are gelatin and EDTA added to Tc99m sulfur colloid?
5. What are the differences between an ionization chamber and Geiger Muller counter?
6. Basic principles of Radio iodination.
7. Medical Cyclotron principle.
8. Redox reactions.

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

1. Various bone imaging tracers.
2. Chelating agents.
3. Centrifuge.
4. Tracers used for infection imaging.
5. What is the compound for myocardial infarct imaging?  
Mention the time of imaging after injection and dose used.
6. What is Bexar? Describe briefly about its use.
7. How do you perform Meckel's diverticulum imaging?
8. What is the common radiopharmaceutical used for lymphoscintigraphy?  
What are the common diseases that can be diagnosed?
9. Mention the various ventilation scan agents.
10. State the disadvantage of liquid column generator (solvent extraction).