Clinical Nuclear Medicine Question Bank

1. NM in Acute Medicine
2. Renal Disorder
3. GIT
4. CNS & Psychiatric Disorder
5. Tumor Diagnosis & Treatment & PET
6. Bones & Joints
7. Thyroid Disorder
8. Lung Disorder
9. Liver & GB disorder
10. Heart disorder
11. Infection
12. Miscellaneous
1. **NM in Acute Medicine**  

**Short Question**

1. Assessment of infectious bone lesion with NM technique. (10-12/06)  
2. Various RPs in emergency room with indication (10-2005)  
3. NM Techniques in Trauma injuries. (15-1993)  
5. Various RPs used in emergency room with indication (10- May 2005)  
6. RPs helpful in the evaluation of patients of road traffic accidents. (10- Dec 2005)  

2. **Renal Disorder**

**Long question**

1. Discuss patho-physiology of Renal causes of Hypertension & detail the Radio- nuclide procedure you would undertake to assist in management. (25-1995)  
2. Discuss the RN techniques in the evaluation of the renal system (25-1989)

**Short Question**

1. Radionuclide Procedure for organ transplant assessments. (10-12/06)  
2. RPs in Kidney transplants (10-2005)  
3. Renal dynamic scan & its indication (10-2005)  
5. NM techniques in evaluation of chronic renal failure. (15-1993)  
6. Usefulness of renal transit times in various renal disorders. (10-1994)  
10. RN studies in renal transplant patients. (15-1996)  
12. NM diagnosis recurrent UTI. (15-1997)  
13. RN evaluation o obstructive uropathy. (15-1997)  
14. RPs for Renal Transplants (10- May 2005)  
15. Renal dynamic scan & its indications (10- May 2005)
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16. Role of NM study in renal transplant (10-2002)
17. Pitfall in diuretic renography. (10-2002)
19. Dynamic Renal scintigraphy with 99mTc-DTPA & GFR. (10-2007)
20. How will you proceed to investigate a young hypersensitive patient with the aid of RN investigation? (25-1990)
22. Renography & its modifications. (15-1992)
23. Probe Renography (15-1992)
26. Testicular imaging with RN (15-1993)
27. GFR estimation using radionuclide technique (15-1993)

3. GIT
Long question
1. Describe briefly the procedure & adv of RN procedures in diagnosis of various GI diseases (excluding Hepatobiliary & pancreatic disorder). (25-1997)

Short Question

1. GE function studies (10-2005)
2. Intervention in GI NM procedures (15-1994)
3. RN investigations in oesophageal pain (15-1995)
4. Radionuclide detection of ectopic gastric mucosa (10-1995)
5. Schilling test. (15-1996)
6. Role of NM in GI bleeding disease. (15-1996)
7. GE function studies (10-May 2005)
8. RN imaging of pancreas (10-Dec 2005)
9. RN studies for evaluation of GI bleeding. (10-2002)
10. Discuss technique of spleen scan. (10-1989)
   What are the indications for spleen scan? Describe the technique of preparation of Cr-51 RBC for spleen scan.
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12. 99mTc-RBCs scan for GI bleeding protocol. (10-2007)
13. RN evaluation of GI bleeding. (15-1990)
15. GE scintigraphy (mention the clinical indications & other modalities used in the diagnosis). (15-1991)
16. RN investigations of GI bleeding (15-1992)
17. Technique of imaging Meckles Diverticulam (15-1992)

4. CNS & Psychiatics Disorder

Short Question
1. NM in management of patient of epilepsy. (10-12/06)
2. RPs for SPECT brain imaging (10-12/06)
3. Functional Brain imaging with SPECT (10-2005)
4. Enumerate various RPs for SPECT brain studies indicating their clinical utility. (15-1994)
5. RPs for regional cerebral blood flow studies (15-1994)
12. Nero imaging SPECT RPs. (15-1997)
13. 210 TI in brain imaging (15-1997)
14. Functional brain imaging with SPECT (10- May 2005)
15. Evaluation of hydrocephalus (10- Dec 2005)
16. RN imaging studies in Epilepsy. (10-2002)
17. Cerebral perfusion SPECT study – procedure for 99mTc HMPAO & ECD. (10-2007)
18. RN for regional cerebral blood flow study. (15-1991)
5. Tumor Diagnosis & Treatment

Short Question

1. Radionuclide technique for breast malignancy. (10-12/06)
2. RPs in diagnosis & FU of neuro-endocrine disorders. (10-12/06)
3. Apoptosis Imaging (10-12/06)
4. Tumour imaging agents (10-2005)
5. Breast Cancer & nuclear technique (10-2005)
6. Discuss somatostatin receptor scintigraphy (15-1994)
7. MIBG scintigraphy. (10-1994)
10. MIBG in nuclear imaging and therapy. (15-1997)
12. Evaluate the uses of 67Ga in clinical medicine. Give a brief account of its production in India. (25-1997)
13. Tumor imaging agents (10- May 2005)
15. RPs for infection/inflammation imaging (10- Dec 2005)
16. Tumor seeking RPs in routine Gamma camera imaging (10- Dec 2005)
17. Radio-immuno therapy (10- Dec 2005)
18. Radiolabelled MIBG in nuclear imaging & therapy (10-2002)
22. Role of NM procedures in staging of malignant disorder. (10-1989)
23. RN used in therapy of tumor. (10-2007)
25. Describe the role of NM in oncology with special mention on recent trends. (25-1990)
27. Extra-myocardial applications of Thallium-201 isotope (15-1992)
28. 131-I MIBG scintigraphy (15-1992)
29. Somatostatin scintigraphy (15-1993)

**PET & PET RPs**

**Long question**
1. Discuss the recent development in PET in particular reference to RPs. (25-1994)

**Short Question**
1. Clinical application of Non- FDG scintigraphy. (10-12/06)
2. Gives an account for non-fluoridal PET RPs (10-12/06)
3. Discuss the role of 18F-FDG PET imaging in oncology. (15-1994)
4. PET studies in Tumor imaging. (15-1995)
6. PET in oncology (10- May 2005)
7. Radiotracer for PET (10- Dec 2005)
8. 18F-FDG (15-2004)
10. 18F-FDG imaging- principle & role in clinical application (10-2002)

**6. Bones & joints**

**Long question**
1. Describe the clinical usefulness of a RN bone scan. Briefly outline its Limitation. Mention the conditions producing cold spot in a bone scan. (25-1990)

**Short Question**
1. Assessment of infectious bone lesion with NM technique. (10-12/06)
2. Palliation of bone pain with Radionuclide(10-12/06)
3. characteristics of radionuclides for bone palliation (10-12/06)
4. Radio-isotopes in mets bone palliation (10-2005)
5. Radio-isotopes in Radiation synovectomy (10-2005)
7. Thyroid disorder

Long question
1. Discuss the details NM procedures in management of Differentiated thyroid function (25-1995)
2. Write in brief the various modalities of treatment available for thyrotoxicosis. Discuss the role of 131-Iodine therapy in management of thyrotoxicosis(25-1996)
3. Mr “A” 30 yrs old reported to you a solitary thyroid nodule of 6 months. How will you investigate the case? Describe the management of a case mixed Papillary & Follicular Ca thyroid. (25-1992)
4. Discuss the immunopathology & management of Graves’ infiltrative ophthalmopathy. (25-1993)
Short Question

1. Work-up, treatment of thyrotoxicosis pregnant lady. (10-12/06)
2. Therapy of hyperthyroidism (10-2005)
3. Intervention NM in dysthyroid assessment. (15-1993)
4. Diagnosis & managements of Medullary Ca thyroid. (15-1994)
5. Thyroid function in children- indication and contra-indication. (10-1994)
8. Hashimoto’s thyroiditis. (15-1996)
9. Thyrotoxicosis with decreases RAIU. (15-1997)
10. Thyroid auto antibodies. (15-1997)
11. Chernobyl disaster & thyroid cancer. (15-1997)
12. Therapy of Hyperthyroidism (10- May 2005)
13. Thyroid stunning (10- Dec 2005)
14. Whole body iodine 131I scan (15- 2004)
15. Iodine metabolism (10- 2002)
17. Medullary Ca thyroid. (10- 1989)
18. Drugs causing decreased uptake of radioactive iodine in thyroid glands. (10- 2007)
20. RN in the management of medullary Ca thyroid. (15- 1991)
22. Mrs “M” 35 yrs old mother of two children is loosing weight continuously for the last 3 months. How will you investigate her? (25- 1992)
23. Discuss in detail isotopic therapy in thyrotoxicosis? (15- 1993)
24. Discuss etiology, clinical manifestation & investigations of salient thyroiditis (15- 1993)
25.
Para- Thyroid disorder

Short Question
1. Parathyroid imaging (15- 2004)
2. Hyper-parathyroidism- 99mTc-sestamibi imaging. (10- 2007)
3. RN imaging of parathyroid glands(15- 1992)

8. Lung Disorder

Short Question
1. PIOPED criteria for pulmonary embolism & its drawbacks. ( 10-12/06)
2. Discuss the Adv & limitations of various RPs used in Lung ventilation imaging (15-1994)
3. Role of NM procedures in the diagnosis of Pulmonary embolism (15-1995)
4. Role of NM in diagnosis of pulmonary embolism. (15-1996)
5. Anatomy of lung segments & their relevance to lung scintigraphy. ( 10-1996)
7. Describe the anatomical & physiological features of the respiratory system & the NM technique useful in its evaluation. (10-1997)
8. Enumerate the criteria for evaluating pulmonary embolism (10- Dec 2005)
10. Modified PIOPED criteria for pulmonary embolism diagnosis- high & intermediate probability. (10- 2007)
11. RN study of Lung. (15- 1990)
12. The technique of aerosol ventilation technique (15- 1992)
13. RN imaging in pulmonary thrombo-embolism in patients of obstructive pulmonary disorder(15- 1993)
15. Pulmonary embolism diagnosis (15- 1993)
9. Liver & GB disorder

Long question
1. Describe the mechanism of localization of RPs used for hepatic studies & discuss the indication of hepatic imaging. (25-1996)

Short Question
1. Scope of NM in neonatal hyper bilirubinemia (10-12/06)
3. NM techniques in Rt upper quadrant pain. (15-1993)
4. Discuss the assessment of functioning hepatocytes & hepatic blood flow with radionuclide techniques (15-1994)
5. Augments cholescintigraphy. (10-1994)
6. Pharmacodynamics of Hepato-biliary RPs. (15-1995)
9. RN intervention in biliary tract (10- Dec 2005)
13. Discuss technique used in the evaluation of jaundice. What are the mechanisms of localization? (10-1989)

10. Heart Disorder

Long question
1. Discuss the current status & prospects of radionuclide evaluation in IHD. (25-1993)
2. Describe briefly the sources of the technical error in 201Tl myocardial stress study. Compare and contrast the various RPs used for myocardial viability. (25-1994)
3. Discuss NM diagnosis in evaluation of chest pain in a 50 yrs old man. (25-1997)
4. Write an essay on PET imaging with reference to choice of isotope for Nuclear cardiology. (25-2002)
5. Discuss the recent advance in Nuclear technology in the evaluation of coronary artery disease. (25-1991)

**Short Question**

1. Tracer in use for MPI (10-12/06)
2. RPs for Cardiac metabolism assessment (10-2005)
3. Clinical utility of myocardial viability study (10-2005)
4. Cyclotron produced RPs for evaluation of myocardial damage (15-1993)
5. Discuss the role 99mTc-Sestamibi in NM (15-1994)
6. Discuss ambulatory Lt ventricular function monitoring with Radionuclide techniques (15-1994)
8. Dobutamine 201Tl imaging. (15-1995)
11. RPs in myocardial imaging. (15-1996)
13. Outline the clinical uses of cardiac RN imaging. (25-1996)
15. RPs for cardiac metabolism assessment (10-May 2005)
16. Clinical utility of Myocardial viability study (10-May 2005)
17. A NM lab to be planned for efficient performance of nuclear cardiology practice. Enumerate instruments & accessories needed with main specification (10-May 2005)
18. RPs for Myocardial viability evaluation (10-Dec 2005)
22. Non artherosclerotic causes of myocardial perfusion effects. (10-2002)
23. Interpretation of myocardial perfusion gated SPECT studies. (10-2002)
26. Preparation of 99mTc-Sestamibi. (10-2007)
27. MPI with 99mTc-MIBI SPECT acquisition & reconstruction parameter. (10-2007)
28. MUGA scan. (15-1990)
29. 210-Tl myocardial imaging in CAD. (15-1991)
32. MUGA in CAD (15-1992)
33. Adenosine Thallium Myocardial scintigraphy (15-1992)
34. RN evaluation of myocardial viability in IHD (15-1993)
35. Recent advances in NM procedure to study coronary blood flow (15-1993)

11 Infection & infection Agents

Short Question

1. Infection imaging Agents(10-2005)
2. Granulocytes scintigraphy. (15-1993)
3. Different techniques of Leucocyte labeling & their clinical utility (15-1994)
4. Discuss the various NM strategies used for the detection of Infection/Inflammation (25-1994)
5. Recent advances in imaging of Infective lesions. (10-1994)
6. RPs for infection/inflammation imaging (10-Dec 2005)
7. Infection imaging (10-2002)
9. RN studies on AIDS (15-1992)
10. RN approach to case of PUO (15-1992)
11. AIDS evaluation through use of RN imaging (15-1993)

12 Miscellaneous

Long Question

1. As NM specialist you are directed to submit detailed project report for starting NM service in a 300 bedded multispeciality hospital. Discuss how you would proceed & meet the statutory requirements. (25-1994)
2. Describe briefly the various modalities of the treatment of Polycythemia Vera & discuss the role of P-32 in its managements. (25-1989)
3. What are the various NM procedures? Where pharmacological intervention is performed & describes one of the procedures in detail mentioning the concept, pitfall and utility. (25-1992)

Short Question
1. Various RPs in emergency room with indication (10-2005)
2. Intervention in NM (10-2005)
3. Clinical utility in Imaging fusion (10-2005)
4. RBC survival and sequestration studies (10-2005)
5. NM techniques in in peripheral vascular abnormalities. (15-1993)
6. Rx for Polycythemis vera (10-1994)
8. Patients has following blood picture
9. Hb:-6 gms, Retic cts:-20%, MCHC:-26%MCV:-105, WBC:-15000, Platelets:-200000,
10. Sr. Bilirubin:-2mg%, Coombs direct:-+ve,
11. Blood film report: - Spherocytosis, anisopoikilocytosis, anisochromia,
12. Discuss how the diagnosis might be elicited using radioactive isotope technique. (15-1995)
13. Role of NM in management of Polycythemia vera. (10-1995)
16. Bayes theorem & its application to medical decision making. (10-1996)
17. Immunoscintigraphy. (15-1996)
18. The concept of “molecular NM”. (10-1996)
20. Molecular NM. (15-1997)
22. Polycythemia Rubra vera. (15-1997)
23. RBC survival & sequestration studies (10-May 2005)
28. Factors affecting the outcome of any radiation therapy. (10- 2007)
29. Salient criteria in selecting a work station for NMD. (10- 2007)
31. RN study in DVT. (15- 1990)
32. RN imaging in the diagnosis of Lymphocele . (15- 1991)
33. Immunoscintigraphy. (15- 1991)
34. Number of requests for renal scans in a NMD over a period of 10 con consecutive months was 400, 375, 420, 450, 410, 390, 470, 425, 385, & 440. Over this period a normal distribution may be assumed. the next month a new gamma camera was installed & the number request rose to 510. Dose this increase represent significant increase? (15- 1991)
36. Radiolabelling of RBCs for diagnosis of hematological disorder(15- 1992)
37. NM technique in endocrine disease (15- 1993)