



Pharmaceutical inorganic chemistry Unit V

[Radiopharmaceuticals » PHARMACAREERS](#)

- 1. What are radiopharmaceuticals primarily used for?**
 - A. Pain relief
 - B. Diagnostic imaging
 - C. Blood pressure regulation
 - D. Hormone replacement
- 2. Which element is commonly used in the radiopharmaceutical technetium-99m?**
 - A. Iodine
 - B. Carbon
 - C. Technetium
 - D. Xenon
- 3. Which of the following radiopharmaceuticals is used for thyroid imaging?**
 - A. Iodine-131
 - B. Fluorine-18
 - C. Gallium-67
 - D. Indium-111
- 4. What type of radiation is emitted by technetium-99m?**
 - A. Alpha particles
 - B. Beta particles
 - C. Gamma rays
 - D. Neutrons
- 5. Which radiopharmaceutical is used in PET scans?**
 - A. Iodine-123
 - B. Fluorine-18
 - C. Thallium-201
 - D. Carbon-11
- 6. What is the half-life of technetium-99m?**
 - A. 2 hours

For more regular updates you can visit our social media accounts,

Instagram: [Follow us](#)

Facebook: [Follow us](#)

WhatsApp: [Join us](#)

Telegram: [Join us](#)



- B. 6 hours
 - C. 12 hours
 - D. 24 hours
7. **In which form are radiopharmaceuticals typically administered to patients?**
- A. Oral tablets
 - B. Injections
 - C. Topical creams
 - D. Inhalation
8. **Which of the following radiopharmaceuticals is used for bone imaging?**
- A. Strontium-89
 - B. Iodine-131
 - C. Fluorine-18
 - D. Technetium-99m
9. **What is the primary purpose of radiopharmaceuticals in therapeutic applications?**
- A. To treat infections
 - B. To kill cancer cells
 - C. To regulate heart rate
 - D. To reduce inflammation
10. **Which radiopharmaceutical is commonly used for myocardial perfusion imaging?**
- A. Thallium-201
 - B. Gallium-67
 - C. Indium-111
 - D. Iodine-123
11. **What is the primary advantage of using radiopharmaceuticals in diagnostic imaging?**
- A. Non-invasiveness
 - B. Cost-effectiveness
 - C. Rapid results
 - D. High sensitivity and specificity
12. **Which of the following isotopes is used in the treatment of hyperthyroidism?**
- A. Carbon-14
 - B. Iodine-131



- C. Technetium-99m
- D. Gallium-67

13. What is the role of a radiopharmacist?

- A. To diagnose diseases
- B. To prepare and dispense radiopharmaceuticals
- C. To administer radiotherapy
- D. To perform imaging scans

14. Which of the following radiopharmaceuticals is used for brain imaging?

- A. Iodine-123
- B. Fluorine-18
- C. Thallium-201
- D. Indium-111

15. What is a common side effect of radiopharmaceuticals used in therapy?

- A. Nausea
- B. Hair loss
- C. Dry mouth
- D. Fatigue

16. Which radiopharmaceutical is used for liver and spleen imaging?

- A. Technetium-99m sulfur colloid
- B. Iodine-123
- C. Gallium-67
- D. Thallium-201

17. What is the purpose of a gamma camera in nuclear medicine?

- A. To produce magnetic fields
- B. To detect gamma radiation from radiopharmaceuticals
- C. To measure blood pressure
- D. To deliver chemotherapy

18. Which radiopharmaceutical is used for sentinel lymph node imaging?

- A. Technetium-99m sulfur colloid
- B. Iodine-131
- C. Indium-111



- D. Gallium-67
19. **What is the main difference between diagnostic and therapeutic radiopharmaceuticals?**
- A. Diagnostic radiopharmaceuticals emit alpha particles, while therapeutic ones emit gamma rays.
 - B. Diagnostic radiopharmaceuticals are used for imaging, while therapeutic ones are used for treatment.
 - C. Diagnostic radiopharmaceuticals are taken orally, while therapeutic ones are injected.
 - D. Diagnostic radiopharmaceuticals are more expensive than therapeutic ones.
20. **Which radiopharmaceutical is used for renal imaging?**
- A. Technetium-99m MAG3
 - B. Iodine-123
 - C. Gallium-67
 - D. Thallium-201
21. **What type of radiation does Iodine-131 emit?**
- A. Alpha particles
 - B. Beta particles and gamma rays
 - C. Neutrons
 - D. X-rays
22. **What is the primary function of a PET scan in nuclear medicine?**
- A. To produce high-resolution anatomical images
 - B. To detect metabolic activity in tissues
 - C. To measure blood flow in arteries
 - D. To monitor bone density
23. **Which radiopharmaceutical is used for pulmonary perfusion imaging?**
- A. Technetium-99m MAA (macroaggregated albumin)
 - B. Iodine-123
 - C. Fluorine-18
 - D. Thallium-201
24. **What is the purpose of using a radiotracer in nuclear medicine?**
- A. To enhance MRI images
 - B. To track biological processes
 - C. To improve ultrasound accuracy



- D. To measure blood glucose levels
25. **Which radiopharmaceutical is used for infection imaging?**
- A. Gallium-67
 - B. Iodine-123
 - C. Technetium-99m
 - D. Indium-111
26. **What is the main purpose of using fluorine-18 in PET scans?**
- A. To detect bone fractures
 - B. To measure brain activity
 - C. To image the thyroid gland
 - D. To visualize metabolic processes
27. **Which radiopharmaceutical is used for prostate cancer imaging?**
- A. Technetium-99m
 - B. Iodine-131
 - C. Gallium-68 PSMA
 - D. Indium-111
28. **What is the role of a cyclotron in the production of radiopharmaceuticals?**
- A. To produce gamma rays
 - B. To accelerate charged particles to create radioactive isotopes
 - C. To generate high-frequency sound waves
 - D. To measure heart rate
29. **Which radiopharmaceutical is used for skeletal imaging?**
- A. Technetium-99m MDP (methylene diphosphonate)
 - B. Iodine-123
 - C. Gallium-67
 - D. Thallium-201
30. **What is the primary function of a SPECT scan in nuclear medicine?**
- A. To produce 3D images of organs
 - B. To measure blood oxygen levels
 - C. To monitor heart rate
 - D. To detect brain tumors



31. Which radiopharmaceutical is used for cardiac stress tests?

- A. Iodine-123
- B. Fluorine-18
- C. Thallium-201
- D. Technetium-99m

32. What is the purpose of using radiopharmaceuticals in sentinel node biopsy?

- A. To diagnose bone fractures
- B. To locate lymph nodes
- C. To measure lung function
- D. To monitor kidney function

33. Which radiopharmaceutical is used for PET/CT scans in oncology?

- A. Technetium-99m
- B. Gallium-68
- C. Iodine-123
- D. Indium-111

34. What is the purpose of using radiopharmaceuticals in radionuclide therapy?

- A. To enhance MRI images
- B. To deliver targeted radiation to tumors
- C. To measure blood glucose levels
- D. To track brain activity

35. Which radiopharmaceutical is used for liver function imaging?

- A. Technetium-99m sulfur colloid
- B. Iodine-131
- C. Gallium-67
- D. Thallium-201

36. What is the role of a radiochemist in the production of radiopharmaceuticals?

- A. To diagnose diseases
- B. To synthesize and purify radioactive compounds
- C. To administer radiotherapy
- D. To perform imaging scans

37. Which radiopharmaceutical is used for adrenal gland imaging?



- A. Iodine-131
- B. Technetium-99m
- C. Gallium-67
- D. Iodine-123

38. **What is the primary purpose of using radiopharmaceuticals in cancer treatment?**

- A. To measure bone density
- B. To deliver targeted radiation therapy
- C. To monitor blood pressure
- D. To enhance CT images

39. **Which radiopharmaceutical is used for tumor imaging in the brain?**

- A. Fluorine-18
- B. Iodine-123
- C. Gallium-67
- D. Thallium-201

40. **What is the primary function of a radiopharmaceutical in nuclear cardiology?**

- A. To detect liver function
- B. To measure kidney function
- C. To assess heart perfusion and function
- D. To monitor lung function

Answers

1. Radiopharmaceuticals are primarily used for diagnostic imaging.
2. The element commonly used in the radiopharmaceutical technetium-99m is technetium.
3. The radiopharmaceutical used for thyroid imaging is iodine-131.
4. Technetium-99m emits gamma rays.
5. The radiopharmaceutical used in PET scans is fluorine-18.



6. The half-life of technetium-99m is 6 hours.
7. Radiopharmaceuticals are typically administered to patients in the form of injections.
8. The radiopharmaceutical used for bone imaging is technetium-99m.
9. The primary purpose of radiopharmaceuticals in therapeutic applications is to kill cancer cells.
10. Thallium-201 is commonly used for myocardial perfusion imaging.
11. The primary advantage of using radiopharmaceuticals in diagnostic imaging is their high sensitivity and specificity.
12. The isotope used in the treatment of hyperthyroidism is iodine-131.
13. The role of a radiopharmacist is to prepare and dispense radiopharmaceuticals.
14. Fluorine-18 is used for brain imaging.
15. A common side effect of radiopharmaceuticals used in therapy is fatigue.
16. The radiopharmaceutical used for liver and spleen imaging is technetium-99m sulfur colloid.
17. The purpose of a gamma camera in nuclear medicine is to detect gamma radiation from radiopharmaceuticals.
18. Technetium-99m sulfur colloid is used for sentinel lymph node imaging.
19. The main difference between diagnostic and therapeutic radiopharmaceuticals is that diagnostic radiopharmaceuticals are used for imaging, while therapeutic ones are used for treatment.



20. The radiopharmaceutical used for renal imaging is technetium-99m MAG3.
21. Iodine-131 emits beta particles and gamma rays.
22. The primary function of a PET scan in nuclear medicine is to detect metabolic activity in tissues.
23. The radiopharmaceutical used for pulmonary perfusion imaging is technetium-99m MAA (macroaggregated albumin).
24. The purpose of using a radiotracer in nuclear medicine is to track biological processes.
25. The radiopharmaceutical used for infection imaging is gallium-67.
26. The main purpose of using fluorine-18 in PET scans is to visualize metabolic processes.
27. The radiopharmaceutical used for prostate cancer imaging is gallium-68 PSMA.
28. The role of a cyclotron in the production of radiopharmaceuticals is to accelerate charged particles to create radioactive isotopes.
29. The radiopharmaceutical used for skeletal imaging is technetium-99m MDP (methylene diphosphonate).
30. The primary function of a SPECT scan in nuclear medicine is to produce 3D images of organs.
31. Thallium-201 is used for cardiac stress tests.
32. The purpose of using radiopharmaceuticals in sentinel node biopsy is to locate lymph nodes.
33. The radiopharmaceutical used for PET/CT scans in oncology is gallium-68.



34. The purpose of using radiopharmaceuticals in radionuclide therapy is to deliver targeted radiation to tumors.
35. The radiopharmaceutical used for liver function imaging is technetium-99m sulfur colloid.
36. The role of a radiochemist in the production of radiopharmaceuticals is to synthesize and purify radioactive compounds.
37. The radiopharmaceutical used for adrenal gland imaging is iodine-123.
38. The primary purpose of using radiopharmaceuticals in cancer treatment is to deliver targeted radiation therapy.
39. The radiopharmaceutical used for tumor imaging in the brain is fluorine-18.
40. The primary function of a radiopharmaceutical in nuclear cardiology is to assess heart perfusion and function.