

Question Bank

RADIO - DIAGNOSIS

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ANATOMY

LONG ANSWER QUESTIONS

1. Anatomy of the Circle of Willis with Diagram. Enumerate the causes of Subarachnoid Hemorrhage. [2010]
2. Describe the Embryology and development of pancreas. Describe the imaging features of any one important congenital anomaly of pancreas. [2010]
3. Draw a labelled diagram of Broncho-pulmonary segments on chest PA and Lateral Radiograph of left lung. [Dec 10]
4. Describe anatomical variations in Circle of Willis with the help of a diagram. Enumerate the sites of intracranial aneurysm. [Dec 2010]
5. Describe the basis of Hepatic segmental anatomy. Draw a diagram to depict various hepatic segments. [Dec 2010]
6. Describe the embryogenesis of human urinary system using labelled diagram. Briefly discuss the basis of any 3 congenital defects of kidney. [June 11]
7. Describe with help of labelled diagram-vascular anatomy of testes. Explain briefly its clinical relevance in imaging of testicular malignancies. [June 11]
8. Draw a neat line diagram of perinephric space including its relationship with other spaces. Write CT features of perinephric abscess and urinoma. [4+3+3 June 13]
9. Briefly discuss with diagram the anatomy of Circle of Willis. What are the cause of Sub Arachnoid haemorrhage?. Discuss the role of imaging in a case of SAH. [3+3+4 June 13]
10. Describe with suitable diagram(s) the anatomy of peri and paranephric spaces. Enumerate tumors of perinephric spaces. Describe imaging features in any one of these. [4+2+4 Dec 13]
11. Draw a neat diagram showing the anatomy of retroperitoneum. What are various conditions affecting perinephric space. Describe the imaging features in three such conditions. [2+2+6 Dec 14]
12. Normal vascular anatomy of brain and imaging features of brain tumors
13. Radiological investigations in a case of swelling in femoral triangle.

SHORT ANSWER QUESTIONS

1. Anatomy of urethra. [Jan 97]
2. Segmental anatomy of liver and its importance. [JUL 97]
3. Cross-sectional labeled diagram of Peritoneal Spaces at level of renal hila. [JUL98]
4. Cross Sectional Anatomy of Supra Renal level. Enumerate the hormones elaborated by zones of the Supra renal glands.
5. Anatomy of Maxillary sinus and classification of various pathologic diseases.
6. Radiological anatomy of Mediastinum .
7. Anatomical boundaries of Ant. Mediastinum – Role of CT in detection & diagnosis of anterior Mediastinal Masses.
8. Radiological anatomy of Sella turcica and imaging features of suprasellar masses. [JUL 99/Dec 2010]
9. Describe the anatomy of Gastro-oesophageal junction & imaging of hiatus hernia. [JAN 00]
10. Segmental anatomy of Lungs. [JAN 01, 02, 10]
11. Temporal bone and Internal Auditory Canal.
12. Middle ear.
13. Neck space CT anatomy. [JUN 04]
14. CSF pathways.
15. Blood brain barrier. [DEC 05]
16. Describe normal Anatomy of Knee as seen on MRI. [09]
17. Describe the normal anatomy of coronary arteries and discuss the role of MDCT in coronary artery diseases. [09]
18. Lymphatic drainage of Lungs.
19. Embryology of Gastrointestinal Tract.
20. Embryology of Genitourinary Tract.
21. Embryology of Diaphragm.
22. Radiological anatomy of Larynx and Pharynx.

- 23. Anatomy and lesions of parapharyngeal spaces.
- 24. Radiological anatomy of duodenum and relations
- 25. Radiological anatomy of pancreas.
- 26. Peritoneal ligaments and mesenteries (pathways of intra-abdominal disease spread).
- 27. Blood supply of large intestine.
- 28. Radiological anatomy of carotid artery and branches.
- 29. Anatomy of the Biliary tree and investigations for evaluation

CHEST

LONG ANSWER QUESTIONS

1. Describe briefly the pathophysiology of Pulmonary Embolism. Give in detail the imaging modalities for diagnosis of this entity and their relative merits and demerits. [JAN 97]
2. Discuss in brief the differential diagnosis of mediastinal masses and their radiological appearances.
3. What are the causes of pulmonary venous hypertension?. Describe plain X-ray findings in pulmonary venous hypertension. [June 08]
4. Discuss pathophysiology and imaging features in respiratory distress in newborn. [June 08]
5. Imaging findings in germ cell tumor of the mediastinum and discuss in brief the DD. [2010]
6. Radiological findings of the Pulmonary complications of HIV infections. [2010]
7. Describe the chest radiograph and HRCT findings in Sarcoidosis. [09, Dec 10]
8. Describe etiopathogenesis, common causes, plain film and CT features of lymphangitis carcinomatosa. [June 2011]
9. Describe plain radiographic and CT findings of right Upper lobe pulmonary collapse. [June]
10. Discuss the role of CT and MRI in staging of lung cancer. [June 2011]
11. Describe the radiological findings of pulmonary complications in patients infected with HIV. [June 11]
12. Classify diaphragmatic hernias. Describe the radiological means to establish the diagnosis with relevant imaging findings. [June 11]
13. Enumerate various germ cell tumors of mediastinum. Discuss their imaging features. [3+7 Dec11]
14. Enumerate the causes of Acute Respiratory Distress Syndrome. Give in detail and management of aortic dissection. [3+7 Dec 11]
15. Discuss the etiopathogenesis, imaging features & DD of silicosis. [3+4+4 Dec 11]

16. Define pulmonary sequestration. Describe its types & discuss CT findings and role of angiography in it. [2+1+4+3 Dec 11]
17. Enumerate causes of unilateral hyper-translucency on chest radiograph. Briefly describe plain radiographic and CT findings in a 5 year old child presenting with repeated chest infection and detected to have unilateral hyper-translucency on chest radiograph. [2+4+4 Jun 12]
18. Classify pleural tumours. Briefly discuss chest radiographic & CT findings of malignant mesothelioma. [3+3+4 Jun 12]
19. Enumerate various diseases caused by inhalation of inorganic dust. Briefly describe chest radiographic and CT findings of two most common such diseases. [2+4+4 Jun 12]
20. How do pulmonary arteriovenous malformation present clinically? Discuss their chest radiographic, CT chest and angiographic findings. Briefly mention role of interventional radiology in their treatment. [2+(2+2+2)+2 Jun 12]
21. A 25 year old presented with life threatening hemoptysis. Draw an algorithm to outline management of such case. Discuss in brief role of chest radiograph, CT scan (with newer advances) and role of interventional radiology. [2+(2+4+2) Jun 12]
22. Enumerate the causes of superior vena cava syndrome in an adult. Briefly describe the role and findings of various imaging modalities in a case of central bronchogenic carcinoma. [2+8 Dec 12]
23. Describe various HRCT lung findings seen in interstitial lung disease with the help of diagrams. Describe HRCT features of usual interstitial pneumonia. [6+4 Dec 12]
24. Enumerate various causes of respiratory distress in a new born. Briefly describe imaging findings in congenital lobar emphysema and emphysema and pulmonary sequestration. [2+4+4 Dec 12]
25. Enumerate the causes of hemoptysis in an adult patient. Briefly discuss the indications, techniques and complications of radiologist interventions in this condition. [2+2+4+2 Dec 12]
26. Define pulmonary edema. What is its pathophysiology? Enumerate its causes. Describe the plain radiographic findings in pulmonary edema. [1+2+3+ Jun 13]
27. Write imaging findings of the following : a) Bronchial Carcinoid b) BOOP c) McLeod's Syndrome.
28. Causes of increased paravertebral shadow in the thoracic region and their imaging.

29. Define Sarcoidosis. What are the various stages of thoracic Sarcoidosis? Discuss the radiological manifestations of thoracic Sarcoidosis [2+26 Jun 13]
30. What do you understand by the term 'extramedullary hematopoiesis'? Enumerate its causes. Discuss its plain film and cross sectional imaging findings. [2+2+3+3 Jun 13]
31. Discuss briefly the pathophysiology of pulmonary embolism. Give in detail the imaging modalities for diagnosis of this entity & their relative merits & demerits. [4+4+1+1 Jun 13]
32. State the radiological basis of differentiating a mediastinal mass from an intrapulmonary mass. How would you localise the compartment of a mediastinal lesion? Discuss briefly the differential diagnosis of mediastinal lesions in anterior compartment. [2+3+5 Dec 13]
33. A 65 year-old chronic smoker presents with hemoptysis. The chest radiograph shows a well defined cavitating intrapulmonary mass with speculated margins in the left upper zone. How would you further evaluate this patient and determine the extent of disease? What would be the signs you would look for to decide if the lesion is operable? [8+2 Dec 13]
34. Describe the changes on a chest radiograph in collapse of different lobes in both lungs. [10 Dec 13]
35. Radiological findings in: a) Sequestration of lung b) Pulmonary hypertrophic osteoarthropathy. [5+5 Dec 13]
36. Define SPN. Enumerate its causes. Discuss the radiological work up of a solitary nodule highlighting the features which enable to differentiate b/w benign and malignant nodules. [1+2+7 June 14]
37. A 30-yr-old female patient presented with h/o cough and one episode of hemoptysis. Her chest radiograph showed a cavitary lesion measuring 3 cm in left mid zone. Enumerate the possible causes. How will you proceed with radiological evaluation in this case? [2+8 June 14]
38. Name the anatomical structures which contribute to the hilar shadow seen on a frontal chest radiograph. Enumerate the causes of unilateral large hilum in a 50 yr old male. Describe the imaging findings in any 2 pathological causes. [2+2+3+3 June 14]
39. A 20-yr-old female with history of fever showed an anterior mediastinal and right hilar mass on chest radiograph. Enumerate the causes. Discuss the radiological finding which shall help you in formulating your differential diagnosis. Describe in

brief features which are useful in differentiating Hodgkin's disease and non-Hodgkin's lymphoma. [2+6+2 June 14]

40. Describe the radiological anatomy of diaphragm. Enumerate various types of diaphragmatic hernias. Discuss the imaging findings in any two hernias which can be seen in a 40 yr old patient. [3+1+3+3 June 14]
41. Enumerate causes of cystic mediastinal lesions. Describe imaging features of any 2 conditions. [2+4+4 Dec 14]
42. a) Castleman's disease b) Role of Dual energy CT in pulmonary embolism. [5+5 Dec 14]
43. Enumerate causes of solitary pulmonary nodules. Discuss the role of various newer imaging techniques in assessment of these lesions. [2+8 Dec 14]
44. Discuss various chest complications in a post-operative patient. Describe in detail imaging features in any two conditions. [4+3+3 Dec 14]
45. A 55 yr male patient presents with left opaque hemithorax. Enumerate the likely causes and discuss the imaging features in two common conditions. [2+4+4 Dec 14]
46. Discuss various types of aortic aneurysms. Describe various modalities to investigate such patients with advantages and disadvantages of each. Discuss briefly role of interventional procedure. [2+6+2 Dec 14]
47. a) Takayasu's arteritis b) Role of RFA in chest tumors. [5+5 Dec 14]
48. Etiopathogenesis, clinical forms, complications and radiological features of silicosis. [June 15]
49. a) Causes of mediastinal lymphadenopathy. b) Role of imaging in their differentiation. [June 2015]
50. An adult male presents with recurrent chest infections and a cavitating lung lesion in left lower zone in a chest radiograph. Discuss the differential diagnosis and imaging features in two most likely causes. [June 2015]
51. Causes of pleural masses and their imaging features. [June 2015]
52. a) Anatomic location and patterns of diaphragmatic rupture. b) Role of imaging in its evaluation. [June 2015]
53. Discuss radiological anatomy of mediastinum. Write in detail about the imaging findings of posterior mediastinal masses?

54. Discuss the role of HRCT in evaluation of Interstitial lung diseases.
55. Classify mediastinum. Describe in details imaging features of various lesions in posterior mediastinum. (25)
56. HRCT lung and imaging features of ILD
57. Classify various embolizing agents. Discuss in detail bronchial artery embolization
58. Discuss broncho-pulmonary segments. What are the manifestations of pulmonary tuberculosis?
59. A young lady of 25 presents with acute chest pain. Describe clinical and radiological findings in such a patient.
60. Pathophysiology of pulmonary hypertension and discuss radiological appearances in the conditions
61. Mediastinal anatomy. Discuss the role of CT and MRI in evaluation of mediastinal mass.
62. Etiopathogenesis of emphysema. Describe the radiological appearances in the condition
63. What is coin shadow in the lung. Describe the differential diagnosis.
64. Conditions in newborn with respiratory distress and radiologic finding
65. Discuss pulmonary TB laying emphasis on pathological features that are responsible for imaging
66. Describe pathologic and imaging findings of hamartoma
67. Discuss pathogenesis and imaging of bronchogenic ca in left lung
68. Role of HRCT in diagnosis of chest pathologies.
69. What is PA teleradiogram. Enumerate various views helpful in plain xray of chest. Describe normal radiological anatomy of chest as seen on PA teleradiogram
70. Radiological and imaging strategy in suspected pulmonary embolism
71. Radiological patterns in pneumonias with etiopathological correlation.
72. Radiological anatomy of bronchopulmonary segments and their role in localization of lesions.
73. Describe blood supply and drainage of lung. What are the anomalies of arterial and venous system of clinical importance.

74. Describe the various radiological appearances of child suffering from accidental aspiration of green pea and describe the subsequent progress.
75. Describe anatomy of diaphragm. Enumerate the causes of elevation of diaphragm.
76. Describe the systemic and local radiological manifestations of bronchial carcinoma.
77. Describe the radiological investigations and findings in pulmonary embolism.
78. Discuss the differential diagnosis of enlarged pulmonary conus seen on chest radiograph. How will you investigate such case?
79. Enumerate causes of interstitial lung diseases. Describe radiographic appearances including modern imaging
80. Causes of Haemoptysis and role of interventional technique in haemorrhage.

SHORT ANSWER QUESTIONS

1. Wegener's granulomatosis [JAN 97, JUN 07]
2. Pathogenesis and imaging of pulmonary sequestration. [JAN 97, DEC 02, JUN 06, 10]
3. Role of imaging in bronchogenic carcinoma. [JUL 97]
4. Alveolar Proteinosis.
5. Anterior mediastinal mass lesions. [02]
6. Anterior mediastinal masses in children. [09]
7. Imaging of posterior mediastinal masses. [JUL 99, DEC 03]
8. Pleural tumours. [JUL 98]
9. Diagnosis of pulmonary infarction.
10. Pulmonary oedema. [JUL 99, 02]
11. Adult Respiratory Distress Syndrome (ARDS). [JUL 99, DEC 02]
12. Sarcoidosis. [JUL 99, DEC 04]
13. Differentiating features of intra and extralobar sequestration of lung. [JAN 00]
14. Pulmonary plethora and its distinctive features.
15. MRI in bronchogenic carcinoma.
16. What are clinical applications of CT in evaluation of non-neoplastic lung diseases? [JAN 01]
17. Pan-acinar Emphysema. [02]
18. Tracheoesophageal fistula. [DEC 02]
19. Evaluation and DD of Hilar Mass [02]
20. Solitary Pulmonary nodule. [02]
21. Metastatic tumors of Lung. [02]
22. Silicosis. [02]
23. Bronchopulmonary Aspergillosis. [02]
24. Ground glass opacity HRCT- Significance and DD. [DEC 02,03]

25. Unilateral opaque hemithorax. [02]
26. Unilateral Hyperlucent hemithorax. [06]
27. Pulmonary thromboembolism. [DEC 03, JUN 06]
28. Imaging in acute chest trauma. [02]
29. Lung lesions in AIDS. [98]
30. Atypical Pneumonia. [JUN 03]
31. HRCT in ILD. [JUN 04]
32. Pulmonary lesions in AIDS.
33. Eventration of diaphragm. [DEC 04]
34. Pulmonary Aspergillosis.
35. Solitary pulmonary nodule
36. Hyaline membrane disease. [DEC 05]
37. Imaging in central bronchogenic carcinoma.
38. Radiology of primary pulmonary Koch's. [02 JUN 05, 06]
39. Salient features of radiology of pulmonary metastases.
40. Raised left Dome of Diaphragm.
41. Radiological features in Congenital Cystic Adenomatoid Malformation of the lung. [JUN 07]
42. Role of chest radiograph and CT chest in AIDS. [DEC 07/09]
43. Anterior mediastinal masses in children.
44. Anterior Mediastinal Masses. [02]
45. Azygos lobe.
46. Imaging in pulmonary thrombo-embolism. [09]
47. MDCT & Scintigraphic evaluation of pulmonary embolism. [09]
48. Enumerate causes of usual interstitial pneumonitis. Describe HRCT findings in idiopathic pulmonary fibrosis.
49. Discuss in detail imaging features of thoracic lymphoma. [June 08]

50. CT features of Thoracic Lymphoma. [09]
51. Imaging of extra nodal presentations of non Hodgkin lymphomas. [09]
52. Role of imaging in a new born with respiratory distress. [06, 09]
53. Discuss pathophysiology and imaging features in respiratory distress in newborn. [09]
54. HRCT in Diffuse lung disease. [06]
55. HRCT in occupational lung diseases. [09]
56. HRCT in pulmonary tuberculosis. [09]
57. Role of chest radiography in emergency situations. [June 2008]
58. DD and imaging features of para-vertebral shadow. [2010]
59. Describe the role of MDCT in staging of carcinoma of lung. [2010]
60. Lymphatic drainage of lungs.
61. Radiological finding pulmonary hypertrophic osteoarthopathy.
62. Posterior mediastinal tumors.
63. Round atelectasis.
64. Chest in immuno comprised patient.
65. Pulmonary alveolar proteinosis.
66. Adult Respiratory Distress Syndrome
67. Role of imaging in paediatric chest TB.
68. Etiopathogenesis of diaphragmatic hernia and imaging techniques in identifying them.
69. Differential diagnosis of air fluid levels in chest.
70. Constrictive pericarditis.
71. Diaphragmatic hernia.
72. Pericardial effusion.
73. Rib notching.
74. Silhouette sign.

CARDIOVASCULAR SYSTEM

LONG ANSWER QUESTIONS

1. Enumerate various types of transposition of great vessels. Describe imaging features of total anomalous pulmonary venous drainage. [09]
2. Discuss the role of MR in evaluation of pericardium and its pathologies. [June 2008]
3. What are the causes of pulmonary venous hypertension? Describe plain X-ray findings in pulmonary venous hypertension. [09]
4. Radiological approach in Acyanotic heart disease.[09]
5. Total Anomalous Pulmonary Venous drainage. [09]
6. Imaging features on chest radiograph of various acyanotic congenital heart diseases. [2010]
7. Classify peripheral vascular malformation. Describe sonographic color Doppler, MRI and angiographic features of venous malformation. Mention suitable embolic material for their interventional management. [Dec 2010]
8. Enumerate various tumors of heart. Describe the imaging features of myxoma of heart. [Dec 2010]
9. Describe the venous anatomy of lower limb with the help of a diagram. Describe the technique of color Doppler imaging of lower limb veins and imaging features of deep Vein thrombosis. [Dec 2010]
10. Describe the radiological findings of Coarctation of aorta on plain radiograph, barium contrast study, DSA and MRI. Briefly describe role of interventional radiology in it. [June 2011]
11. Describe plain radiographic findings in Rheumatic heart disease in Mitral Stenosis. Mitral regurgitation with mitral stenosis & Aortic stenosis. [June 2011]
12. Classify aortic dissection. Describe the role of CT angiography in diagnosis and management of aortic dissections. [2+4+4 Dec 11]
13. Enumerate causes of acute chest pain in an elderly patient. Briefly describe CT findings in 3 common likely conditions. [1+3+3+3 Dec 11]
14. Classify congenital cardiac abnormalities. Briefly discuss abnormalities of Situs and Looping (or topology) with their imaging features. [2+4+4 Jun 12]

15. Define truncus arteriosus. Mentions its types and characteristic features of its various types. Briefly describe its chest radiographic, echocardiographic & MRI findings. [2+2+2+2+2 Jun 12]
16. Enumerate causes of unilateral and bilateral inferior rib notching. Describe chest radiographic, CT chest and angiographic findings in Coarctation of Aorta. Briefly discuss role of interventional radiology in management of Coarctation of Aorta. [2+(2+2+2)+2 Jun 12]
17. How will you radiologically investigate a 60 year old hypertensive & diabetic female presenting with severe chest pain of acute onset? Briefly discuss imaging features of the most common cause for it. Also describe role of radiology in its complications. [3+5+2 Jun 12]
18. Classify right sided aortic arch abnormalities. Draw suitable diagrams to describe these anomalies. Discuss imaging features in dysphagia lusoria. [2+5+3 Jun 12]
19. Enumerate causes and briefly describe the role of imaging in diagnosis and management of thoracic aortic aneurysm in a patient below the age of forty years. [2+4+4 Dec 12]
20. Enumerate the radiographic features of enlarged right atrium and enlarged left atrium. Briefly describe lung field changes in case of mitral stenosis [2+3+5 Dec 12]
21. Briefly describe the anatomy of the pericardium. List various causes and imaging findings in a case of constrictive pericarditis. [2+2+6 Dec 12]
22. Describe the arterial anatomy of carotid vascular system with the help of labelled diagrams. Discuss the role of ultrasound & color Doppler imaging in evaluation of extra cranial carotid occlusive disease. [2+2+6 Dec. 12]
23. Enumerate the indications of MDCT coronary angiography. Describe the methods to reduce the radiation dosage to patients during performance of MDCT coronary angiography. [2+8 Dec 12]
24. Enumerate the causes of left atrial enlargement. Discuss its findings on chest radiograph. What other imaging techniques will be useful in making the diagnosis? Briefly highlight the significance of each. [2+3+2+3 June 13]
25. What is Eisenmenger Syndrome? Enumerate the conditions that may produce this syndrome. Discuss its key radiological features. [2+2+6 June 13]
26. Enumerate any four clinical conditions which produce a left to right cardiac shunt. Discuss the key radiological features in any two. What would be the radiographic signs of the possible hemodynamic complications, if the condition remains untreated?. [2+3+3+2 Dec 13]

27. Enumerate the radiologically-evident pericardial afflictions on a chest radiograph. Describe their key radiological findings. (2+8 Dec 13)
28. Discuss the diagnostic approach in a 7 year old boy presenting with a progressive pulsatile swelling in the right forearm. Describe the imaging findings with Doppler and MRI. [3+3+4 Dec 13]
29. Discuss the pathophysiology of venous incompetence in lower extremity. What are common locations of perforators? Describe technique & imaging features in Doppler examination of venous incompetency in lower extremity. [2+3+5 Dec 13]
30. What are the indications of coronary CT angiography? Describe the techniques of performing coronary CT angiography. What do you understand by Calcium score & what is its clinical relevance? [2+5+3 Dec 13]
31. Enumerate the causes of Aortic aneurysm in a 30 yr old male patient. How will you differentiate b/w these various causes? Discuss the findings & information you shall highlight in a case which is to be managed using an aortic stent graft. [2+5+3 June 14]
32. Enumerate the various causes of bilateral weak femoral arterial pulsations in a 20 year old female patient. Describe the imaging findings in any two important causes. [2+4+4 June 14]
33. Define and enumerate causes of restrictive cardiac diseases. Discuss the role of various imaging modalities along with imaging features in two such diseases. [1+2]+[3+4 Dec 14]
34. A 50 yr old male patient in emergency with acute chest pain. Discuss the likely causes and approach to diagnose such patients. Discuss the role of CT angiography in these patients. [5+5 Dec 14]
35. a) Doppler assessment of AV fistula of hemodialysis access. b) Role of MDCT in cyanotic heart disease [5+5 Dec 14]
36. Vascular compression syndromes in abdomen and pelvis [5 Dec 14]
37. A) Role of different imaging modalities in evaluation of a case of limb ischemia. B) Role of interventional procedures in these patients. [5+5 June 15]
38. a) Enumerate causes of thoracic aortic aneurysm. b) Role of CT angiography in the diagnosis and management of aortic dissection. [June 15]
39. a) Define pulmonary hypertension. b) Enumerate its causes and describe the imaging findings [June 15]

40. a) Venous anatomy of lower limb with the help of a diagram. b) Technique of colour Doppler imaging of lower limb veins and imaging features of DVT [June 15]
41. a) Enumerate various heart diseases with cyanosis and increased pulmonary circulation b) Imaging features in any two such diseases.
42. In a case of suspected deep venous thrombosis of lower limbs, discuss radiological techniques that can be used to arrive at diagnosis.
43. Indications, contraindications, technique and complications of percutaneous transluminal angioplasty
44. Enumerate syndromes associated with peripheral vascular malformations. Describe pathologic and imaging findings of the same.
45. Interventional techniques in vascular radiology.
46. With the help of radiological investigations how will u arrive at diagnosis of acyanotic congenital heart diseases?
47. Causes of rib notching and radiological investigations and findings.
48. Radiological diagnosis of pericardial diseases.
49. Enumerate causes of cyanotic congenital heart diseases. Discuss in brief radiology of three common conditions.
50. Role of radiologist in cases of myocardial infarction.
51. Enumerate causes of left atrial enlargement. Describe radiological appearances in mitral stenosis.
52. Describe the normal anatomy of Coronary arteries and discuss the role of MDCT in coronary artery disease. [June 2008]
53. Causes & imaging features of constrictive pericarditis. [DEC 09]
54. Enumerate congenital anomalies of IVC. Comment on role of MRI in their diagnosis. [09]
55. Describe diagnostic features on chest radiograph which can help in evaluation of congenital heart disease;
56. Discuss CT coronary angiography.
57. Discuss the basic principles of Multidetector CT Scan (MDCT). What is coronary CT angio?

58. Discuss briefly the various imaging techniques in assessment of ischemic heart disease.
59. Discuss the role of various imaging techniques in the management of an old case of ischemic heart disease.
60. What are the cyanotic group of congenital heart diseases? How can they be investigated by radiological and imaging techniques?
61. Describe the role of radiology in the investigation of hypertension

SHORT ANSWER QUESTIONS

1. Doppler ultrasound versus MR angiography of carotid vessels. [JAN 97]
2. Cardiac and pericardial calcification.
3. Role of plain skiagram chest in the diagnosis of pulmonary Hypertension. [JUL 97]
4. Scimitar syndrome. [JUL 97, DEC 06/07]
5. Pathogenesis of ASD. [JUL 97, 98]
6. Atrial myxoma. [JUL 98]
7. Amyloid heart diseases. [98]
8. Imaging of the extracranial carotid arteries.
9. Pathogenesis and classification of Dissecting Aneurysm of Aorta.
10. Coarctation of aorta. [JUL 99; DEC 02, 03]
11. Role of Doppler study in lowest extremity arterial disease.
12. Imaging in aorto-arteritis. [JAN 00, DEC 02]
13. Causes and imaging features of pericardial effusion. [JAN 01]
14. Abdominal aortic aneurysm.
15. Role of Doppler in peripheral arterial diseases.
16. MRI in cardiac disease. [DEC 02]
17. Tetralogy of FLLLOT. [02]
18. Pulmonary Stenosis. [02]
19. Imaging in ischaemic heart disease. [DEC 03]
20. Aortic Dissection. OR Imaging and Intervention in Aortic dissection [DEC 02/03/09]
21. Coarctation of aorta
22. Noninvasive cardiac imaging
23. Chest X-ray in CHD. [JUN 04]
24. Plain X-ray cardiomyopathy
25. MRI in Cardiac Imaging [DEC 04/09]

26. Pathophysiology & imaging of Mitral valve disease. [DEC04, JUN 05]
27. Congenital anomalies of aortic arch and major branches.
28. Coronary imaging.
29. Aortic aneurysm & Interventions. [JUN 05, DEC 05/06]
30. Superior Vena Cava obstruction.
31. Total anomalous pulmonary venous drainage. [DEC 02/05/07]
32. Doppler evaluation of deep veins of leg.
33. Takayasu's disease or Non-specific aortoarteritis. [JUN 05/06/07]
34. Left to right shunts/Extracardiac Left to Right shunts. [05/06]
35. Enlarged Left atrium. [06]
36. Ebstein's anomaly. [JUN 07, DEC 09]
37. Radiological approach in Cyanotic heart disease. [DEC 07]
38. MRI of cardiac tumors. [09]
39. Interventional management of deep vein thrombosis. [09]
40. Imaging in Intermittent claudication of Lower limb. [02]
41. Imaging in 14 years old with hypertension. [09]
42. Describe diagnostic features on chest radiograph which can help in evaluation congenital heart disease. [09]
43. Imaging of PDA. [09]
44. Assessment of correctness of positioning of various catheters and tubes as seen on chest radiographs. [09]
45. Cardiac CT. [09]
46. Imaging of aortic aneurysm.
47. Embryology of heart and imaging in congenital heart diseases
48. Describe imaging methods useful for hypertensive cardiovascular diseases.
49. Embryology of heart and imaging in valvular heart diseases.
50. Describe the significance of dilated pulmonary artery in radiological diagnosis.

51. Angioplasty procedures in peripheral vessels and their complications.
52. Imaging in constrictive pericarditis
53. Aortic dissection
54. Angioplasty
55. Ebstein's anomaly
56. Renal denervation for renovascular hypertension.
57. Coarctation of aorta
58. Cardiomyopathies
59. Rib notching
60. Pancoast's tumour
61. Dissecting aneurysm
62. What is digital subtraction angiography? What are the physical principles involved? Enumerate the advantages and disadvantages of venous and arterial injection.
63. What are the recent advances in radiological and imaging techniques and interventional modalities in diagnosis and treatment of coronary arterial diseases?
64. Describe the technique of lower limb venography. Discuss its usefulness in deep vein thrombosis.
65. Enumerate the causes of hemoptysis and role of HRCT in lung diseases.
66. Describe the interventional techniques in vascular radiology.
67. Role of Color Doppler in Aorto-Arteritis.
68. AV Malformation.
69. Describe the various vascular malformation and role of imaging.
70. Interventional procedures in deep vein thrombosis.

ABDOMEN

LONG ANSWER QUESTIONS

1. Draw of neat line diagram of perinephric spaces including its relationship with other spaces.
2. Write CT features of perinephric abscess and urinoma. [June 2008]
3. Enumerate various causes of Para vertebral masses and their imaging features. [Jul 10]
4. Enumerate causes of pain in right iliac fossa in a 20 yr old married female. Discuss the role of USG and CT scan in evaluation in this case [June 2011]
5. Enumerate the causes of mechanical small bowel obstruction in an adult. Describe the differentiating features of small and large bowel obstruction on plain radiography. Briefly discuss the role of CT in mechanical small bowel obstruction. [Dec 2012](3+2+5).
6. Briefly describe the etiopathology and imaging findings of ileocecal tuberculosis. Discuss the features that are useful to differentiate it from Crohn's disease. [Dec 2012](3+2+5)
7. Enumerate various causes of acute pancreatitis. Briefly discuss various terms used in description of imaging findings of acute pancreatitis and indicating its severity. [Dec12](2+6+2)
8. Briefly discuss the development of midgut. Describe the imaging findings of midgut malformation and midgut volvulus on various imaging modalities. [3+3+4 Dec 12]
9. A 40 year old male presents with a lump in the RIF. What would be your approach as a radiologist to help come to a diagnosis? Discuss the characteristic radiological features of any 3 pathologies, presenting with right iliac fossa lump. [1+9 Jun 13]
10. Discuss the DD in a 38 year old male presenting with RIF lump, lassitude & altered bowel habits. Describe the conventional imaging findings in intestinal TB. [4+6Dec 13]
11. Briefly describe the role of imaging in the following: a) Neuroendocrine tumors of pancreas b) Small bowel lymphoma. [5+5 Dec13]
12. Enumerate the causes of a palpable lumbar mass in a 5-yr-old child. Discuss the algorithmic approach you would use to arrive at diagnosis in this case. [2+8 June 14]

13. Enumerate the causes of pneumoperitoneum with peritonitis in a 30 yr old male patient. Describe the findings which can be seen in supine abdominal radiograph in a case of pneumoperitoneum. Discuss the CT findings which may be seen in bowel ischemia due to acute superior venous thrombosis. [2+2+6 June 14]
14. A 10 yr old female child presents to the emergency department with acute onset RIF pain. Enumerate possible causes. Discuss the radiological work up highlighting imaging findings in 2 common conditions. [2+8 June 14]
15. A 27 yr old married woman presents to emergency room with sudden onset of severe pelvic pain. Enumerate possible causes. Discuss the role of imaging in this case. Describe the findings in 2 common conditions which may cause above symptoms. [2+2+4 June 14]
16. Abdominal radiograph shows pneumointestinalis in a 55 yr old male patient. Enumerate various causes. Describe the role of MDCT and imaging features in 2 such conditions. [2+8 Dec 14]
17. A 30-yr old male presented to emergency department with blunt abdominal trauma. Discuss the approach to imaging and MDCT findings of renal injury
18. Discuss in detail vascular compression syndromes in abdomen & pelvis. (10)

SHORT ANSWER QUESTIONS

1. Differential diagnosis of mass in right iliac fossa. [JUL 98]
2. Describe the role of CT in acute abdomen. [JUL 99, 02]
3. Role of USG in acute abdomen. [02]
4. Superior mesenteric artery syndrome.
5. Sonographic findings in abdominal tuberculosis.
6. Imaging in Retroperitoneal fibrosis.
7. Describe imaging in a 5 years old child presenting with lump in Right lumbar region. [JAN01]
8. Imaging in blunt abdominal trauma. [02]
9. Prune belly syndrome. [DEC 02]
10. MDCT application in abdomen. [02]
11. CT in Acute abdomen. [DEC 03]
12. Abdominal trauma. [JUN 04]
13. Imaging of Retroperitoneum. [DEC 05]
14. MRI-imaging of Retroperitoneum. [JUN 06]
15. Imaging in retroperitoneal fibrosis. [JUN 07]
16. Role of plain radiography in acute abdomen.
17. Imaging in 9 year old girl presenting with right lower quadrant pain. [09]

GASTROINTESTINAL SYSTEM

LONG ANSWER QUESTIONS

1. Enumerate causes of lower gastrointestinal bleeding. Mention current imaging techniques in their evaluation. Describe the role of MDCT in its evaluation. [09]
2. Imaging features of small bowel abnormalities in newborn. [09]
3. CT vs MR enteroclysis for assessment of small bowel diseases. [09]
4. Describe imaging of low intestinal obstruction in a neonate. [09]
5. CT & Endoscopic ultrasound staging of Esophageal carcinoma. [09]
6. Radiological evaluation of suspected Small Bowel obstruction. [09]
7. Describe the technique and ultrasound features in acute appendicitis. Also describe ultrasound features of conditions mimicking acute appendicitis. [June 2008]
8. Discuss various causes and imaging features in stricture of lower end of esophagus. [June 2008]
9. Describe imaging features in a case of intestinal perforation. [2010]
10. Describe the clinical features, sonographic and CT appearances in acute Appendicitis. [Dec 2010]
11. Discuss the role of plain radiograph, barium studies, USG & CT abdomen in diagnosis of gastrointestinal TB. [2+3+2+3 June 2011]
12. Describe in brief the role of plain radiography, enteroclysis, USG, CT and MRI in evaluation of small bowel obstruction. [June 2011]
13. Enumerate causes of mesenteric ischaemia. Briefly discuss plain radiographic, USG, CT findings and the role of intervention in this condition. [2+2+2+2+2 Dec 11]
14. Name the various motility disorders of esophagus. Discuss pathophysiology and imaging features of cardiac imaging. [2+3+5 Dec 11]
15. Enumerate causes of multiple nodular filling defects in small bowel. Discuss the imaging features of small bowel lymphoma. [3+7 Dec 11]
16. Name the diseases associated with H. pylori infection. Briefly discuss barium meal features of benign & malignant gastric ulcer supported by suitable diagrams. [2+4+4 Jun 12]

17. Enumerate various infections & neoplasms affecting gastrointestinal tract in AIDS. Briefly describe barium meal follow through and CT features of AIDS lymphoma. [3+7 Jun 12]
18. Classify polypoidal lesions of the colon. Mention radiological differences between benign and malignant polyps. Discuss salient imaging features of various types of adenomatous polyps. [2+3+5 Jun 12]
19. Enumerate causes of malabsorption syndrome. Describe imaging features in tropical sprue. Briefly discuss its complications, [2+6+2 Jun 12]
20. Describe technique of MDCT and imaging findings in an 80 year old male presenting with lower gastrointestinal bleeding. Briefly discuss its therapeutic implications. Draw a suitable algorithm outlining role of investigative modalities. [3+5+2 Jun 12]
21. Describe normal gastroesophageal junction with the help of suitable diagram. Label various rings and lines visualized on double contrast barium swallow. Discuss imaging features of Schatzki's ring. [6+2+2 Jun 12]
22. Enumerate the normal and abnormal extrinsic impressions on the cervical & thoracic parts of the esophagus during Barium swallow examination. Discuss the possibilities in a 56-year-old woman presenting with dysphagia. Describe briefly the key radiological findings in any 3 conditions. [2+2+2+2+2 Dec 13]
23. A 70 year old man presented with lower GI bleed. Mention various causes of lower GI bleed and briefly describe role of contrast studies. CT scan imaging & intervention in it. [2+2+2+2+2 Dec 13]
24. Describe the technique of MR Enterography. Compare its benefits & limitations vis-à-vis conventional contrast studies and CT enteroclysis. [5+5 Dec 13]
25. Enumerate various imaging techniques employed for radiological evaluation of small bowel pathologies. Discuss the merits and demerits of each technique. Discuss in brief, CT findings in a case of ileocecal T.B [2+5+3 June 14]
26. Enumerate various conditions associated with polypoidal lesions in the large bowel. How will you distinguish b/w benign and malignant polyps on imaging? Discuss the merits and demerits of virtual CT colonoscopy in a case of suspected familial polyposis coli. [2+4+4 June 14]
27. Technique to evaluate the stomach and imaging features of stomach malignancies. [June 15]
28. Pathophysiology and imaging features in small bowel lymphoma. [10 June 15]

29. 55-yr old male comes with a history of dysphagia. How will you evaluate the patient? Discuss imaging findings and role of interventional radiology in carcinoma oesophagus.
30. Imaging features of acute appendicitis.
31. Enumerate different indications of scintigraphic evaluation of GI bleed. Briefly describe the technique, radioisotope used: interpretations & results. (2+4+2+2)
32. Enumerate causes of multiple nodular filling defects in the small bowel. Discuss the imaging features of small bowel lymphoma. (3+7)
33. Abdominal radiograph shows pneumointestinalis in a 55 yr old male patient. Enumerate various causes. describe the role of MDCT & imaging features in two such conditions. (2+8)
34. Enumerate different motility disorders of oesophagus. discuss pathophysiology and imaging features of achalasia cardia. (2+3+5)
35. Discuss the etiology of colonic strictures and the role of imaging in diagnosis.
36. Describe the radiologic features of gastro-intestinal tuberculosis.
37. Discuss role of radiology and imaging in acute abdomen.
38. Enumerate various motility disorders of oesophagus. Discuss pathophysiology of imaging features of achalasia cardia
39. Enumerate indications of scintigraphic evaluation of G.I. bleed. Briefly describe the technique, radio isotope used and interpretation of results.
40. How will you investigate a case of GI bleeding? Describe in brief the interventional procedures to control the same.
41. Enumerate premalignant conditions of GI tract and role of radiology in diagnosing them.
42. How will you investigate a case of dysphagia in a lady of 35 years of age. Briefly mention various conditions.
43. Radiological investigations in neuromuscular disorders of GI tract and discuss your findings
44. What are limitations of USG. Describe its applications in GI tract lesions in adult patients
45. Enumerate the motility disorders of oesophagus. Discuss the pathophysiology of imaging features of achalasia cardia.

46. Role of CT and MRI in obstruction.

Enumerate the causes of Acute Abdomen and Role of radiology in acute Abdomen.

47. Discuss the Imaging in G.I. bleeding.

SHORT ANSWER QUESTIONS

1. Radiologic features of gastric malignancies. [JAN 97]
2. Describe in brief the pathology, role of imaging & radiological features in GI tract lymphomas. [JUL 97, 98]
3. Necrotising enterocolitis. [JUL 98]
4. Carcinoid tumours. [JUL 99]
5. Role of Radiology and Imaging in intestinal ischemia. [JAN 00]
6. Radiological profile of ulcerative colitis. [JAN 01]
7. Imaging in a Vomiting infant. [02]
8. Intervention in upper GI bleeding. [DEC 02]
9. Imaging in postoperative stomach.
10. Anorectal Malformations. [02]
11. Intussusception. [02]
12. Gastric lymphoma. [DEC 02/03/06/07]
13. Malabsorption syndrome. [02]
14. Gastrointestinal lymphoma. JUN 04]
15. USG in appendicitis.
16. Non-tubular inflammatory bowel disease. [DEC 05, 06]
17. Critical appraisal on role of small bowel enema, CT & MRI enteroclysis. [JUN 07]
18. Colonic strictures – etiology and role of imaging in diagnosis of structures. [DEC 07]
19. Role of CT in Epiploic Appendicitis.
20. Internal Hernias.
21. Imaging of Acute Appendicitis.
22. Hirschsprungs disease
23. Oesophageal motility disorders
24. Virtual Colonoscopy

25. SMA syndrome
26. Virtual colonoscopy.
27. Congenital megacolon.
28. Small bowel enema.
29. Imperforate Anus.
30. Radiography in Acute abdomen.
31. Role of plain X-ray chest and abdomen in postoperative patient.
32. Discuss virtual endoscopy and their clinical application.
33. Significance of radiological mucosal studies in GI disorders
34. Role of radiology in complications of abdominal surgery
35. Different techniques of Ba meal stomach and duodenum.
36. Functional disturbances of esophagus- radiological evaluation
37. Development of GI tract and enumerate congenital anomalies.
38. Investigation of bleeding per rectum. Role of CT in carcinoma rectum.
39. Investigation of acute pain in RIF
40. Anatomy of peritoneal cavity. Discuss role of imaging in diagnosis of various peritoneal lesions.
41. Hypotonic duodenography
42. Causes of free fluid in peritoneal cavity. Discuss the differential with the help of various radiological techniques.
43. Roentgen appearances of hydatid disease
44. Discuss imaging in abdominal TB
45. Discuss the modern methods to treat a patient presenting with haematemesis
46. How will you investigate a case of hematemesis
47. Pathologic and imaging findings in ulcerative colitis
48. Imaging of constipation and anorectal malformation
49. Enumerate parasitic infestation related to imaging. Describe imaging in any of two.

HEPATOBILIARY SYSTEM

LONG ANSWER QUESTIONS

1. Discuss the etiology, Classification, imaging features and complication of choledochal cyst. [June 2008]
2. Discuss Portal Hypertension : its radiological diagnosis and interventional therapy. [JAN 00, DEC 02, 03, 05; JUN 06, 09]
3. MRI features of hepatic hemangioma. Briefly discuss role of radiology in treatment of hepatic hemangioma. [09]
4. Radio frequency ablation of hepatic neoplasm. [09]
5. Describe CT features of liver trauma and discuss role of intervention in this. [June 2008]
6. Enumerate the causes of obstructive Jaundice. Describe technique of MRCP and its role in obstructive Jaundice. [Dec 2010]
7. What is the role of diagnostic imaging modalities in Cholangiocarcinoma. Discuss the morphological findings and the significance of various modalities in management of the disease. [Jun11]
8. Enumerate the SOL in liver. Describe the USG features in any 3 of them. [Jun 11]
9. Mention the various interventional techniques used in HCC. Briefly discuss indications and technique of two commonly employed techniques. Outline protocol for follow up in a case of HCC. [1+8+1 Dec 11]
10. Enumerate the most common cause of a 6 year old male presenting with hepatomegaly, ascites & features of portal hypertension. Discuss imaging modalities employed to investigate such patients along with various imaging features. Briefly mention role of interventional radiology in its management. [1+7+2 Jun 12]
11. A 15 day old infant has presented with prolonged conjugated hyperbilirubinemia accompanied by non pigmented stools. Name the possible etiology. Describe imaging features and various associations that may be seen in such a case. [1+6+3 Jun 12]
12. Enumerate benign hepatic masses. Describe imaging features (USG, CT, & MRI) of two commonly encountered such lesions. [2+4+4 Jun 12]

13. Describe the segmental anatomy of liver in cross sectional imaging. Discuss the role of triple phase CT in differentiating focal lesions in cirrhotic liver. [4+6 Dec12]
14. Enumerate the common causes of obstructive jaundice. Discuss the role of various imaging modalities in its diagnosis. [2+8 JUN 13]
15. Describe etiopathogenesis of biliary atresia. Discuss the role of ultrasound, MRI and scintigraphy in assessment of biliary atresia. [2+3+2+3 Dec 13]
16. Describe pre-transplant imaging in a liver donor. What are common complications after liver transplant? Discuss the role of intervention in treating complications. [3+2+5 Dec 13]
17. What are various interventional techniques available to treat hepatic malignancies? Discuss the role of chemoembolization in hepatic malignant lesion. [3+4+3 Dec 13]
18. Describe the anatomy of portal venous system. What are the causes of portal hypertension? Describe the role of intervention in portal hypertension. [4+2+4 Dec 13]
19. Enumerate the causes of arterial phase enhancing focal lesions in the liver. Discuss the role of MDCT and MRI in DD of these lesions. [2+4+4 June 14]
20. a) Von Meyenburg complex. b) Imaging features of fibrolamellar HCC. [5+5 Dec 14].
21. US examination of a cirrhotic patient shows a solitary nodule in right lobe of liver. How would you investigate such a patient? Discuss in detail the role of CT, MRI and interventional radiology in such a case. [2+3+3+2 Dec 14]
22. Describe the technique and indications of multiphasic CT scan of liver. Discuss the CT & MRI characteristics of various malignant focal lesions of liver.
23. How will you evaluate a case of obstructive jaundice and discuss the role of interventional radiology in its management?
24. Describe technique of MRCP. What are the advantages and disadvantages of MRCP vs ERCP.
25. USG examination of a cirrhotic patient shows a solitary nodule in right lobe of liver. how would you investigate such a patient? Discuss in detail the role of CT, MRI & interventional radiology in such a case. (2+3+3+2)
26. Draw labelled diagram of common portosystemic collateral pathways. Enumerate different interventions in portal hypertension. discuss in details TIPS. (2+2+6)

27. Describe techniques, indication, contraindications and diagnostic usefulness of PTC.
28. Describe anatomy of portal venous system. Role of imaging in evaluation of portal venous hypertension.
29. Discuss pathology of hepatic cirrhosis. Investigation of case of portal hypertension.
30. Discuss the common interventional radiological procedures performed in the biliary system

SHORT ANSWER QUESTIONS

1. Choledochal cyst. [JAN 97, JUL 98, DEC 02/05]
2. Budd-chiari syndrome. [JAN 97, DEC 04]
3. Ultrasonography features in cirrhosis liver with portal hypertension. [JUL 98]
4. Role of imaging in obstructive jaundice. [JUL 99]
5. Hepatobiliary intervention in Obstructive jaundice. [JUN 03]
6. Non-Invasive evaluation Of Portal Hypertension. [02]
7. Neonatal jaundice. [02]
8. MRCP in obstructive jaundice. [Dec 02]
9. Cystic lesions of liver. [DEC 04]
10. Benign lesions of the liver. [DEC 05, JUN 06]
11. Therapeutic interventions in liver tumors. [JUN 05]
12. Triple phase Portography. [JUN 06]
13. Doppler in hepatic cirrhosis. [DEC 07]
14. Colour Doppler and CT features in portal hypertension. [09]
15. Interventions in Hepatic tumors. [DEC 06]
16. Interventinal management of Hepatocellular carcinoma. [09]
17. Imaging techniques and findings in a case of Budd Chiari syndrome. [June 15]
18. Radiological and nuclear Imaging of Biliary atresia.
19. Focal nodular hyperplasia (FNH)
20. Mucopolysaccharidoses
21. Imaging features of fibrolamellar HCC.
22. Nuclear medicine & biliary atresia
23. Segmental anatomy of liver.
24. Biliary interventions
25. Portal hypertension

26. Hepato-cellular carcinoma
27. Interventional procedures in management of jaundice.
28. Role of USG in obstructive jaundice
29. Role of Triphasic Imaging in patient with Solitary liver lesion.
30. What is TIPS and Role of imaging in TIPS.
31. Discuss the Magnetic Resonance Cholangio pancreatography (MRCP)

PANCREAS

LONG ANSWER QUESTIONS

1. Classify pancreatic neoplasms. Describe imaging features in a case of carcinoma head of pancreas. [Dec 2010]
2. Discuss the role of CT in evaluation of pt. with acute pancreatitis, outlining the technique, CT signs, assessment of disease severity and its relationship to outcome of patient. [Jun 2011]
3. What is Pancreatic divisum?. Briefly discuss its embryologic basis & clinical significance. What are ERCP, MRCP & MDCT findings. [2+3+5 Dec11]
4. Enumerate various pancreatic masses of childhood. Discuss their imaging features & DDS of pancreatoblastoma. [2+5+3 Dec 11]
5. Briefly describe embryological development of pancreas. Describe various anomalies & variations in its development with the help of suitable diagrams. Discuss imaging features (on barium meal and CT scan) of annular pancreas. [4+3+3 Jun 12]
6. Enumerate various indications of upper gastrointestinal endoscopic sonography. Briefly discuss it's role in evaluation of pancreatic pathologies outlining the advantages and disadvantages. [2+8 Dec 12]
7. Discuss the technique and role of CT in the evaluation of acute pancreatitis [2+8 Jun 13]
8. A 40 year old female with pain abdomen is found to have a cyst in the body of pancreas on USG. Enumerate various possible causes. Discuss the imaging algorithm you would follow for arriving at diagnosis in this case. [2+8 June 14]
9. a) Anomalous pancreatobiliary ductal junction and its complications [5 Dec 14] b) Intra-ductal papillary tumors of pancreas. [5 Dec 14]
10. Enumerate various complications of acute and chronic pancreatitis. Describe briefly the imaging features and role of interventional radiology in these conditions. [2+4+4 Dec 14]
11. Enumerate various neuroendocrine tumors of pancreas. b) Characteristic features of these on various imaging modalities including the role of radio-nuclide imaging. [5+5 June 15]

12. Imaging and interventions in vascular complications of pancreatitis. b) Imaging features of multicystic dysplastic kidney. [5+5 June 1]
13. Draw neat labelled diagram of normal pancreaticobiliary duct anatomy. What are the various abnormalities of pancreaticobiliary duct system? Write in detail imaging features of pancreatic divisum with emphasis on secretin enhanced DWI imaging. (2+3+5)
14. Enumerate cystic neoplasms of pancreas. Write in detail imaging features of intraductal papillary mucinous neoplasms . Draw algorithm approach for incidental pancreatic cysts ,management. (2+5+3)
15. Radiological features of acute and chronic pancreatitis. Describe various imaging techniques. Which modality do you think most suitable.

SHORT ANSWER QUESTIONS

1. Endocrine tumours of the pancreas. [JUL 98]
2. Pancreatic pathology. [DEC 02]
3. Classification and Imaging of Neuroendocrine tumors of pancreas. [DEC 04/09]
4. Grading of Pancreatitis and its relevance. [02]
5. CT in Pancreatitis . [JUN 04]
6. Acute Pancreatitis . [JUN 05]
7. Pancreatic Endosonography.
8. Image guided interventions in pancreatic disease. [09]
9. Radiological features in cystic tumors of pancreas. [09]
10. Biliary atresia [5 Dec 14]
11. Role of MRCP in Pancreatic diseases
12. M.P.D
13. Imaging in Cystic lesions of Pancreas
14. Cystic tumors of pancreas
15. Anatomy of pancreas and imaging techniques
16. Imaging and pathology of pancreatic SOLs

GENITOURINARY SYSTEM

LONG ANSWER QUESTIONS

1. Discuss the pathology of renal hypertension & radiological investigations for the same. [JUL 98]
2. Discuss the pathophysiology of renovascular HTN and role of imaging. [02]
3. Diagnosis of renal hypertension – present day approach. [JUN 05]
4. Imaging in evaluation of renovascular hypertension in a ten year old male. [09]
5. Discuss the role of various imaging modalities in a suspected case of renovascular hypertension. [June 2008]
6. Child with UTI. Provide a protocol for imaging and mention their features. [JAN 00]
7. How will you investigate a case of painless hematuria? What is role of Radiologist in its management?
8. Classify cystic diseases of kidney and discuss role of ultrasound in these lesions. [Jun 07]
9. Enumerate causes of unilateral small kidney. Describe the role of imaging in its diagnosis. [DEC 09]
10. Mention ultrasound and Doppler findings in varicocele. Describe the role of intervention in its management. [09]
11. Enumerate the causes of Varicocele. Write US technique and US and color Doppler features in Varicocele. [June 2008]
12. Enumerate various investigative modalities for the transplanted kidney & give the normal findings in each of them. [JUL 99]
13. Doppler in renal transplant [DEC 02/09, JUN 04]
14. Role of color Doppler and ultrasound in post renal transplant patient. [09]
15. How would you evaluate donor kidney for renal transplant. Discuss role of US and Scintigraphy in various types of renal graft dysfunction. [June 2008]
16. Imaging in Non tubercular renal infections [December 2008]
17. Non vascular Interventions in upper urinary tract. [09]
18. Embryology, clinical significance and imaging of undescended Testis. [2010]

19. Indications, imaging features and limitations of imaging in erectile dysfunction. [2010]
20. Describe the blood supply of testes with the help of diagram. Enumerate various types of testicular torsions. Describe imaging findings in each. [Dec 2010]
21. Discuss the etiopathogenesis and radiological features of renal tuberculosis. [Dec 2010]
22. Enumerate the indications and describe the techniques of color Doppler in Renovascular hypertension. [Dec 2010]
23. Enumerate various complications of Renal transplant and discuss their imaging findings. [Dec 2010]
24. Enumerate causes of hypertension in 10 yr old male child. Outline radiological approach in such a case. Role of MDCT and intervention in renal hypertension. [June 2011]
25. What is vesico-ureteric reflux. Discuss its causes and grading. Briefly describe role of imaging in this condition. [June 2011]
26. Enumerate causes of unilateral small Kidney. Discuss role of imaging in establishing the diagnosis. [June 2011]
27. Discuss the role of imaging in uraemia, citing the specific role and limitations of conventional radiography, US, CT, MRI and renal scintigraphy. [June 2011]
28. Discuss the grading of renal trauma. Describe the role of imaging in its evaluation. [4+6 Dec 11]
29. Briefly describe the penile arterial flow physiology. Discuss the technique and utility of duplex sonography in evaluation of erectile dysfunction. [3+4+3 Dec 11]
30. Describe venous drainage of testis. Discuss imaging features & interventions in varicocele. [3+4+3 Dec 11]
31. Enumerate various vascular complications in renal transplant. Briefly discuss the role of color Doppler, CT, MRI and intervention in these conditions. [1+3+2+2+2 Dec 11]
32. Briefly describe MRI and MRS findings in prostatic carcinoma and its staging. Discuss role of TRUS biopsy. [4+4+2 Dec 11]
33. What are common causes of medially placed ureters? Discuss various associations. IVU, CT & MRI findings of retroperitoneal fibrosis. [2+2+2+2+2 Jun 12]

34. Enumerate causes of urethral strictures. Briefly discuss role ascending urethrogram in strictures due to trauma. Name common complications of urethral strictures. [3+5+2 Jun 12]
35. Enumerate various ovarian tumors of stromal origin. Briefly discuss imaging features of serous and mucinous cystadenocarcinoma and cystadenoma. [3+2+2+3 Jun 12]
36. Describe technique of TRUS guided biopsy of prostate. Briefly mention role of contrast imaging in investigation & biopsy of a prostatic lesion. [8+2 Jun 12]
37. Enumerate the causes of hematuria in a 50yr old male patient. Briefly discuss the role of various imaging modalities in diagnosis and staging of renal cell carcinoma. [2+4+4 Dec 12]
38. Discuss the role of imaging in uremia, citing the specific role and limitation of conventional radiography, sonography, CT, MR & renal scintigraphy. [5+2 Dec 12]
39. List the anatomical sites which may become afflicted in renal TB. Discuss their radiological features in brief. [2+8 Jun 13]
40. A 24 year old with presenting features of low grade fever, lassitude and aseptic pyuria is referred to you for radiological work up. What is the likely diagnosis? How would you investigate this patient?
- Describe the key radiological signs, specifying the changes in early, intermediate & late stages of the disease. [1+3+6 Dec 13]
41. A 38 year old RTA victim is brought to you from the casualty with history of frank hematuria. How would you evaluate this patient? Discuss the possibilities with their key radiological findings. [4+6 Dec 13]
42. Describe penile circulation. What are the causes of male impotence? Discuss the role of Color Doppler imaging in impotence. [4+2+4 Dec 13]
43. A 40 yr-old-female pt. presented with complaints of vague right lumbar pain. An USG revealed a cystic lesion in right kidney. She was advised to undergo CT scan by the radiologist for further evaluation. Enumerate possible causes. Discuss the CT protocol & findings in various lesions. [2+2+6 June 14]
44. What are the causes of painless hematuria in a 50 yr old male patient? Discuss the imaging features and role of interventional radiology in two such pathologies. [2+4+4 Dec 14]
45. Renal tuberculosis. [5 Dec 05/07/09, Jun 07, Dec 14]

46. A young adult male presents with painless testicular mass. What is the differential diagnosis and imaging features in the most common cause? [June 15]
47. a) Pathogenesis and imaging features of xanthogranulomatous pyelonephritis. b) Imaging features of abdominal lymphangioma. [5+5 June 15]
48. Briefly describe MRI & MRS findings in prostatic carcinoma 8: its staging. Discuss the role of TRUS guided biopsy. (4+4+2)
49. What are common causes of medially placed ureters? Discuss various associations, IVU, CT and MRI findings of retroperitoneal fibrosis? (2+2+2+2+2)
50. A 24 year old male with low grade fever, lassitude & aseptic pyuria is referred to you for radiological work up. What is the likely diagnosis? How would you investigate? Describe key radiological signs specifying changes in early, intermediate and late stages of the disease. (1+3+6)
51. Describe various modifications of IVU. What changes are seen in chronic pyelonephritis, perinephric abscess and Wilm's tumor?
52. Investigation of case of haematuria. Discuss radiological findings in case of hypernephroma.
53. Obstructive causes of hydronephrosis. Role of imaging in vesico-ureteric reflux
54. Zonal anatomy of prostate. Role of TRUS in prostate carcinoma.
55. Causes of unilateral nonfunctional kidney. How will u investigate with imaging techniques?
56. Destructive lesions of kidney associated with calcifications. Discuss differential with radiological findings.
57. Pathogenesis, investigation and radiological appearances of tuberculosis of urinary system
58. Renal artery stenosis and imaging features and imaging in renal transplant.
59. Various imaging techniques in diagnosis of lesions of kidney
Discuss the investigations in renovascular hypertension
60. Classify the cystic renal lesions. Discuss pathological basis for the radiological appearances of the same
61. Imaging anatomy of the adrenal glands on CT. Enumerate adrenal lesions and discuss imaging any of them

SHORT ANSWER QUESTIONS

1. Differentiation of Renal Cyst and Renal tumour by I.V.P. [JAN 97]
2. Diagnosis of Urinary Bladder's tumours. [97,02]
3. Discuss the role of imaging in Renal trauma.
4. Polycystic disease of kidneys. [JAN 97, JUN 04]
5. Posterior urethral valves. [JUL 97, JUN 06]
6. Epispadias extrophy complex.
7. Pathology of renal neoplasms in the paediatric age group.
8. Acute scrotum [JUL 99,02]
9. Cystic diseases of the kidney.
10. Imaging of prostate. [JAN 00, JUN 04]
11. Prostatic tumors. [JUN 03]
12. Testicular germ cell tumors. [JAN 01]
13. Radiological diagnosis of congenital lesions of kidney.
14. Interventions in upper urinary tract obstruction. [01]
15. Imaging in renal malignancies. [04]
16. Role of Doppler in testicular tumor. [DEC 04]
17. Vesicoureteric reflux. [DEC 04/09]
18. Nephrocalcinosis. [02, 04, 06]
19. Imaging in renal malignancies.
20. Renal tuberculosis. [Dec 05/07/09, Jun 07, Dec 14]
21. Ureterocoele. [02,05]
22. Imaging of unilateral scrotal swelling.
23. Diagnosis of non malignant prostatic enlargement.
24. Angiomyolipoma of the kidney. [JUN 06]
25. Neurogenic bladder.

26. Unilateral large kidney in a child.
27. Renal Cell Carcinoma. [JUN04]
28. Emphysematous pyelonephritis.
29. Doppler evaluation in male impotence.
30. MR staging of prostate carcinoma. [09]
31. Penile Doppler. [06]
32. Discuss imaging of erectile dysfunction. [09, 10]
33. Color Doppler evaluation of erectile dysfunction. [June 08]
34. Imaging in Transplant kidney. [02]
35. Vesico-ureteric reflux.
36. Posterior urethral Valves
37. Renal tuberculosis
38. Imaging in Renal Hypertension
39. Imaging in Erectile dysfunction
40. Nephrocalcinosis
41. Role of dynamic radionuclide studies in Urinary Tract Obstruction.
42. Angiomyolipoma of the kidney
43. TB. of urinary system
44. Renal cell carcinoma
45. Imaging of prostate
46. How will you investigate a patient with hematuria?
47. Radiological findings in cystic disease of kidney.
48. Role of USG in medical renal disease
49. Radiological features and management of renal hypertension.
50. Developmental anomalies of kidneys and ureter
51. Causes of urinary calculi and radiological investigations for same.

- 52. Developmental anomalies of kidneys and ureter
- 53. Causes of urinary calculi and radiological investigations for same.
- 54. Role of radiology in renal transplant
- 55. Renal Tuberculosis
- 56. Percutaneous nephrostomy
- 57. Renal osteodystrophy.
- 58. Adrenal masses in USG

OBSTETRICS AND GYNAECOLOGY

LONG ANSWER QUESTIONS

1. Enumerate markers of chromosome abnormality on antenatal ultrasound. Briefly discuss their sonographic features. [09]
2. Describe the sonographic findings favouring the diagnosis of ectopic pregnancy and its DD. [2010]
3. Enumerate the vascular and structural abnormalities of the Umbilical cord. Describe the velocity waveform changes seen in the umbilical artery Doppler. [2010]
4. Enumerate the causes of infertility. What is the role of imaging in assisted reproduction. [Dec 2010]
5. Define fetal hydrops. Enumerate its causes. Describe sonographic and color doppler findings noted in this condition. [Dec 2010]
6. Discuss the sonographic techniques and criteria used in evaluation of uterine cervical incompetence. [Dec 2010]
7. Enumerate the common locations of ectopic pregnancy in order of frequency. Discuss the sonographic findings of ectopic pregnancy. [Dec 2010]
8. Describe the role of imaging in recurrence of ovarian malignancy after surgery. [Dec 2010]
9. Enumerate conditions under which the revised PNDT act 2010, permits you to conduct prenatal diagnostic techniques . What steps would you take in clinical USG practice to comply with the act. [June 2011]
10. Outline the diagnostic imaging approach in a pt. with Ovarian malignancy. Describe imaging features, staging & impact of cross sectional imaging in ovarian cancer. [June 2011]
11. Define abnormal endometrial thickening. Enumerate its causes & discuss their imaging features. [2+2+6 Dec11]
12. List various causes of female infertility. Discuss the role of HSG & MRI in their evaluation. [2+4+4 Dec11]
13. List various causes of bleeding in first trimester. Discuss their sonographic features. [2+8 Dec 11]

14. Enumerate various color doppler parameters used in IUGR. Briefly discuss their role in IUGR. Mention the significance of aortic isthmus index. [2+6+2 Dec 11]
15. Describe measurement technique & normal values of nuchal translucency. Briefly discuss its role in Trisomy 21 & other chromosomal anomalies. [4+2+2+2 Dec 11]
16. Describe various fetal Doppler parameters used to assess fetus at risk of IUGR. Discuss recent advances as regards their significance in predicting fetus at risk. [6+4 Jun 12]
17. List various indications of MRI examinations in obstetrics. Outline various sequences used along with their rationale. Briefly describe MRI findings in two conditions presenting obstetric emergencies. [2+4+4 Dec 12]
18. List the causes of post menopausal bleeding. Briefly describe the role of various imaging modalities highlighting their advantages and pitfalls. Describe the MRI findings in a case carcinoma cervix. [2+4+4 Dec 12]
19. Enumerate various causes of female infertility. Describe the role of HSG & MRI in their diagnosis. [2+4+4 Dec 12]
20. Write short notes on: [5+5 Dec 12]. A. PC-PNDT Act. B. Conventional lead apron and zero lead apron.
21. What is 'placenta accreta'? What are its types? Which imaging modalities would be useful in its diagnosis? Briefly describe the imaging features of each imaging modality? [1+1+2+6 Jun 13]
22. Enumerate the factors that enhance the risk of ectopic pregnancy. What would be its classic clinical signs? Discuss the role of USG in its diagnosis highlighting the key imaging features. [2+2+6 Jun 13]
23. A 19 year old girl is referred with complaint of primary amenorrhea from the Department of Gynecology. As a radiologist, how would you evaluate her? Enlist the radiological investigations that might be beneficial to her, enumerating the precise entities you might identify with each. Describe the key radiological findings in any one clinical condition which may present as primary amenorrhea. [2+5+3 Dec 13]
24. A 26 year old patient, who is 12 weeks post-partum, is referred to you for radiological appraisal with a history of bleeding per vaginum & raised beta-HCG levels. What is the likely diagnosis? How would you evaluate this patient? Discuss the possibilities with their key radiological findings. [1+3+6 Dec 13]
25. How would you decide on the amnionicity & chorionicity in twin pregnancies? Enumerate the various complications that may occur in a twin pregnancy. Describe the various radiological findings in twin-twin transfusion syndrome. [4+2+4 Dec 13]

26. Define IUGR. Enumerate its causes. Discuss the role of imaging in management of IUGR. [1+2+7 June 14]
27. Enumerate and classify various congenital anomalies of the uterus. Discuss the role of US and MRI in their diagnosis, highlighting their advantages and limitations. [3+7 June 14]
28. Enumerate various MRI sequences used for evaluation of the uterus, highlighting their specific role. Describe the role of MRI in suspected carcinoma cervix along with their MR findings. [4+6 June 14]
29. Define habitual abortion. Enumerate various causes of habitual abortion. Discuss the role of imaging in diagnosis and follow up of these cases. [1+2+5+2 June 14]
30. Enumerate causes of first trimester bleeding. Discuss the imaging features to diagnose and follow-up such patients. [3+7 Dec 14]
31. Placenta accreta - Pathophysiology and imaging findings [5 Dec 14]
32. Indications, technique and complications of uterine artery embolization. [June 15]
33. Ultrasound in a 35 yr old female shows a right adnexal cystic mass. a) What are the likely causes? b) Algorithmic approach and imaging features in these causes. [2+8 June 15]
34. a) Normal anatomy of placenta. b) What are the different types of abnormal placental implantation. c) Role of imaging in placenta accreta. [2+2+6 June 15]
35. Enumerate common location of ectopic pregnancy in order of frequency and discuss USG features of ectopic pregnancy.
36. Describe indications, techniques and complications of uterine artery embolisation. (2+4+4)
37. A 19 yr old girl is referred with primary amenorrhea from the department of gynaecology, as a radiologist how would you evaluate her? Enlist the radiological investigations that might be beneficial to her, enumerating the precise entities you might identify with each. Describe the key radiological findings in any one clinical condition which may present as primary amenorrhea. (2+5+3)
38. Methods of localization of placenta. Discuss the radiological signs of fetal death in brief.
39. Role of CT and MR in obstetrics
40. Enumerate causes of antepartum haemorrhage. Discuss the radiological appearances of placenta praevia in detail.

SHORT ANSWER QUESTIONS

- 1.Imaging of Intra Uterine Foetal Death. [JAN 97]
- 2.Discuss the role of imaging in uterine lesions. [JUL 97]
- 3.Endometriosis. [JUL 93, DEC 04, JUN 07]
- 4.Ectopic Pregnancy. [JUL 99, DEC 05]
- 5.Alimentary tract lesions diagnosable in-utero
- 6.Role of Sonography in I.U.G.R.
- 7.Imaging of the placenta [JAN 00]
- 8.Write in detail US features of placental evaluation. [June 08]
- 9.Sonographic diagnosis of ectopic pregnancy. [JAN 01]
- 10.PCOD. [02]
- 11.Imaging in Infertility . [DEC 02, 03]
- 12.Endometrium in USG. [JUN 03]
- 13.Biophysical score. [DEC 03, JUN 04]
- 14.Uterine interventions . [DEC 05]
- 15.PNDT [DEC 05/06/07]
- 16.MRI in gynecologic imaging.
- 17.Cystic lesions of ovaries. [JUN 05]
- 18.Sonography of cystic ovarian masses. [09]
- 19.Doppler evaluation in IUGR . [JUN 05,06]
- 20.Radiological evaluation of delayed milestones. [JUN 06]
- 21.Role of USG in assessment of prenatal genitourinary tract. [DEC 06]
- 22.Antenatal detection of Vein of Galen malformation. [06]
- 23.Antenatal MRI. [JUN/DEC 07]
- 24.Sonography of cystic ovarian masses.
- 25.CT - Pelvimetry.

26. Transvaginal scan in female infertility. [09]
27. USG in female Infertility [December 2008]
28. Uterine artery embolisation. [December 2008]
29. Uterine artery embolization.
30. Imaging of placenta.
31. HSG procedure and importance.
32. Anomaly scan
33. USG findings in abortion
34. Ultrasonography in 1st trimester
35. Uterine anomalies
36. Discuss role of sonography in 1st Trimester of Pregnancy.
37. USG is the mainstay as a screening procedure in cases of bleeding PV discuss.
38. Role of imaging in ovarian tumors.
39. Investigation of precocious puberty.
40. Radiological investigations in case of infertility.
41. Role USG in first trimester of pregnancy.
42. Investigations in secondary infertility
43. Pathological features of leiomyoma. Describe imaging features of same
44. USG in third trimester of pregnancy
45. Discuss IUGR
46. Anencephaly
47. Define IUGR and Role of imaging.
48. Ectopic pregnancy.
49. Fibroid.
50. Nuchal Translucency.
51. Describe the role of ultra sonography in first trimester.

52.Imaging in Primary Infertility.

BREAST

LONG ANSWER QUESTIONS

1. Describe imaging features of Breast cancer on Mammography, US and MRI. Briefly outline approach (by flow chart) in BIRADS 4 lesion. [June 2011]
2. Discuss the current indications of MRI in breast cancer evaluation. Discuss MRI features of breast cancer. [5+5 Dec 11]
3. Describe the various mammographic techniques in brief, types of mammographic equipments available & current recommendations for its use for routine screening. [4+3+3 Dec11]
4. Briefly describe diffusion protocol for MRI breast & characterisation of benign and malignant breast lesion. [2x2x4 Dec 11]
5. Briefly describe the components of BIRADS system used for reporting of mammograms. Describe the indications and findings of various breast lesions on MRI [4+2+4 Dec 12]
6. Describe imaging features of Breast cancer on Mammography, US and MRI. Briefly outline approach (by flow chart) in BIRADS 4 lesion. [Dec 14] (repeat from June 11)
7. 45-yr old female came with the h/o lump in breast. How will you evaluate this patient with emphasis on role of imaging?
8. Mamography and various positions during radiography
9. Describe imaging features of breast cancer on mammography , CI" & MRI. Briefly outline approaches in BIRADS 4 lesions. (3+2+2+2)
10. Technique of mammography and its role in evaluation of suspected benign and malignant lesions of breast.

SHORT ANSWER QUESTIONS

1. Breast Masses. [DEC 02]
2. Indications of X-ray mammography, Sonography and MRI of Breast. [02]
3. Discuss the recent advances in Mammography.[02]
4. Mammographic features of Carcinoma Breast. [02]
5. Sonography in solid breast masses. [June 08]
6. Benign breast disease. [JUN 04]
7. MRI in malignant breast lesions. [09]
8. Conventional mammography techniques.
9. X-ray Mammographic tube and Breast mammographic views. [DEC 06]
10. Mammography. [DEC 05, JUN 06]
11. Mammographic Tube & Mammography equipment. [JAN 00, DEC 04, JUN 09]
12. Discuss about mammography X-ray tube. [09]
13. Recent developments in mammography X-ray tube. [09]
14. Computer aided detection (CAD) in Mammography.[09]
15. Screening mammography – Current status. [09 and repeated on Dec 14]
16. Describe BIRADS classification. [09]
17. Ultrasound Elastography in Breast lesions. [09]
18. Sonomamography
19. Role of mammography in USG
20. Mammography.
21. Imaging in breast diseases and intervention techniques in breast diseases.
22. Role of mammography in Breast lesions.

MUSCULOSKELETAL SYSTEM

LONG ANSWER QUESTIONS

1. Enumerate various causes of Para vertebral masses and their imaging features. [June 2008]
2. Mention causes of inferior rib notching. Discuss imaging features of 2 common causes. [09]
3. What are round cell tumors of bone? Discuss in detail differentiating imaging features in these. [June 2008]
4. Describe radiological features, complications and differential diagnosis of Paget's disease. [June 2008]
5. Discuss the techniques, imaging features & limitations of sonographic evaluation of the rotator cuff [June 2008]
6. Describe different types and imaging features of fractures. What are the complications of fracture? [2010]
7. Define Stress fracture. Enumerate various sites and predisposing factors of stress fracture. Describe various imaging features of stress fractures. [Dec 2010]
8. Describe in brief various imaging features of Osteoid osteoma. Discuss its differential diagnosis. [Dec 2010]
9. Describe the life cycle of hydatid disease causative organisms. Enumerate sites of affection in human beings. Describe imaging features of Musculoskeletal hydatidosis. [Dec 2010]
10. Enumerate causes of Hypertrophic osteoarthropathy. Discuss its DD & describe its imaging findings on plain radiograph. [Jun 2011]
11. Discuss the radiographic and sonographic features of developmental dysplasia of Hip. [Jun 2011]
12. Describe the MR anatomy of the knee joint. Briefly state the MR sequences you would employ to delineate a suspected medial meniscus tear. [June 2011]
13. Enumerate different varieties of Osteosarcoma. Discuss their imaging features. [3+7 Dec 11]
14. Describe etiopathogenesis of Osteomyelitis. Discuss role of imaging in acute osteomyelitis. [4+6 Dec 11]

15. Discuss the clinical associations of Hypertrophic Osteoarthropathy. Briefly describe its radiological findings. Differential diagnosis & role of Nuclear medicine. [3+4+2+1 Dec 11]
16. Classify scoliosis. Discuss imaging features of plain radiographic, CT and MRI in neurofibromatosis of spine. Discuss Cobb's angle and draw a diagram illustrating its measurement. [2+5+2+1 Jun 12]
17. Mention causes of periosteal new bone formation. Briefly discuss characteristic radiological features of osteomyelitis affecting infants, children & adults. [2+8 Jun 12]
18. Mention differential diagnosis of 15 year boy presenting with localized pain and swelling of 2 months duration in right lower thigh. Discuss conventional radiographic, CT and MRI features of the commonest primary malignant bone tumor in this age. [1+3+3+3 Jun 12]
19. Classify cysts of jaw. Describe briefly imaging features of each type of cyst. Draw suitable diagrams to describe various types. [2+6+2 Jun 12]
20. Discuss differential diagnosis and imaging features of painless expansile lesion involving single rib in an adult. [3+7 Jun 12]
21. List the causes of posterior scalloping of vertebrae. Describe skeletal changes seen in von Recklinghausen's disease. [2+8 Dec 12]
22. Enumerate various causes of hemolytic anemia. Describe the imaging findings in a case of Thalassemia major. Briefly discuss its DDs from sickle cell anaemia. [2+5+3 Dec 12]
23. Briefly discuss the pathophysiology of osteomalacia. Describe the radiological findings in renal osteodystrophy. Enumerate the findings that help in differentiating from primary hyperparathyroidism. [3+4+3 Dec 12]
24. What is Osteoporosis? Enumerate causes of osteoporosis. Discuss any 3 imaging modalities currently in vogue for assessment of bone mineral density. [2+2+6 Jun 13]
25. What are the key clinical features, common sites & radiological findings in Ewing's sarcoma? Discuss its differential diagnosis in brief. [2+2+4+2 Jun 13]
26. The Child Welfare Board has referred an accused to you for estimation of age. Being a radiologist, how would you carry out this assignment? Discuss in brief the variables that can affect the estimated age. [6+4 Jun 13].

27. Enumerate causes of painful limp in a child unable to bear weight. Briefly discuss the role of plain X-ray arthrography, US, CT, MRI and scintigraphy in arriving at diagnosis. [2+2+1+1+1+2+1 Jun 13]
28. Discuss the role of plain X-ray, CT and MRI in cases of lower cervical spinal trauma. [3+4+3 Jun 13]
29. Describe the MR anatomy of the shoulder joint. Briefly state the MR sequences you would employ to delineate various lesions of the shoulder joint. [4+6 Jun 13]
30. a. Ossification of elbow joint and its clinical significance. b. Fusion imaging. [5+5 Jun 13]
31. Enumerate any 5 morphological patterns of periosteal reaction and state their clinical significance. [2+2+2+2+2 Dec 13]
32. Discuss the pathophysiology of osteomalacia. Describe imaging features in primary hyperparathyroidism. [5+5 Dec 13]
33. Enumerate the hematopoietic disorders which causes marrow changes. Discuss the MRI findings of any two of these marrow disorders. [2+4+4 June 14]
34. Discuss the imaging features of avascular necrosis of the hip and its DD. [7+3 June 14]
35. What are the causes and imaging features of hypertrophic osteoarthropathy [3+7 June 14]
36. A 10-yr-old child has presented with swelling of the mandible. Enumerate the causes and discuss the imaging findings of any two. [2+2+6 June 14]
37. Enumerate the causes of hypertrophic osteoarthropathy. Briefly describe its radiological findings, DD and role of Nuclear medicine. [2+4+2+2]
38. Enumerate various causes of hemolytic anemia. Describe the imaging findings in a case Of Thalassemia major. Briefly discuss its DDs from sickle cell anaemia. [2+5+3 Dec 14] (this question was repeated from Dec 12)
39. List the causes of posterior scalloping of vertebrae. Describe skeletal changes seen in von Recklinghausen's disease. [2+8 Dec 14]
40. Enumerate causes of painful limp in a child unable to bear weight. Briefly discuss the role of plain X-ray, arthrography, US, CT, MRI and scintigraphy in arriving at diagnosis. [2+2+1+1+1+2+1 Dec 14](exact repeat from June 13)

41. Classify cysts of jaw. Describe briefly imaging features of each type of cyst. Draw suitable diagrams to describe various types. [2+6+2 Dec 14](exact repeat from June 12)
42. a. Ossification of elbow joint and its clinical significance. b. Fusion imaging. [5+5 Dec 14] (exact repeat from Jun 13)
43. a) Enumerate different varieties of osteosarcoma. b) Imaging features of various surface osteosarcomas. [5+5 June 15].
44. a) Pathophysiology of different types of hyperparathyroidism. b) Imaging features of primary HPT [5+5 June 15].
45. a) MRI anatomy of knee joint. b) Role of MRI in evaluation of meniscal injuries.
46. Various osseous changes in NF. [June 15]
47. Causes of paravertebral shadow in lumbar region and their differential diagnosis. [June 15]
48. Enumerate osteochondritis/ osteochondrosis. Discuss imaging in osteochondritis of the femoral capital epiphysis.
49. Differential diagnosis of soft tissue calcification. Causes of acro-osteolysis. Discuss radiological differential diagnosis in each of them.
50. Enumerate causes of painful limp in a child unable to bear weight . Briefly describe role of plain Xray ,CT, USG, scintigraphy & MRI in arriving at a diagnosis. (2+2+2+2+1+1)
51. Classify the Bone tumors and enumerate the difference between Benign and Malignant bone tumors. Discuss the D/D and radiological features of generalised increased bony density.
52. Mechanism and radiological features of various types of cervical spine injury. Radiological techniques in such cases
53. Radiological and imaging techniques of examination of craniovertebral junction.
54. Enumerate various imaging techniques of hip joint. Describe imaging findings of TB hip joint and Perthes disease
55. What is hypertrophic pulmonary osteoarthropathy .Discuss causative factors for the same.
56. Vertebral haemangioma and nonsurgical treatment of the same

57. Mention etiology of osteomyelitis. Discuss various radiological findings at different stages of staph aureus osteomyelitis
58. Radiological and imaging methods in investigations of chronic low back ache in middle aged adult.

SHORT ANSWER QUESTIONS

1. Thoracic skeletal changes associated with cardio-vascular diseases. [JAN 97]
2. Radiological features in nutritional rickets.
3. Differential diagnosis of expanding lesions of mandible. [JAN 97, JAN 01]
4. Pyknodysostosis
5. Radiological features of spinal tuberculosis. [JUL 97, JUL 98]
6. Radiological features of congenital syphilis.
7. Neurophatic joints.
8. Radiological features of Osteosarcoma. [98]
9. DD of generalized decrease in Bone Density. [98]
10. Differential diagnosis of expanding lesions in metaphysis of long bones. [JUL 98]
11. Cleido-cranial dysostosis.
12. Pancoast tumour. [JUL 98, DEC 02,03]
13. Hypertrophic pulmonary osteoarthropathy. [JUL 98, JUL 99]
14. Enumerate the causes of Osteoporosis and use of CT in Bone Mineral Studies. [JUL 98]
15. Differential diagnosis of metaphyseal lucent lesions. [JUL 99]
16. Renal osteodystrophy.
17. Pathophysiology of renal rickets. [JAN 00]
18. Psoriatic arthritis.
19. Pathophysiology of Hyperparathyroidism. [02]
20. Radio-diagnosis of hyperparathyroidism. [JAN00, DEC 03, JUN 04/09]
21. Radiology of Rheumatoid disease. [JAN 01]
22. Cystic jaw lesions. [DEC 02, DEC 03]
23. Perthe's disease. [02]
24. Expansile lytic lesion at upper end of Tibia. [02]

25. Hand: an index of the disease. [DEC 02, DEC 03]
26. Neurofibromatosis. OR Osseous spectrum in neurofibromatosis. [DEC 02/07/09, JUN 04]
27. Role of Skeletal Radiography in estimation of age. [02]
28. Bone age estimation. [DEC 03]
29. Osteogenesis imperfecta.
30. Solitary dense vertebra. [02]
31. Imaging of Low Back pain. [02]
32. Role of MRI in bone tumors . [DEC 04]
33. Radiology of cardiovascular system soft tissues . [DEC 05, JUN 06]
34. Secondary hyperparathyroidism. [JUN 05]
35. Osseous lymphoma.
36. Plain film features of Acromegaly. [02]
37. Techniques for evaluation of Acromegaly . [JUN 06]
38. Basilar invagination. [JUN 05/06]
39. Radiology of a Limping Child. [DEC 06]
40. Imaging features in Mucopolysaccharidosis. [DEC 06, JUN 07]
41. Periosteal Reactions (DD). [DEC 02, 06]
42. Imaging in Tuberous Sclerosis and its associations.
43. Sickle cell disease -radiological appearances. [JUN]
44. Discuss Causes of diffuse skeletal sclerosis and role of imaging in it.
45. Sero-negative Spondyloarthropathy. [DEC 07]
46. Differential diagnosis of radiological appearance of absorption of terminal phalanges.
47. MR Imaging of Traumatic knee. [DEC 06]
48. Imaging in Meniscal tear of knee. [09]
49. Role of plain X rays and USG in Congenital Dislocation of Hip jt. [02]

50. MRI in congenital dislocation of hip joint. [09]
51. MRI in SLAP lesions of shoulder. [09]
52. Rib Notching. [JUN 03]
53. Describe ossification of bones of elbow. [09]
54. Imaging and associations of Fibrous dysplasia. [09]
55. Briefly discuss imaging of pre-sacral masses in children. [09]
56. Ozone therapy for backache. [09]
57. Imaging findings in Plasma Cell Tumors. [09]
58. Evaluation of Skeletal Dysplasias in utero. [09]
59. Imaging in Rotator cuff lesions. [09]
60. Soft tissue ossification and calcification.
61. Imaging of Rotator cuff Pathologies
62. Rickets and Scurvy
63. Discuss Rotator cuff anatomy and roles MR in impingement syndrome.
64. Describe various imaging features in ankylosing spondylitis.
65. Ossification of elbow joint & its clinical significance.
66. DISH (Diffuse Idiopathic Skeletal Hyperostosis
67. Scurvy
68. Scoliosis
69. Rheumatoid arthritis
70. Osteosarcoma
71. Perthe's disease.
72. Spinal tuberculosis.
73. Role of MRI in injuries of spine.
74. Biochemical and radiological features of renal rickets.
75. Radiological manifestations of metabolic disorders.

76. Generalized increased bone density
77. Radiological differential diagnosis of disordered epiphyseal growth
78. Short essay on AVN
79. Role of radiology in diagnosis and treatment of intervertebral disc lesions.
80. Radiological evaluation of scoliosis
81. Various causes of pathological fractures and radiological findings
82. Technique ,indication and diagnostic utility in knee arthrography
83. Differential diagnosis of decreased bone density
84. Anomalies of CV junction
85. Differential diagnosis of periosteal reaction
86. Various techniques of imaging of hip joint and describe imaging of congenital hip dislocation
87. Imaging of Pott's spine.
88. Pathology and imaging of malignant bone tumors
89. Diagnostic work up of limping child
90. Causes of osteoporosis and diagnostic modalities for the evaluation of same.
91. How will u investigate a case of craniofacial trauma
92. Fibrous Dysplasia.
93. Rickets.
94. Marfan syndrome.
95. Aneurysmal Bone cyst.
96. Discuss the role of MRI in musculoskeletal diseases.

SKULL AND ORBIT

LONG ANSWER QUESTIONS

1. Enumerate causes of orbital masses. Discuss imaging features of two common causes in an adult. [09]
2. Classify orbital lesions in relation to various orbital spaces. Discuss MR features in orbital pseudo tumors. [June 08]
3. Enumerate causes of unilateral proptosis. describe imaging findings of optic glioma and carotidocavernous fistula. [June 11]
4. Describe in brief anatomy of sella turcica. Enumerate various sellar and parasellar masses. Discuss imaging features of craniopharyngioma. [3+2+5 Dec 11]
5. Enumerate various indications of orbital ultrasound. Discuss the role of ultrasound & color Doppler in a case of white reflex in a child. [2+4+4 Dec 12]
6. Enumerate the cause of solitary lytic lesion in the skull. Describe the distinguishing radiological features of any three. [4+6 Jun 13]
7. Enumerate the causes of pulsatile exophthalmos. Discuss the imaging features of any two conditions. [2+4+4 June 14]
8. Enumerate causes of unilateral proptosis. Describe briefly imaging findings of optic glioma and carotidocavernous fistula. [2+4+4 Dec 14]
9. Describe the methods of localizing intraocular radio-opaque foreign bodies by radiological and imaging investigations.
10. Anatomy of lacrimal duct system and discuss the methodology and diagnostic value of dacryocystography.
11. Describe how you would carry out orbital phlebography.
12. Enumerate the causes of unilateral proptosis. Discuss the role of CT in unilateral proptosis.
13. Describe in detail the Radiological anatomy of orbit and classify the orbital tumors.

SHORT ANSWER QUESTIONS

1. Investigation in a case of exophthalmos. [JAN 00]
2. Imaging of posterior fossa. [JAN 01]
3. Orbit. [DEC 02]
4. Orbital tumours . [DEC 03, JUN 04]
5. USG in retinal retinal & choroidal detachment. [02]
6. Orbital pathologies. [JUN 04]
7. Imaging in unilateral exophthalmos. [DEC 07]
8. Ocular blood flow in normal and Glaucomatous eye on color Doppler imaging.
9. Radiological anatomy of orbit
10. Orbit [DEC 02]
11. USG findings in retinal detachment
12. Orbital USG
13. Orbital venography
14. Trans orbital view
15. Optic foramen(radiographic techniques)

NEURORADIOLOGY

LONG ANSWER QUESTIONS

14. Enumerate the various neurocutaneous syndrome & describe imaging in any 2 of these. [JUL 99]
2. Discuss CT and MR features of neurological complications of AIDS. [June 2008]
3. Functional imaging of Brain. [O9]
4. Enumerate CP angle tumors and discuss their differentiating features on CT and MRI. [June 2008]
5. Describe MR anatomy of pituitary gland. Discuss in detail MR techniques and features to diagnose pituitary adenomas. [June 2008]
6. Define Spinal Dysraphism. Describe briefly the MR sequences you will use for diagnosis of spinal dysraphism. [2010]
7. Define Infective Discitis. Describe CT, MR and Isotope imaging features of discitis. [2010]
8. Enumerate various causes of Supra-sellar masses. Describe imaging features in Craniopharyngioma. [2010]
9. Describe MR Imaging features in intra-cerebral Hematoma and techniques of Volume calculation in such a case. [2010]
10. Classify neural tube closure defects. Describe various Chiari malformation and their imaging features. [Dec 2010]
11. Classify brain tumors of children. Describe the imaging features of Primitive Neuroectodermal tumors. [Dec 2010]
12. Describe MR anatomy of Pituitary fossa with diagram. Describe the radiological diagnosis of Pituitary adenoma. [Dec 2010]
13. Describe the clinical features and MR imaging features of Multiple Sclerosis. [Dec 10]
14. Describe imaging features and intervention in vein of Galen malformation. [June 11]
15. Describe the grading, imaging features and differential diagnosis of Glioblastoma multiforme. [June 11]

16. Describe the CT and MRI features of Neurocysticercosis of brain. How would you differentiate from other granulomatous lesions. [June 11]
17. Define acute cerebral stroke. What are its types. Discuss the role of CT and MR imaging in patients with acute stroke, enumerating the techniques that you shall employ and the characteristic findings you would expect. [June 11]
18. Discuss the role of CT in evaluation of patients with acute head injury, staging the types of injury. possible complications and their long term sequelae. [June 11]
19. Enumerate the clinical uses of MR spectroscopy in disorders and diseases of brain . Briefly discuss its role in evaluation of brain tumors. [June 11]
20. Enumerate the cause of SAH. Discuss the role of CT in its evaluation. [2+8 Dec 11]
21. Enumerate causes of demyelinating diseases of spinal cord. Discuss their imaging features and DDs. [2+5+3 Dec 11]
22. Discuss clinical presentation. imaging findings on USG. CT & MRI in Vein of Galen malformation. Briefly discuss its interventional management. [2+2+2+2+2 Dec 11]
23. Enumerate causes of normal intracranial calcifications. Discuss imaging features of pathological intracranial calcifications secondary to infections & infestations. [3+7 Jun 12]
24. Enumerate causes of spinal canal stenosis. Mention normal CT measurement of spinal canal at various levels. Describe plain radiographic, CT & MRI features of spinal canal stenosis. [2+2+2+2+2 Jun 12]
25. Enumerate various causes of suprasellar lesions in adults and children Describe plain radiographic, CT and MR1 features of Craniopharyngioma. [4+6 Jun 12]
26. Enumerate the causes of cerebral venous thrombosis. Describe CT & MR findings of cerebral venous thrombosis. [2+4+4 Dec 12]
27. Enumerate the causes of enlarged jugular foramen. Describe the imaging findings and role of interventional radiology in management of Glomus Jugulare tumor. [2+5+3 Dec 12]
28. Enumerate the causes of ring enhancing lesions of brain parenchyma in MRI. Discuss the role of DWI and MR spectroscopy in differentiation of various lesions. [2+4+4 Dec 12]
29. Classify neural tube closure defects of brain. Briefly described types of Arnold Chiari malformation and discuss their imaging findings. [2+2+6 Jun 13]

30. Discuss the etiology and characteristic imaging findings in “ring enhancing lesions” of the brain. [3+7 Jun 13]
31. What are the common sellar and parasellar lesions? Describe the key radiological findings in craniopharyngioma on skull radiographs, CT & MRI. [4+2+2+2 Jun 13]
32. A 38 year old man, who has been throwing epileptic seizures, is found to have ring lesions on MRI of brain. Discuss the differential diagnosis. Describe the specific MRI features of any 4 clinical entities which may present with these clinikoradiological findings. [2+2+2+2+2 Dec 13]
33. State the distinguishing features of intramedullary, extramedullary, intradural and extradural spinal lesions on MRI. Discuss briefly the DD's of intramedullary spinal lesions. [6+4 Dec 13]
34. How would you differentiate between an extra-axial and intra-axial mass lesion on cranial MRI? Describe the radiological findings in the most common extra-axial lesion found in middle aged patients. [4+6 Dec 13]
35. Discuss the types and classification of gliomas. Describe the imaging features of various types of gliomas. Discuss the role of perfusion imaging in gliomas. [3+5+2 Dec 13]
36. What is the basic difference b/w NF type I and II? Discuss the imaging findings in NF-II. Briefly describe extra skeletal manifestations and associations of Neurofibromatosis. [4+3+2+1 June 14]
37. Describe with a diagram the cerebral venous system. Briefly discuss the causes and imaging features of cortical venous thrombosis. [3+2+5 June 14]
38. A 40-yr-old female has presented with loss of vision and instability in gait. Discuss the DD and MRI findings in the most probable cause. What is the role of diffusion tensor imaging in this patient. [2+6+2 June 14]
39. Discuss the grading, imaging features on MR] and differential diagnosis of GBM. [3+5+2 Dec 14]
40. Classify neural tube closure defects of brain. Briefly described types of Arnold Chiari malformation and discuss their imaging findings. [2+2+6 Dec 14] (repeat from June 13)
41. Embolization in management of acute hemorrhage. [5 Dec 14](repeat from 09)
42. Causes of demyelinating lesions of spinal cord and their imaging features. [10 June 15]

43. a) Enumerate various neurocutaneous syndromes. b) Etiopathogenesis imaging features and associations of Sturge-Weber syndrome. [June 15]
44. Cystic lesions of posterior fossa and their differential diagnosis. [June 15]
45. Enumerate differential diagnosis of Gliomas with imaging findings of Glioblastoma multiforme?
46. Enumerate the neurocutaneous syndromes and discuss the imaging features of Neurofibromatosis.
47. Discuss the role of CT scanning in CNS infections and infestations.
48. Imaging modalities in a patient brought in comatose condition.
49. Methods in investigation of tumors of posterior fossa. Describe radiological features and differential diagnosis of acoustic neuroma.
50. Discuss the anatomy and anomalies of the Cranio-Vertebral region. How will you assess it Radiologically. [02]
51. White matter disorders OR CT and MRI in white matter diseases OR MRI in CNS white matter disease of Brain. [DEC 02, 03, JUN 04]
52. Role of radiology in disorders of cerebellum with special reference to techniques.
53. Radiological appearances of CP angle space occupying lesions and their management in brief
54. Radiological anatomy of internal carotid artery. how it is useful in diagnosis of space occupying lesions.
55. Describe changes in pituitary fossa to arrive at a diagnosis of intrasellar tumors-extrasellar intracranial tumors.
56. Pathology of spinal cord tumors and radiological findings.
57. Imaging approach in case of stroke. Briefly mention the interventional procedures.
58. Diagnosis of SOLs in parietal region.
59. Describe the technique of myelography with brief discussion on radiological findings in spinal cord lesions.
60. Describe circulation of CSF and imaging of obstructive hydrocephalus.
61. Enumerate various neurocutaneous syndromes Discuss imaging for any of two.
62. Ring enhancing lesions in brain. Pathological features of intracranial tuberculomas.

63. TORCH infections and imaging findings of the same.
64. Enumerate physiological and pathological calcifications in skull. imaging of parietal lobe gliomas.
65. Role of radiology in case of paraplegia. Discuss imaging methods for diagnostic evaluation of malignant neoplasm of brain in children.
66. Role of imaging in epilepsy.
67. Role of imaging in spinal dysraphism.
68. Radiologic anatomy of sella turcica and investigations in case of pituitary adenoma.
69. Enumerate causes of intracranial calcifications. Discuss imaging in sturge weber syndrome.
70. Discuss leukodystrophies and their MRI findings.
71. USG in infant brain
72. Enumerate various CP angle lesions. Write imaging features of acoustic schwannoma.

SHORT ANSWER QUESTIONS

1. CT in Neurotuberculosis. [JAN 97]
2. Discuss the role of computed tomography in cerebrovascular accidents.
3. Arnold-Chiari malformations. [JUL 97, JUN 04]
4. Ring lesions on computed tomography of brain.
5. Neurosonography. [JUL 97, JUN 05]
6. Discuss the role of computed tomography in infective lesions of brain. [JUL 98]
7. Radiology and Imaging in Acoustic Neuroma. [98]
8. Radiological diagnosis of extra-dural spinal masses.
9. CT. versus MRI in brain tumours.
10. Imaging in congenital lesions of the spine and spinal cord. [JAN 00]
11. Radiology and Imaging of Meningiomas. [JAN 00, JUN 04]
12. Imaging in stroke.
13. Imaging in Acute stroke. [DEC 06]
14. CT and MRI in Intervertebral disc Prolapse. [02]
15. 4th Ventricular Ependymoma. [JUN 03]
16. Migrational anomaly. [JUN 04]
17. Role of DWI in brain . [DEC 04]
18. Sub Arachnoid space anatomy and SAH. [DEC 02. JUN 03]
19. Radiological investigation in SAH.
20. Intervention in SAH. [DEC 06]
21. Endovascular management of intra-cranial aneurysm. [DEC 05, JUN 06]
22. Imaging of cerebral ischaemic infarct. [JUN 05]
23. Posterior fossa neoplasms of childhood. [02]
24. Lateral ventricular masses. [OS]
25. Radiology of brain tumors. [05]

26. Role of Imaging in Leukodystrophies. [DEC 06]
27. Carotico-Cavernous Fistula. [DEC 06]
28. Imaging and Intervention in Intracranial AVM. [JUN 07, DEC 09]
29. Imaging and intervention in spinal anterior-venous malformation.
30. MRI in Alzheimer's disease.
31. Radiological features in diffuse axonal injury. [DEC 07]
32. Central pontine myelinolysis.
33. Vein of Galen malformation.
34. Glutaric Aciduria Type I.
35. DD of ring enhancing lesions in brain in an immunocompromised patient. [DEC 09]
36. Intramedullary neoplasms of spinal cord. [09]
37. MRI in intramedullary neoplasms of spinal cord. [09]
38. Clinical applications of Diffusion Tensor imaging. [09]
39. CT and MR findings in acute stroke. [09]
40. CT versus MRI in stroke. [97]
41. Embolization in management of acute hemorrhage. [09]
42. Imaging in dementia. [09]
43. Role of imaging and intervention in Dural Arteriovenous Fistula. [09]
44. Neuro-imaging in AIDS. [DEC 02/06]
45. Radiological features in Neurological Complications of AIDS. [09]
46. Role of CT and MRI in Brain Tumors.
47. Congenital infections of brain
48. Arnold - chiari Malformation
49. Meningioma.
50. Diffusion weighted imaging in brain.
51. Imaging findings in post-traumatic intracranial extra-cerebral blood collections.

- 52. Head injury
- 53. Neurofibromatosis
- 54. Discuss the various ring enhancing lesions in the brain.
- 55. Discuss posterior fossa tumors.
- 56. Schwannoma.
- 57. Dandy walker syndrome.
- 58. Basilar Invagination.
- 59. Spinal dysraphism
- 60. Ring enhancing lesions in brain
- 61. NF I vs NF II
- 62. Radiological investigations in CNS tuberculosis.
- 63. Describe the CT findings in malignant supratentorial brain tumors.
- 64. Cerebral abscess.
- 65. Imaging in brain haemorrhage.
- 66. Discuss the congenital brain anomalies

ENT

LONG ANSWER QUESTIONS

1. Describe the imaging features of juvenile nasopharyngeal angiofibroma. Discuss the role of radiological intervention in its management. [6+4 Dec 12]
2. Enumerate the infrahyoid neck spaces. Discuss the imaging features of pathologies of the carotid space. [4+6 June 14]
3. How would you evaluate a patient of hyperparathyroidism on imaging? Enumerate the findings on plain films, CT and Scintigraphy. [4+2+2+2 June 14]
4. Staging and imaging features of juvenile nasopharyngeal angiofibroma. [10 June 15]
5. Classify cysts of jaw. Describe briefly imaging features of each type of cysts. Draw suitable diagram to describe various types.(2+6+2)
6. Describe briefly the radiological anatomy of larynx and discuss various methods of imaging the larynx giving their relative accuracy in arriving at a diagnosis of the lesions of this region.
7. Discuss the HRCT of temporal bone

SHORT ANSWER QUESTIONS

1. Laryngeal carcinoma. [DEC 03, JUN 04]
2. Imaging of temporal bone/Petrous bone. [DEC 05, JUN 06]
3. Imaging of Naso pharyngeal angio fibroma.
4. FESS variants to be aware of.
5. Juvenile nasopharyngeal angiofibroma
6. Cholesteatoma
7. Frontoethmoidalmucocele
8. Radiography of paranasal sinuses
9. Nasopharyngeal angiofibroma
10. Radiography of nasopharynx
11. Parotid sialography
12. Bezold's abscess
13. Role of imaging in cystic lesions of mandible.
14. Sinonasal anatomy and physiology. Role of CT in evaluation of sinonasal lesions.
15. Various thyroid lesions and their appearances.

ADRENALS

LONG ANSWER QUESTIONS

1. Total evaluation techniques for adrenal disease. [JUN 06]
2. Classify adrenal tumors and role of CT and MRI in evaluating them. [DEC 07/09]
3. CT and MRI anatomy of Adrenal glands and normal variants. [09]
4. a) What are the various causes of b/l adrenal masses? b) Characteristic features in different imaging modalities in two such causes. [2+2+4 June 15]

SHORT ANSWER QUESTIONS

1. CT features in adrenal tumours. [JAN 97]
2. Pheochromocytoma. [JUN 04]

THYROID

1. Role of USG in thyroid diseases. [JAN 97]
2. Imaging in thyroid pathology. [JAN 00]

PHYSICS

LONG ANSWER QUESTIONS

1. Describe composition of X-ray film. Draw a labeled cross section of Cassette, film, screen combination.
2. Write about Dark room and chemicals used for processing X-ray film.
3. Write in brief about Radiation Hazards and Radiation Protection.
4. What is film-screen combination? Describe care while handling and storage of intensifying screens and films.
5. Describe dark room chemistry and silver recovery.
6. Describe cassettes and intensifying screens with care while handling them.
7. What are different artifacts in radiography? Discuss measures to reduce them.
8. Explain about electromagnetic spectrum Write common properties of electromagnetic radiation.
9. Describe principle of transformers / generators. Discuss types of transformer used in radiology equipments.
10. Describe various methods of Radiation Monitoring with special emphasis on dosimeters.
11. What is scattered radiation? What are the measures to reduce them.
12. Explain the different methods of radiation detection.
13. Describe principle of rectification and its use in radiography.
14. Describe the function of modern X-ray tube with neat diagram. Enumerate different types of X-ray tubes.
15. Factors affecting X-ray Image quality.
16. Write in brief about Transformers and Rectifiers.
17. Composition of X-Ray films. Discuss about different parameters which influence film contrast. [June 2008]
18. Define basic units of radiation exposure. List recommended dose limits for radiation worker & general public. [09]

19. Define the basic units of radiation exposure. Describe biological effects of radiation. [08]
20. Discuss about mammography X-ray unit. [June 2008]
21. Legal responsibilities and duties of radiologist in clinical practice. [09]
22. Doppler artifacts and pitfalls. [08]
23. Principles and clinical applications of dual energy CT. [08/2010]
24. Enumerate, various interactions of X-ray photons with matter. Describe any 2 in brief [2010]
25. Define scatter radiations. Comment briefly on the parameters which influence scatter radiation and methods to reduce scatter radiation. [2008/2010]
26. Define Roentgen. Mention various recommendations on maximum permissible dose for patients and staff members in Radiology department. [2010]
27. Describe the basis of BOLD imaging. Write its utility and limitations. [2010]
28. Write in brief the principle and types of Digital radiography. Outline its advantages and disadvantages. [2008/2010]
29. Define and classify radiographic Grids. Describe their various uses in radiography. [Dec 2010]
30. Define radiographic contrast. Describe various factors that affect radiographic contrast. [Dec 2010]
31. Describe AERB guidelines on X-ray room installation. [Dec 2010]
32. Describe the various techniques you will employ to reduce patient and operator radiation dose in CT angiography. [Dec 2010]
33. Enumerate basic properties of X rays. Describe factors affecting scatter radiation and techniques to minimise scatter radiation. [June 11]
34. Brief outline the evolution of present day CT scanners citing the key specific changes through different generations. [June 11]
35. While conducting a conventional diagnostic radiographic procedure under fluoroscopic guidance, what steps would you take to reduce radiation dose to pt. what measures would you take to safeguard yourself. [Jun 11]
36. Discuss briefly the principle of MR spectroscopy. Enumerate its clinical significance in any three clinical settings, outlining explicitly how it would be useful. [June 11]

37. Discuss various dose reduction techniques in MDCT. Mention the average radiation doses received for common examination using MDCT. [Jun 11]
38. Define Doppler effect. Briefly describe color doppler and power doppler modes of imaging. Enumerate advantages of each mode. [I+4+5 Dec 11]
39. Describe major components of a PACS system and their functions in brief. [10 Dec 11]
40. Define film contrast. Enumerate various factors affecting film contrast. Briefly discuss methods to improve it. [2+4+4 Dec 11]
41. Describe in brief components and their function of a rotating X-ray tube. Draw its neat diagram and label its components. [5+5 Dec 11]
42. Discuss various statutory requirements to be followed for installation of following radiological equipments: [4+3+3 Jun 12] A. 1000mA x-ray machine. B. CTscan. C. DSA Lab.
43. Describe various measures to reduce radiation exposure to patients as well as personnel performing fluoroscopically guided vascular interventional procedures in USA Lab. [10 Jun 12]
44. Write short notes on: [3+3+4 Jun 12] A. Heel effect
B. Genetic effect of radiation
C. Conventional lead apron & zero lead apron
45. Write short notes on the following: [4+3+3 Jun 12] a) Factors affecting scatter radiation and different techniques to minimize them. b) Radiographic contrast c) Properties of x-rays.
46. Write short notes on : [3+3+4 Dec 12] A. Photoelectric effect and its role in production of radiographic image. B. TLD C. Mammographic X-ray tube.
47. Describe the construction of an X-ray tube with the help of a labeled diagram. Discuss the mechanism of production of X-rays. Enumerate the properties of X-ray. [3+4+3 Dec 12]
48. a. Rare earth screens. b. Green sensitive film. c. Dual energy subtractions. [3+3+4 Jun 13]
49. Define Roentgen. Mention various recommendations of maximum permissible dose for patients and staff members of the Radiology department. [2+4+4 June 13]
50. Enumerate various interactions of X-ray photons with matter. Discuss any two in details with their significance in radiology department. [3+3+4 June 13]
51. Describe AERB guidelines for X-ray a CT installation. [5+5 June 13]

- 52.a) AERB guidelines for installation of X-ray equipment. b) Thermoluminescent dosimeter [5+5 Dec 13]
53. a) Quality of radiologic images b) Different types of x-ray tubes. [5+5 Dec 13]
54. Describe in detail various requirements of quality control programme in radiology department. [10 Dec 13]
55. Enumerate the different types of X-ray tubes. What is the difference between a conventional X-ray tube and a mammography tube? Briefly describe mammography tube with the help of a neat labeled diagram. [2+4+4 June 14]
56. What are the cardinal principles of radiation protection? What methods would you use to decrease exposure in fluoroscopy? [6+4 June 14]
- 57.a) Personal Dosimeters b) Tissue Harmonic imaging. [5+5 June 14]
- 58.a) MR contrast for liver imaging b) Contrast induced nephropathy and methods to prevent it. [5+5 June 14]
59. Advances in CT technology to decrease the radiation dose in children. What is CT dose index (CTDI). [8+2 June 14 and Dec 14]
60. Write in brief the principle and types of Digital radiography. Outline its advantages and disadvantages. [2+4+4 Dec 14] (repeat from 2008 and 2010)
- 61.a) AERB guidelines for installation of X-ray equipment. b) Thermoluminescent dosimeter [5+5 Dec 14] (repeat from Dec 13)
62. Enumerate various interactions of X-ray photons with matter. Discuss any two in details with their significance in radiology department. [3+3+4 Dec 14] (repeat from June 13)
63. Advances in technology to reduce radiation to a patient during radiography. [June 15]
64. Clinical applications and techniques of fat suppression in MRI.
65. Principles of perfusion CT and quantification of tumor perfusion parameters. [June 15]
66. Define principles of radiation protection. Describe various parameters which can reduce radiation dose in radiography and fluoroscopy.
67. Describe in brief the different components of rotating X-ray tube and its functions. Draw its neat labeled diagram. (25)
68. Enumerate different types of x ray tubes. Differentiate between conventional and mammography x ray tube. Shortly describe mammography tube with illustrated neat labelled diagram. (2+4+4)

69. Discuss the Biological effects of Radiations and the measures taken against its protection for Radiation workers and patients in Radio-diagnosis dept. [JAN 01, DEC 05, JUN 06]
70. Define principles of radiation protection. Describe various parameters which can reduce patient radiation dose in radiography and fluoroscopy. [09]
71. Design and setup of a radiology department OR Setting up a radiology department in a 200 bedded hospital [JUN 05/06]
72. Design and setup of a radiology department OR Setting up a radiology department in a 200 bedded hospital [JUN 05/06]
73. Define scatter radiation. Discuss briefly the parameters which influence scatter radiation and methods to reduce scatter radiation.
74. Define principles of radiation protection. Describe various parameters which can reduce patient radiation dose in radiography and Fluoroscopy. [June 2008]
75. Discuss the Biological effects of Radiations and the measures taken against its protection for Radiation workers and patients in Radio-diagnosis dept. [JAN 01, DEC 05, JUN 06]
76. Define principles of radiation protection. Describe various parameters which can reduce patient radiation dose in radiography and fluoroscopy. [09]
77. Composition of X-Ray films. Discuss about different parameters which influence film contrast. [June 2008]
78. Define basic units of radiation exposure. List recommended dose limits for radiation worker & general public. [09]
79. Define the basic units of radiation exposure. Describe biological effects of radiation. [08]
80. Define principles of radiation protection. Describe various parameters which can reduce patient radiation dose in radiography and Fluoroscopy. [June 2008]
81. Principles and clinical applications of dual energy CT. [08/2010] 66. Enumerate, various interactions of X-ray photons with matter. Describe any 2 in brief [2010]
82. Rare earth screens. [2010]
83. Enumerate various interactions of X-ray photons with matter. Discuss any two in details with their significance in radiology department. [3+3+4 Dec 14]

SHORT ANSWER QUESTIONS

1. Describe the various types of darkroom.
2. Describe the ideal darkroom.
3. Describe the various types of Intensifying screens
4. Mention the types of cassettes. Describe the uses of cassettes.
5. Constituents of Manual Developer and its role in developing films
6. Constituents of Manual Fixer and their role.
7. Enumerate the various artefacts and how they can be reduced.
8. What are the factors which affect the X-ray Tonage?? quality
9. Mention the various sizes and types of view boxes.
10. How the image is formed on the X-ray film after exposure. (Chemistry of Image formation)
11. Mention the various sizes and types of X-ray films. Describe the Mammography X-ray film.
12. What is scattered radiation and how it should be reduced?
13. Describe intensifying screens, its types and factors affecting the speed.
14. Write in brief about X-ray cassettes and general care while use & storage.
15. Electrification in dark-room.
16. Factors affecting quality of radiographic image
17. Films storage in dark-room.
18. Types of Hangers. How fixing of films in hangers is done.
19. Earthing of dark room table.
20. Master tank in dark- room.
21. Sizes of tanks used in the dark-room.
22. Procedure of loading and unloading X-ray films in cassettes.
23. Rare earth screens.
24. Role of calcium tungstate.

25. Fluorescence screen.
26. Difference between screen and non-screen films.
27. Safety of dark-room.
28. Cleaning of cassettes & screens
29. Fixation of new screen in cassette.
30. Safe light.
31. How the latent image converts into visible image.
32. Mention only constituents of Automatic processor.
33. Difference of developer in Manual and Automatic processing.
34. Effect of temperature during film developing.
35. Replenisher.
36. Acetic acid
37. Constituents of developer.
38. Constituents of fixer.
39. Fixing time.
40. Washing of X-ray film.
41. Keeping record of films.
42. Causes of yellow stain on X-ray films.
43. Waste hypo solution.
44. Developing tonic.
45. MAS
46. KV
47. MA
48. Timer
49. Exposure switch
50. Types of cassettes

- 51.Types of screens
- 52.Types of Hangers
- 53.Developing time
- 54.Fixing time
- 55.Washing of X-ray films
- 56.Acetic acid
- 57.Replenisher
- 58.Exposure time
- 59.Constituents of developer
- 60.Constituents of fixer
- 61.Silver extraction
- 62.Common metallic artefacts on X-ray
- 63.Yellow pigmentation on X-ray
- 64.Static artifacts on X-ray
- 65.Illumination in dark room
- 66.Safe distance between Table & safe light in dark room
- 67.Over – exposed film.
- 68.Under exposed film.
- 69.Blackening of X-ray film.
- 70.Safe light in dark room.
- 71.How to reduce artifacts on film.
- 72.Composition of X-ray films.
- 73.Mammography film.
- 74.Loading of X-ray film in cassette.
- 75.Fixing of X-ray film in Hangers.
- 76.Folding cassette

- 77.Safety of dark-room.
- 78.Types of dark-room.
- 79.Maze dark-room.
- 80.Flooring of dark-room.
- 81.Wall painting of dark-room.
- 82.Ventilation in dark-room.
- 83.Earthing of loading table.
- 84.Driers.
- 85.Silver recovery.
- 86.Developers in chemical processing.
- 87.Role and composition of Replenisher.
- 88.Artifacts in Radiography.
- 89.Maximum permissible dose.
- 90.Dark room concept
- 91.Composition and role of fixers in chemical processing of film
- 92.Measures to reduce various artifacts in radiography.
- 93.Factors affecting development of film while chemical processing.
- 94.Maximum Permissible dose for Pregnant Radiation worker.
- 95.Draw a labeled cross section of Cassette, film, screen combination.
- 96.TDS principles of radiation safety.
- 97.Composition of X-ray film
- 98Automatic Processing of X~ray films.
- 99.Dark room illumination/lighting.
- 100.Maximum permissible dose for radiation workers.
- 101.Shielding.
- 102.Film Hangers

- 103.kVp.
- 104.Bucky
- 105.Control Panel of X-ray equipment.
- 106.X-ray beam collimator
- 107.Production of X-rays
- 108.Draw well label diagram of structure of atom.
- 109.Properties of X-ray.
- 110.Voltmeter and Ammeter.
- 111.Rotating Anode.
- 112.Explain the phenomenon of thermionic emission. 5. X-ray target material.
- 113.Function of focusing cup.
- 114.Focal spot of X-ray tube.
- 115.Attenuation of X-rays.
- 116.Tube current.
- 117.Photo-electric effect.
- 118.Properties of Roentgen rays.
- 119.Lead aprons.
- 120.Technical parameters of an x-ray equipment for fluoroscopic procedures.
- 121.Basic construction of an x-ray tube and recent advances.
- 122.Principle of doppler ultrasound and its application in neck ultrasound.
- 123.Factors affecting quality of a radiograph. [JUL 97, JAN 01, DEC 04]
- 124.Name the various interactions of X-ray photons with matter. Describe any two.
- 125.Focal spot in a diagnostic x-ray tube. [JUL 99, DEC 02]
- 126.Ultrasound image artifacts.
- 127.image Intensifier. [JAN 00, DEC 02, 03]
- 128.Measures to decrease radiation dose to patient. [02]

- 129. Ionizing radiation in bone. intensifying screens. [DEC 02/04; JUN 06]
- 130. Portable radiography [DEC 03]
- 131. Principles of colour doppler sonography. [02]
- 132. MDCT technology. [DEC 02/03/04]
- 133. X-Ray film and Types of films used in Radiology. [DEC 02, 03, 04]
- 134. Construction of a conventional X-ray film & functions of each layer. [02]
- 135. Properties of Xrays. [02]
- 136. Medical X ray films processing chemicals. [02]
- 137. High generator transformer. [DEC 04]
- 138. Radiation monitoring devices.
- 139. Radiation scatter. [DEC 05, JUN 04]
- 140. Rare earth screens.
- 141. New MR pulse sequences
- 142. X-ray beam restrictors.
- 143. Motion and pulsation artifacts in MRI
- 144. Adverse effects of radiation.
- 145. Cine fluoroscopy
- 146. Grids [DEC 05/07]
- 147. Cardiac CT. [JUN 05]
- 148. Radiation dose reductions in CT.
- 149. Darkroom illumination.
- 150. Modern rotatory x-ray tube .
- 151. PACS picture archival and communication system.
- 152. TLD ~ Thermo Luminescence Dosimeter.
- 153. Filters and filtrations.
- 154. MR coils.

- 155. Film artifacts. [02/05]
- 156. Electrical circuits of x-ray machine.
- 157. Safety hazards in MRI.
- 158. Steps to improve the quality of a chest X-ray.
- 159. Radiological management of Bomb-Blast injury.
- 160. Maximum permissible radiation dose.
- 161. Photoelectric effect and its application in diagnostic radiology. [09]
- 162. Film contrast. [09]
- 163. Dosimeters used for radiation monitoring. [09]
- 164. Radiation dose in various examinations using MDCT. [09]
- 165. Computed radiography cassette. [09]
- 166. PACS in radiology. [09]
- 167. Genetic Screening. [09]
- 168. Planning considerations for installation of 500 mA X-ray machine. [09]
- 169. CR Vs DR
- 170. CR artifacts.
- 171. Conventional lead apron and zero lead apron.
- 172. zero lead aprons
- 173. Green sensitive film
- 174. Define basic units of radiation exposure and comment on biological effect of radiation.
- 175. Intensifying screens in radiodiagnosis
- 176. Automatic film processing
- 177. Future of conventional radiology
- 178. Soft tissue radiography
- 179. PACS
- 180. Tissue Harmonic Imaging.

- 181.Doppler artefact and pitfalls.
- 182.TLD
- 183.Susceptibility weighted imaging
- 184.Harmonic Imaging
- 185.FUSION Imaging
- 186.Parallel Imaging – technical parameters and applications.
- 187.DECT & Uses.
- 188.Heel effect
- 189.Principle of RFA (Radio frequency ablation) and uses.
- 190.spatial compound imaging.
- 191.Pressure injectors.
- 192.Dual energy subtraction
- 193.MR PET
- 194.carbon dioxide angiography
- 195.Mobile CT scanner
- 196.C.R. cassette.
- 197.Radio frequency coil.
- 198.High frequency generator
- 199.Ultrasound contrast.
- 200.T.L.D. Badge.
- 201.Artifacts.
- 202.M.R.Contrast media.
- 203.Scattered radiatation.
- 204.Peizo-electric affect
- 205.Grids.
- 206.Radiation Hazards.

207.Principles of colors Doppler.

208.Radiation protection in Fluoroscopy and CT.

209.PET-CT

210.Describe the generation of CT Scan.

211.Factors affecting the quality of radiographic image.

212.Draw a well labelled diagram of X-ray tube and mention in details how X-rays are produced.

213.Describe the physics of image formation in MRI.

214.Measures to decrease radiation dose to patient. [02]

215.AERB guidelines for Radiation safety. [DEC 06]

216.Ionizing radiation in bone.

217.intensifying screens. [DEC 02/04; JUN 06]

BIOSTATISTICS

1. Write short notes on: (4 + 2 + 2 + 2) (June 12).
 - a. What is p Value? What is its significance and clinical applications in research?
 - b. Sensitivity.
 - c. Specificity.
 - d. Positive and negative predictive values.

CONTRAST MEDIA

LONG ANSWER QUESTIONS

1. Enumerate various ultrasonic contrast media. Describe their principle and clinical application in evaluation of Hepatic mass lesion. [Dec 2010]
2. Write short notes- a. Management of severe contrast reaction. b. Nephrogenic systemic fibrosis. [5+5 Dec 12]
3. Define contrast nephropathy. Who are the patients at risk? What is the mechanism at work? Outline its time course. What are the key recommendations to check its occurrence? [2+2+2+2+2 Jun 13]
4. Discuss the role of contrast enhanced MRI and Organ specific MR contrast media. [3+7 Jun 13]
5. Management of acute idiosyncratic contrast reactions. [June 15]
6. a) What is the principle of MR contrast enhancement. b) Describe any two organ specific contrast agents and their clinical applications. [June 15]

SHORT ANSWER QUESTIONS

1. MR contrast media. [JAN 97, DEC 04, JUN 05]
2. Discuss about various MR contrast media and their mechanism of action. [08]
3. Low osmolar contrast media. [JUL 97]
4. Adverse drug reactions caused by I.V. Contrast media. [JAN 01]
5. Classify idiosyncratic reactions resulting from contrast media administration. Describe the management of life threatening adverse reactions. [08]
6. Non-ionic contrast media. [DEC 05]
7. Management of adverse contrast reactions. [JUN 05]
8. Recent contrast media used in USG. [JAN 00]
9. Role of Ultrasound Contrast Agents in gastro-intestinal diseases. [JUL 98, DEC 04]
10. Ultrasonography contrast media. (OR) Echo enhancing agents. [JUN 06, 09]
11. Contrast induced nephropathy. [09]
12. MR contrast media in Hepato biliary system/MR contrast agents for Hepatic Imaging. [06/09]
13. Emergency drugs with doses that should be available in radiology department. [09]
14. Adverse reactions of MR contrast media. [2010]
15. Classify and discuss the various contrast media in radiological practice.
16. Drugs used in treatment of IV contrast reaction and their role in detail.
17. Merits and demerits and compositions of Water soluble contrast media.
18. Adverse reaction to water soluble contrast media and their management.
19. Contrast reaction – classifications and management

NUCLEAR MEDICINE

LONG ANSWER QUESTIONS

1. Enumerate various radio-isotopes used in Hepato-Biliary system. Describe the imaging features and techniques in Biliary atresia. [Dec 2010]
2. Describe the role of scintigraphy in cardiac imaging with emphasis on myocardial perfusion and viability. [June 2011]
3. Enumerate the indications of scintigraphic evaluation in GI bleed. Briefly discuss technique, radioisotopes used & interpretation of results. [2+4+2 Dec 11]
4. Enumerate indications and radio-isotopes used for radionuclide scanning of lungs. Briefly describe 3 techniques of isotope imaging of lung with their clinical implications. [(2+2)+(2+2+2) Jun 12]
5. List the indications of hepatobiliary scintigraphy in children and adults. Describe briefly the principle, technique & findings on scintigraphy in a case of neonatal jaundice. [2+2+2+4 Dec 12]
6. Briefly describe the pathogenesis of choledochal cyst. Enumerate various types of choledochal cyst. Discuss the role of imaging in Caroli's disease. [2+3+5 Dec 12]
7. a. Radio isotope scanning of the skeletal system. b. Clinical applications of 3D and 4D ultrasound. [5+5 Jun 13]
8. Discuss the role of scintigraphy in cardiac imaging with special emphasis on myocardial perfusion and viability. [Jun 13]
9. What is the principle of PET scanning? Briefly discuss the role of FDG-PET scanning and importance and clinical utility of two non-FDG molecules of PET scanning. [2+4+4 Dec 15]
10. a) Renal isotope scanning b) Tomosynthesis in mammography. [5+5 June 14]
11. Isotopes in Myocardial ischaemia OR Scintigraphy in ischaemic Heart disease OR Role of nuclear medicine in ischaemic heart disease. [JUL 98, DEC 02/ 05]
12. How isotopes can be used for diagnosis. Describe in brief the equipments used and types of isotopes.

SHORT ANSWER QUESTIONS

1. Radio nuclide imaging of the C.N.S. [JAN 97]
2. Radio isotope scanning in thyroid disease.[JUL 97,02]
3. Isotope imaging of the Parathyroids. [02]
4. Radio nuclide imaging of urinary tract.
5. ^{99m}Tc labeled N substituted Imino-diacetic acid (HIDA) Scan.
6. Role of scintigraphy in liver diseases. [JUL 99]
7. Radio-isotope scanning in cardiac lesions. [JAN 01]
8. Nuclear medicine in liver imaging [DEC 02]
9. Clinical application of radionuclide Renography. [02]
10. Renogram. [DEC 03]
11. Bone scan. [DEC 05]
12. G1 Scintigraphy. [JUN 05]
13. Outline of radio-isotopes available. [JUN 06]
14. Radioisotopes in Cardiac imaging. [09]
15. Radionuclide bone Scintigraphy in infective disorders. [09]
16. Application of DMSA Scintigraphy. [09]
17. Scintigraphy evaluation of Gastro-intestinal bleeding. [09]
18. Fusion imaging. [09]
19. PET [DEC 04, JUN 05]
20. Principles and role of PET in clinical radiology. [June 2008]
21. Describe Radiopharmaceuticals used in PET CT with their clinical applications. [09]
22. Radionuclide scanning in a bony lesion. [09]

RADIOGRAPHIC POSITIONING

1. Describe the positioning for various skull x-ray views.
2. Conventional skull radiography.
3. Radiography of the Jugular Foramen. [DEC 06]
4. Base of Skull.
5. Radiography of Base of skull
6. Scaphoid views

TECHNIQUES, NEWER MODALITIES AND RECENT ADVANCES

LONG ANSWER QUESTIONS

1. Discuss indications, technique and complication of bronchial artery embolisation. [June 2008, 10]
2. Describe the principle and types of bone densitometry. Outline the advantages, disadvantages and limitations of each type. [2010]
3. Enumerate the various gradient echo sequences. Describe in brief the principle and their clinical applications. [2010]
4. Describe techniques of MRCP. What are the advantages and disadvantages of MRCP vs ERCP. [2010]
5. Techniques and applications of CT colonography. [2010]
6. Write in brief the principles of Radio frequency ablation. Enlist indications, contraindications, management and complications of Hepatocellular carcinoma
7. What are the advantages of 3T MRI over 1.5T MRI ? Comment on its limitations.
8. Enumerate the indications of foetal MRI Comment on its limitations. [2010]
9. Write in brief about problem of storage requirements in PACS. Describe its solutions. [2010]
10. Describe briefly indications, technique, complications and post procedure follow up of Transjugular Intrahepatic Portosystemic Shunt. [Dec 10]
11. Describe the technique of CT enteroclysis. Enumerate its indications, advantages and limitations. [Dec 10]
12. Describe the technique of CT coronary angiography. Draw a labeled diagram of normal coronary arteries. Mention the major anatomical variants. [Dec 10]
13. What is molecular imaging and describe its role in musculoskeletal system. [Dec 10]
14. Describe the technique of MR Arthrography. Enumerate its indications, advantages and limitation. [Dec 10]
15. What do you understand by perfusion imaging?. Describe briefly CT and MR perfusion imaging techniques. [Dec 10]

16. Enumerate various endoscopic ultrasound imaging techniques. Describe common endoscopic ultrasound imaging features in esophageal disease. [Dec 10]
17. Write in brief about the technique, indications, contra-indications and complications of Radiofrequency ablation in hepatic and biliary lesions. [Dec 10]
18. What do you understand by tissue harmonic imaging. How is it useful during sonographic evaluation of small parts of body? [3+7 June 11]
19. Define High Intensity Focused Ultrasound. Describe its clinical applications. [2+8 June 11]
20. Describe principle of Dual energy CT, different techniques of dual energy acquisition and various applications. [3+2+5 Dec 11]
21. Discuss the principle, components, advantages and limitations of Digital Radiography. [1+4+3+2 Dec 11]
22. Describe principle of ultrasound elastography and its clinical applications. Briefly discuss its usefulness in evaluation of BIRAD 3 lesions. [(4+3)+3 Jun 12]
23. Describe the physical principles of PET-CT. Discuss the role of computed tomography and PET-CT in diagnosis post-treatment evaluation of lymphoma. [2+4+4 Dec 12]
24. Describe the physical principles of CR and DR. Briefly discuss their advantages and disadvantages. [3+3+2+2 Dec 12]
25. Briefly describe the physical principle of radio frequency ablation. Enumerate its applications. Discuss the role of radio frequency ablation in management of osteoid osteoma. [2+2+6 Dec 12]
26. Write short notes on: [5+5 Dec 12] A. Focussed abdominal sonography for trauma. B. Pressure injector
27. Define strain and shear wave elastography. Discuss its role in breast, prostatic and musculoskeletal lesion. Compare its sensitivity and specificity with MR elastography. [2+6+2 Jun 13]
28. a) CT vs MR Urography. b) CT vs MR Enteroclysis [5+5 Jun 13]
29. Discuss the recent advances in MDCT. What are the various dose reduction techniques in MDCT?. Mention average radiation dose received for common examinations using MDCT. [4+4+2 Jun 13]
30. a. Principle of Digital radiography. b. Clinical applications of molecular imaging. [5+5 Jun 13]

31. a. MR artefacts b. CT artefacts. [5+5 Jun 13]
32. Discuss the following: a. BOLD imaging b. Genetic Screening c. PACS in Radiology. [3+3+4 Jun 13]
33. Write short notes on: 1) MR tractography 2) Dual energy scanning in musculo-skeletal system. (5+5 Dec 13)
34. Write short notes on: 1) CO2 angiography 2) Transcranial Sonography in stroke (5+5 Dec 13)
35. Write short notes on: a) Flat panel detector b) HIFU-Clinical indications & utility. [5+5 Dec 13]
36. Write short notes on: a) Mobile CT scanner b) Renal denervation for renovascular hypertension. [5+5 Dec 13]
37. a) MR-PET b) Dose reduction techniques in MDCT. [5+5 Dec 13]
38. a) Imaging of hemobilia and interventions b) Principles & applications of RF ablation. [5+5 June 14]
39. a) CT perfusion in acute stroke b) Principles of functional MRI. [5+5 June 14]
40. Techniques of ultrasound elastography and its applications. [5+5 June 14]
41. Advantages and disadvantages of computed radiography and direct digital radiography. [10 June 14]
42. What are the advantages of 3T MR1 over 1.5T MRI ? Comment on its limitations. [6+4 Dec 14] (exact repeat from 2010)
43. a. MR artefacts b. CT artefacts. [5+5 Dec 14] (exact repeat from Jun 13)
44. Enumerate the various gradient echo sequences. Describe in brief the principles and their clinical applications. [3+3+4 Dec 14] (repeat from 2010)
45. Define High Intensity Focused Ultrasound . Describe its clinical applications. [2+8 Dec 14] (repeat from June I 1)
46. What do you understand by tissue harmonic imaging . How is it useful during sonographic evaluation of small parts of body. [3+7 Dec 14] (repeal/from June 11)
47. Define Scatter radiation. Discuss briefly parameters which Influence scatter radiation and methods to reduce scatter radiations.
48. Discuss Principle of CT perfusion and clinical applications.

49. Describe in brief the advances in CT technology to decrease radiation dose in children. What is CT dose index? (8+2)
50. What are the advantages of 3T MRI over 1.5T MRI? Comment on its limitations. (6+4)
51. What is the principle of PET scanning? Briefly discuss the role of FDG -PET scanning. Discuss importance & clinical utility of two non FDG molecules of PET scanning. (2+4+4)
52. Describe principals of dual energy CT, different techniques of dual energy acquisitions & various applications. (3+2+5)
53. Describe in detail principle of chemical shift imaging. Write in detail its clinical application. (5+5)
54. Define high intensity focused USG. Describe its clinical applications. (2+8)
55. Define tissue harmonic imaging. How it is useful during sonographic evaluation of small parts of body? (3+7)
56. Describe principles & techniques of USG elastography . Describe in detail clinical applications of compression elastography. (5+5)
57. Discuss the principles of multi detector CT and its application in Radio diagnosis.
58. Discuss the principle of Diffusion weighted Imaging (DWI) and its utility.

SHORT ANSWER QUESTIONS

1. Spiral CT and its major applications. [JAN 97]
2. Ultrasound transducers and their applications.
3. Developments in ultrasound transducer technology. [09]
4. Xeroradiography.
5. High resolution CT and its major applications. [97, 05]
6. MR Spectroscopy. [JUL 97, DEC 02/05/06]
7. Automatic processing and Automatic Film Processor (AFP). [JUL 97, JAN 00. DEC 02/05]
8. 3D CT angiography. [JUL 98]
9. Digital radiography. [DEC 05/06, JUN 05]
10. Flat panel digital radiography.
11. What is digital radiography? Discuss its advantages and disadvantages. [09]
12. Computed radiography and digital radiography. [DEC 05, JUN 06]
13. ERCP. [02]
14. MRCP. [JUL 99, DEC 03]
15. MRCP vs ERCP
16. Small bowel enema.
17. Tissue Harmonic imaging. [JAN 0], DEC 04]
18. MRI Urography. [DEC 02]
19. MR Venography.
20. MR angiography. [JUL 97, DEC 02/04, JUN 06]
21. MRA in lower limb arteries
22. Discuss the role of CT. angiography, its indications, advantages and limitations. [JAN 01]
23. CT angiography and its application in abdomen. [DEC 05, JUN 06]
24. Principles of CT angiography.

25. CT angiography -present status [JUN 06]
26. Methods of contrast administration for CT angiography. [09]
27. CT angiography vs MR angiography.
28. Virtual endoscopy.
29. Virtual Colonoscopy. [DEC 05/07, JUN 05]
30. Virtual bronchoscopy . [DEC 05, JUN 06, DEC 09]
31. CT Coronary angiography.
32. Intra-operative USG. [DEC 04]
33. TRUS.
34. Trans-rectal and Trans-Perineal USG in elderly patients. [06]
35. Sonohysterography.
36. Discuss principle, various techniques of elastography and their clinical applications.
[June 08/2010]
37. Peripheral venous doppler.
38. DSA.
39. Intravascular Ultrasound. [06]
40. Full field Digital Mammography. [06]
41. Radiofrequency Ablation [clinical application and principle]. [03, 06]
42. Percutaneous vertebroplasty. [06]
43. Outline of techniques in functional MRI. [JUN 06]
44. Diffusion weighted MRI. [08]
45. Dry view laser camera. [06]
46. Clinical applications of 3T MRI. [06]
47. ELORA
48. Discuss the procedure for Barium Enema.
49. Technique of Double Constrast Barium Enema. [02] Enumerate the DD and imaging features of Hepatic fiexur mass. [2010]

- 50. MR enteroclysis techniques, indications and applications. [02, 2010]
- 51. MRI in Cardiac Imaging OR MR sequences in Cardiac imaging. [JUN/DEC 07]
- 52. Vertebroplasty in non-infective vertebral collapse.
- 53. Tomosynthesis and its clinical applications. [09]
- 54. Volume ultrasound. [09]
- 55. PACS. [DEC 06]
- 56. a) Fusion imaging. b) ELORA [5+5 June 15]
- 57. Advances in ultrasound transducer technology. [June 15]
- 58. Advances in MR gradient technology and its advantages. [June 15]
- 59. a) Zero lead aprons. b) Spatial compound imaging [5+5 June 15]
- 60. Radiofrequency Ablation
- 61. Discuss principle of MR Spectroscopy, uses and artifacts

GENERAL

LONG ANSWER QUESTIONS

1. Describe scope of imaging modalities in DM.
2. Role of radiology in HIV positive patient.
3. Role of radiology in tumors of teeth
4. Imaging in NHL
5. Role of radiologists in emergencies in neonate in first 24 hrs
6. Discuss the recent advances in the imaging of spine and spinal cord

SHORT ANSWER QUESTIONS

1. Madura foot
2. Battered Baby syndrome
3. Imaging findings in fluorosis.

MCQS

MCQ - Questions

1. Septic arthritis not common in

- a) Infants
- b) Children
- c) Adults
- d) Old age

Ans : (b)

2. BMM or MM sign obliterating kohler's tear drop is found in

- a) Fibros dysplasia
- b) Pagets disease.
- c) Non ossifying fibroma
- d) Hemangioma

Ans : (b)

3. Sunburst or spoke wheel appearance with lytic defect of skull found in

- a) Eosinophilic granuloma
- b) Hemangioma
- c) Metastasis from breast CA
- d) Multiple myeloma

Ans : (b)

4. Corduroy cloth appearance of vertebra noted in

- a) Pagets disease
- b) Hemangioma
- c) Metastasis
- d) Hodgkins lymphoma

Ans : (b)

5. The common joint usually spared in Hereditary multiple exostosis (HME)

- a) Elbow

- b) Ankle
- c) Shoulder
- d) Wrist

Ans : (a)

6. Which Benign bone tumour/benign looking bone tumor does not involve the subarticular region

- a) Paget's disease
- b) Fibrous dysplasia
- c) GCT
- d) Chondroblastoma

Ans : (b)

7. A 18 year patient presenting with pain around knee joint (No H/O - trauma) since 4 months. On X - ray there is a well lytic lesion in epiphysis of distal femur noted with metaphyseal extension. Shows flocculent calcification & on microscopy it shows chicken wire type of calcification. So the most common pathology is

- a) GCT
- b) Brodie's abscess
- c) Chondroblastoma
- d) Chondrosarcoma
- e) Fibrous xanthoma of bone

Ans : (c)

8. Most common benign tumour of sacrum

- a) Giant cell tumour
- b) Chondroblastoma
- c) Enchondroma
- d) Chondromyxoid fibroma

Ans : (a)

9. Most common neoplasm of patella

- a) Enchondroma
- b) Chondroblastoma
- c) Giant Cell Tumour

d) Paraosteal osteosarcoma

Ans : (c)

10. Criteria for cartilage cap thickness for malignant transformation of osteochondroma in adult

a) > 1cm

b) > 2cm

c) >3 cm

d) >4 cm

Ans : (b) in children (c)

11. A 36 yr female with non Hodgkin's disease on spine x-ray shows on ivory vertebra of L4 level with anterior scalloping of vertebral body without any vertebral expansion & has increased Alkaline phosphatase level. The most common probable pathology for this ivory vertebra is-

a) Metastasis (Blastic)

b) Pagets disease

c) Hodgkins disease

d) Osteoblastoma

Ans : (c)

12. An incidentally detected eccentric, solitary, lytic lesion with scalloped margin measuring 4 cm in metaphyseal region of distal tibia in a 18 yr old patient. The most probable diagnosis is-

a) FCD

b) NOF

c) Fibrosarcoma

d) Eosinophilic granuloma

Ans : (b)

13. A 35 yr female present with 10 months h/o migraine headache, sensorineural hearing loss & vision abnormality & subsequently develop confusion & psychiatric disturbance without any h/o fever. On MRI she had punched out lesion in middle layer of corpus callosum which enhances on post contrast study. There is relative sparing of undersurface of corpus callosum. So the most probable diagnosis is -

a) Multiple sclerosis

b) Acute disseminated encephalomyelitis

c) Susac syndrome

- d) Fahr disease
- e) Lymes disease

Ans : (c)

14. Most common malignant primary tumour of bone having bone to bone metastasis -

- a) Osteosarcoma
- b) Ewings sarcoma
- c) Fibro sarcoma
- d) Chordoma

Ans : (b)

15. The only primary malignant bone tumour in which sequestration is found -

- a) Ewing sarcoma
- b) Fibro sarcoma
- c) Osteo sarcoma
- d) Parosteal osteo sarcoma

Ans : (b)

16. Snow man shaped/figure eight sellar/suprasellar mass most likely found in -

- a) Craniopharyngeoma
- b) Rathke cleft cyst.
- c) Pituitary macro adenoma
- d) Suprasellar meningioma

Ans : (c)

17. The doubling time is slowest for which malignant lung tumour

(Doubling time - time requested to double its volume)

- a) Small cell cancer of lung
- b) Adenocarcinoma lung
- c) Squamous cell ca of lung
- d) Broncho alveolar carcinoma

Ans : (d)

18. Which of the following statement is most correct about pulmonary hila?

- a) Left pulmonary hilum is of way of lower level than right.
- b) Right hilum is of same level or at higher level than left.
- c) Left hilum is at same level or at higher level than right.
- d) Both hila are of same level

Ans : (c)

19. Atoll sign or reverse halo sign in HRCT thorax found in -

- a) Wegener granulomatosis
- b) Cryptogenic organizing pneumonia (COP)
- c) Allergic bronchopulmonary aspergillosis
- d) Usual interstitial pneumonia

Ans : (b)

20. Which is incorrect about radiographic findings of sweyer - james syndrome

- a) Increased lucency involving all or part of one lung
- b) The affected area of lucency shows absent peripheral vasculature
- c) Post expiratory imaging shows air trapping in the affect long / lobe.
- d) There may be mediastinal shift

Ans : (b)

21. Most common location of bronchogenic cyst is -

- a) Parotracheal region
- b) Adjacent to esophagus
- c) Middle mediastinum near carina
- d) Retro cardiac location

Ans : (c)

22. Molar tooth sign on axial MRI Brain images is seen in -

- a) Wilson's disease
- b) Joubert's syndrome
- c) Dandy walker malformation
- d) Arnold chiari malformation - Type II

Ans : (b)

23. Write cerebellum sign on CT Brain is seen in -

- a) Diffuse axonal injury
- b) Acute cerebellar infarct
- c) Brain death
- d) Post traumatic cerebral ischaemia

Ans : (c)

24. Prominent & dilated Perivascular spaces on MRI Brain in an HIV patient is seen in -

- a) Toxoplasmosis
- b) Tuberculoma
- c) CMV
- d) Crypto coccosis

Ans : (d)

25. Lying down adrenal sign on antenatal USG is seen in -

- a) Medullary sponge kidney
- b) Autosomal recessive polycystic kidney disease
- c) Renal agenesis
- d) Horse shoe kidney

Ans : (c)

26. Hockey stick sign on MRI Brain is seen in -

- a) Alzheimer's disease
- b) Bing's winger disease
- c) Creutzfeld Jacob disease
- d) Rasmussen's encephalitis

Ans : (c)

27. Keyhole sign on ANC USG is seen in -

- a) Posterior urethral valves
- b) Multicystic dysplastic kidney
- c) Hutch diverticulum
- d) Horse shoe kidney

Ans : (a)

28. Pattern of calcification in myositis ossificans-

- a) More dense peripherally & less dense centrally
- b) More dense centrally & less dense peripherals
- c) Both of the above
- d) None of the above

Ans : (a)

29. OS trigonum is accessory bone of -

- a) Navicular
- b) Talus
- c) Calcaneum
- d) Bone of 2nd metatarsal

Ans : (c)

30. All of the following are components of posterolateral corner of knee except -

- a) Lateral collateral ligament
- b) Biceps femoris tendon
- c) Fabello fibular ligament
- d) Anterior Cruciate ligament

Ans : (d)

31. Disease exclusively affecting women of child bearing age -

- a) Pneumoconiosis
- b) Eosinophilic lung disease
- c) Lymphangioleiomyomatosis
- d) Langerhan's cell histiocytosis

Ans : (c)

32. Following are the causes of unilateral hyperlucency of chest except -

- a) Compensatory Emphysena

- b) Mastectomy
- c) Pneumothorax
- d) Gross placental effusion

Ans : (d)

33. Radiological appearance of Pulmonary Venous hypertension are except

- a) Prominence of upper zone vessels
- b) Attenuation of the lower zone vessels
- c) Kerley - B lines
- d) Widening of mediastinum

Ans : (d)

34. The normal fasting diameter of portal vein is less than -

- a) 13mm
- b) 14mm
- c) 15mm
- d) 16mm

Ans : (a)

35. CT features of parotitis are except -

- a) Swollen gland
- b) Local lymphadenopathy
- c) Sialolithiasis
- d) Mandibular involvement

Ans : (d)

36. Laxity of the following ligaments leads to gastric volvulus except -

- a) Gastro oesophageal ligament
- b) Gastro hepatic ligament
- c) Gastro colic ligament
- d) Gastro lineal ligament

Ans : (a)

37. In abdominal x-ray double bubble sign seen in -

- a) Liver abscess
- b) Duodenal atresia
- c) Pyloric stenosis
- d) Small bowel obstruction

38. In scurvy all the following radiological signs are seen except -

- a) Pelkan's spur
- b) Soap bubble appearance
- c) Zone of demarcation near epiphysis
- d) Frenkel's line

Ans : (b)

39. Empty Delta sign on CT head is seen in -

- a) Infarct
- b) Superior sagittal sinus thrombosis
- c) SAH
- d) SDH

Ans : (b)

40. Principle used in radiotherapy is

- a) Cytoplasmic coagulations
- b) Ionising the molecules
- c) DNA Damage
- d) Low dose causes tissue neurosis

Ans : (c)

41. Which of the following is not a feature of fibrous dysplasia -

- a) Bone expansions
- b) Pseudo - fracture
- c) Subarticular extension
- d) Ground glass smoky appearance

Ans : (c)

42. Fish vertebra is seen in -

- a) Osteoporosis
- b) Osteopertrosis
- c) Pagets
- d) Mucopoly saccharoidsis

Ans : (a)

43. Terry Thomas sign is -

- a) Separation of scaphoid & lunate
- b) Separation of pisiform & triquetrel
- c) Separation of traperzum & trapezoid
- d) Separation of capital & hamate

Ans : (a)

44. Most common visceral artery aneurysm is seen in -

- a) Aorta
- b) Iliac vessels
- c) Splenic artery
- d) Hepatic artery

Ans : (c)

45. Most common abnormality seen in ovary -

- a) Ovarian cyst
- b) Dermoid cyst
- c) Carcinoma ovary
- d) Hemorrhagic cyst

Ans : (a)

46. Normal Bohler's angle measures -

- a) 10 - 25°
- b) 28 - 40°
- c) 42 - 48°
- d) 50 - 55°

Ans : (b)

47. Bracket calcification seen in -

- a) Lipoma of corpus callosum
- b) Epidermoid
- c) Dermoid
- d) Glioma

Ans : (a)

48. Bourneville's disease is -

- a) Tuberous sclerosis
- b) Lissencephaly
- c) Neurofibromatosis
- d) Sturge - Webers syndrome

Ans : (a)

49. Radionuclide scan done for parathyroid adenoma-

- a) Sesta MIBI scan
- b) Iodine - 123
- c) ^{99m}Tc - Sulphur colloid
- d) Gallium scan

Ans : (a)

50. In which lung cancer cranial irradiation is also given in treatment?

- a) Small cell ca
- b) Non small cell ca
- c) Adenocarcinoma
- d) Squamous cell ca

Ans : (a)

51. Highly radiosensitive tumour is -

- a) Ewing's
- b) Melanoma
- c) Pancreatic ca
- d) Osteosarcoma

Ans : (a)

52. Most common method of radiation dose delivery -

- a) Teletherapy
- b) Electron beam
- c) Radioimmunotherapy
- d) Brachytherapy

Ans : (a)

53. Stereotactic Radio surgery is a form of -

- a) Radiotherapy
- b) Radioiodine therapy
- c) Robotic surgery
- d) Cryosurgery

Ans : (a)

54. The treatment of choice for stage I cancer larynx is -

- a) Radical surgery
- b) Chemo therapy
- c) Radio therapy
- d) Surgery followed by radio therapy

Ans : (c)

55. Sodium - 2 mercapto ethane sulfanate (mesna) is used as protective agent in -

- a) Radio therapy
- b) Cancer chemo therapy
- c) Lithotripsy
- d) Hepatic encephalopathy

Ans : (b)

56. Which one of the following therapeutic mode is commonly employed in intraoperative radiotherapy?

- a) Electron

- b) Photon
- c) X-ray
- d) Gamma rays

Ans : (d)

57. The ideal timing of radiotherapy for wilms tumour after surgery is -

- a) Within 10 days
- b) Within 2 weeks
- c) Within 3 weeks
- d) Any time after surgery

Ans : (a)

58. Most ionizing radiation of following is -

- a) X-rays
- b) Gamma rays
- c) Alfa rays
- d) Beta rays

Ans : (c)

59. Which of the following substances are used to coat walls of CT scan room for radiation shielding?

- a) Tungston
- b) Glass
- c) Lead
- d) Iron

Ans :

60. The technique employed in radiotherapy to counteract the effect of tumour motion due to breathing is known as -

- a) Arc technique
- b) Modulation
- c) Gating - Gating
- d) Shunting

Ans : (c)

61. Radiation therapy to hypoxic tissues may be potentiated by treatment with -

- a) Mycostatin
- b) Metronidazole
- c) Methotrexate
- d) Melphalan

Ans : (b)

62. Maximum permissible radiation dose in pregnancy is -

- a) 0.5 rad
- b) 1.0 rad
- c) 1.5 rad
- d) 3.0 rad

Ans : (a)

63. WHO Ladder is for the rational titration of -

- a) Oral analgesia
- b) Chemotherapy
- c) Radiotherapy
- d) Antidepressants

Ans : (a)

64. Following are indications for post operative radiotherapy in case of ca endometrium except -

- a) Myometrium invasion of more than half thickness
- b) Positive lymph nodes
- c) Endocervical involvement
- d) Tumour positive for estrogen receptors

Ans : (d)

65. Which of the following radioisotopes is not used as permanent implant?

- a) Iodine - 125
- b) Palladium - 103
- c) Gold - 198
- d) Caesium - 137

Ans : (d)

66. Gamma camera in Nuclear Medicine is used for -

- a) Organ imaging
- b) Measuring the radioactivity
- c) Monitoring the surface contamination
- d) RIA

Ans : (b)

67. Phosphorus 32 emits

- a) Beta particles
- b) Alfa particles
- c) Neutrons
- d) X-rays

Ans :

68. Most common deficiency seen after intracranial radiation therapy -

- a) Prolactin
- b) Gonadotropins
- c) ACTH
- d) Growth hormone

Ans : (d)

69. Which of the following tumour os least radiosensitive

- a) Ewing's sarcoma
- b) Osteosarcoma
- c) Wilms tumour
- d) Neuroblastoma

Ans : (b)

70. The recommended monthly radiation exposure limit of embryo or foetus is -

- a) 0.05 MSV
- b) 0.1 MSV
- c) 0.5 MSV

d) 0.005 MSV

Ans : (c)

71. Half life of cobalt 60 is -

a) 5.2 hrs

b) 5.2 years

c) 8 days

d) 8 months

Ans : (b)

72. Cell most sensitivity to radiotherapy is -

a) Rapidly proliferative cell

b) Slowly dividing cells

c) Central nervous system

d) None of above

Ans : (a)

73. Phantom is used in -

a) Stereotactic surgery

b) Electron Beam CT

c) Both

d) None

Ans : (c)

74. The most important problem involving radiation exposure of public -

a) Radon

b) Medical examination

c) Accident in nuclear power plants

d) None of these

Ans :

75. The gobal standard for identification of bladder cancer is -

a) Cystography

b) Cystoscopy

- c) CT
- d) MRI

Ans : (b)

76. Hydatid cyst shows wall calcification in the following organs except -

- a) Liver
- b) Spleen
- c) Lung
- d) Heart

Ans : (c)

77. "Finger in glare" sign on chest X-ray is seen in -

- a) Staphylococcal pneumonia
- b) Lung hydatid
- c) Idiopathic Pulmonary fibrosis
- d) Allergic Broncho Pulmonary Aspergillosis

Ans : (d)

78. All of the following about aspergillosis are true except -

- a) Aspergillus mycetoma formation indicates increased virulence of aspergillus
- b) Bronchial invasive aspergillus is associated with patients with severe neutropenia
- c) Aspergillus is a saprophytic fungus seen also in immunocompetent individuals
- d) Halo sign is the characteristic radiologic feature of invasive aspergillus.

Ans : (a)

79. Ileal jejunalisation pattern on barium meal follow through study is classically seen in -

- a) Tropical sprue
- b) Celiac disease
- c) Ulcerative colitis
- d) Crohn disease

Ans : (b)

80. "Swiss - cheese" nephrogram on IVP is seen in -

- a) Horseshoe kidney

- b) Adult Polycystic kidney disease
- c) Renal tuberculosis
- d) Medullary nephrocalcinosis

Ans : (b)

81. Acral metastasis are seen in all of the following concerns except -

- a) Lung
- b) Breast
- c) Thyroid
- d) Kidney

Ans : (c)

82. Spade - like appearance of terminal phalanges on X-ray is seen in -

- a) Primary hyperparathyroidism
- b) Hypervitaminosis A
- c) Thyroid acropachy
- d) Acromegaly

Ans : (d)

83. "Inflated spine" appearance on X-ray is seen in -

- a) Aneurysmal bone cyst
- b) Osteosarcoma
- c) Osteoid osteoma
- d) Paget's disease

Ans : (a)

84. All of the following are seen in avascular necrosis of femoral head except -

- a) Subchondral fracture
- b) Bite sign
- c) Periosteal buttressing
- d) Triple line sign

Ans : (d)

85. All of the below are direct signs of lung collapse on chest X-ray except -

- a) Displacement of fissure
- b) Crowding of pulmonary vessels & bronchi
- c) Elevation of hemidiaphragm
- d) Hilar elevation

Ans : (c)