

PAPER - I
BASIC SCIENCES

11. BASIC SCIENCES

12. MAJOR QUESTIONS

1. Classify intravenous contrast media. What are the advantages of newer generation of contrast media. Discuss their adverse reactions.
2. Describe the basic construction of an X-ray tube and its recent advances.
3. Describe in detail the constituent of developer and fixer used in manual processing. Explain the formation of radiographic image on a film

4. Discuss the principles, construction and functionalities of individual components of an image intensifier. Briefly describe the fluoroscopic imaging unit assembly.
5. Enumerate factors affecting radiographic image quality. How will you improve radiographic image quality.
6. What is maximum permissible dose? Describe the methods of radiation protection to the patient and staff in diagnostic radiology.
7. Describe in detail the structure and principle of Intensifying screen. Discuss the newer phosphor technology.
8. Discuss the principle of acoustics applicable to ultrasound imaging. Describe in brief the construction of transducers used in real time ultrasound. Discuss in brief the various ultrasonography controls.
9. Discuss in detail digital subtraction angiography.
10. Describe the principles of computed radiography (CR) and digital radiography (DR).
11. Write the radiographic technique of the following:
 - a) Towne's view b) Scaphoid bone views
 - c) Skyline view of patella d) Schuller's view
12. Write the radiographic technique of the following
 - a) Base of the skull b) Craniovertebral junction
 - c) Apicogram d) Calcaneum
13. Write the radiographic technique of the following:
 - a) Carpal tunnel view b) Water's view
 - c) Nogaards Ball catcher view d) Sacroiliac joint
13. Discuss the principles of Doppler sonography and instrumentation. Discuss various Doppler controls and operating modes used in clinical Doppler sonography.
14. Discuss the CT anatomy of the temporal bone
15. Discuss the principles and applications of Multislice volumetric spiral CT.
16. What are the properties of x-rays. Discuss the biological effects of radiation.
17. Discuss the cross sectional anatomy of neck spaces
18. Discuss the imaging anatomy of the orbit
19. Discuss the imaging anatomy of the knee joint.
20. Discuss basic interaction of X-rays with matter.
21. Discuss the basic principles of MRI
22. Discuss the basic physics and Instrumentation of a mammographic unit. What are the different mammographic projections.

23. Discuss in detail the construction of a grid and explain how it helps in improving the radiographic quality
24. What are isotopes? What is the principle of SPECT. Mention the common application of radionuclide isotopes in diagnostic radiology.
25. Discuss the imaging anatomy of the shoulder joint.
26. Discuss the physics and instrumentation of gamma imaging.

SHORT NOTES

1. Electromagnetic radiation
2. CSF pathways
3. Cross sectional anatomy of peritoneal spaces
4. A.E.R.B and its controlling functions in radiology
5. ICRP recommendations
6. Pregnancy and radiation
7. ALARA
8. Cross sectional anatomy of suprarenal glands. Enumerate hormones secreted by zones of suprarenal glands
9. Segmental anatomy of liver and its importance
10. Fetal circulation
11. Dacryocystography
12. Embryology and anatomy of pancreas
13. CT numbers & CT windowing.
14. T-tube cholangiography
15. High KV technique in chest X-ray
16. PACS
17. Rectification
18. Describe the cross sectional details of the conventional X-ray film and that of a one side coated film
19. Film processor
20. Scattered Radiation
21. Dark room safelight
22. Focal spot of X-ray tube
23. Autotransformer
24. Rotating Anode
25. Piezo electric effect
26. Co₂ Angiography
27. Personnel dosimetry systems
28. Compton effect

29. Anode Heel effect
30. Iohexol
31. Wedge filter
32. Paramagnetic contrast media
33. Macroradiography
34. Superior orbital fissure
35. Mobile x-ray unit
36. Air gap technique
37. Thermionic emission
38. Transformer
39. Sialography
40. MR angiography
41. ^{99m}Tc labeled radionuclide scans
42. Methods of evaluation of grid performance
43. MR myelography
44. Computed Radiography (CR) Artefacts
45. X-ray beam restrictors
46. Line focus principle
47. Time gain compensation (TGC) and dynamic range in ultrasound
48. Myelography
49. CT artifacts
50. CT Enterography
51. Post processing techniques in MDCT and their utility
52. Inversion Recovery sequence
53. I.V.U.
54. Process of X-ray generation
55. Types of X-ray film
56. Intra operative ultrasound
57. MRI artifacts
58. Ultrasound artifacts
59. Tissue harmonic imaging
60. Bone densitometry
61. Paramagnetic MR contrast media
62. Iodixanol

63. Nephrogenic systemic fibrosis
64. Half value layer
65. Units of radiation dose
66. Ultrasonic display modes
67. Instrumentations in MRI.

PAPER - II

G.I.T (GASTROINTESTINAL TRACT)

G.U.T (GENITOURINARY TRACT)

C.V.S (CARDIOVASCULAR SYSTEM)

BREAST + OBG

G.I.T (Gastrointestinal Tract) 2009

MAJOR QUESTIONS

1. Describe barium swallow examination. Discuss the imaging approach to an elderly patient presenting with dysphagia.
2. Discuss the role of a radiologist in management of jaundice in an adult patient.
3. Discuss the role of imaging in gastrointestinal obstruction in neonatal and pediatric age group.

4. Classify pancreatic neoplasms. Discuss the role of imaging in evaluation of these tumours.
5. Discuss the role of an interventional radiologist in hepatic and biliary disease.
6. Enumerate the causes of upper GI tract bleeding. How will you approach to investigate and manage a case of hematemesis.
7. Discuss the role of a radiologist in a 40 yr old male patient presenting to the ER with acute abdominal pain in the right hypochondrium & epigastrium.
8. Discuss the role of Radiologist in a 35 yr old female presenting with lower abdominal pain.
9. Discuss the principle, technique & utility of various imaging modalities with special emphasis on enteroclysis in evaluation of the small bowel. Discuss in detail malabsorption syndrome.
10. Discuss the role of imaging in evaluation of pediatric abdominal masses.
11. Enumerate the causes of lower GIT bleed and discuss the role of Radiology in evaluation and management of lower GI bleed.
12. Discuss the principles, technique and utility of various imaging modalities in evaluation of large bowel. Discuss role of imaging in evaluation of inflammatory diseases of the colon.
13. Discuss the role of imaging in hepatic tumours in adults.
14. Imaging assessment and management of Pancreatitis.
15. Discuss the cross sectional anatomy of retroperitoneum and describe in detail primary retroperitoneal tumors.
16. Enumerate pre-malignant conditions of GIT. Describe imaging features of small and large bowel malignancies
17. Discuss the technique of barium meal examination. Describe radiological and imaging features of gastric pathologies.
18. Discuss the role of Imaging in a case of blunt abdominal trauma.
19. Describe imaging appearances of abdominal tuberculosis
20. Discuss the Imaging of intestinal obstruction in adults.
21. Describe the blood supply of the large and small intestine. Discuss the role of a radiologist in evaluation and management of a suspected case of bowel ischemia.
22. Discuss the imaging in a case with suspected acute appendicitis.
23. Describe embryology of gut rotation and fixation. Discuss the differential diagnosis of a neonate with bilious vomiting.

24. Discuss the role of imaging in upper GI obstruction in pediatric age group.
25. Describe the anatomy of pancreas. Discuss imaging in endocrine tumours of pancreas.
26. Discuss the role of Ultrasound and CT in diffuse liver disease.
27. Plain radiography in evaluation of acute abdomen.
28. Discuss the imaging of abdominal lymphoma.
29. Discuss the imaging approach in a 50 year old male presenting with right iliac fossa mass.

G.I.T

SHORT NOTES

1. Pharmacoradiology in the Gastrointestinal tract
2. Inflammatory fatty masses of the abdomen
3. Radiological interventions of the hollow viscera
4. Gastro intestinal scintigraphy
5. Endoscopic ultrasound
6. Coeliac plexus block
7. CT colonography
8. Ultrasonography in evaluation of Gall bladder
9. Choledochal cyst
10. Budd Chiari syndrome
11. Hiatus Hernia
12. Ultrasonography in jaundice.
14. Barium enema technique and findings in colonic malignancy.
13. Cystic lesions of liver
14. Cystic neoplasms of pancreas
15. Sialography
16. Cystic lesions of jaw
17. Mechanical small bowel obstruction
18. CT Imaging of acute pancreatitis
19. Oesophageal atresia and tracheo-oesophageal fistula
20. Pre-malignant conditions of the intestine.
21. Ulcerative colitis
22. Benign gastric tumors
23. Radio-isotopes in Hepatobiliary diseases
24. Ultrasound in evaluation of bowel diseases
25. Ileocaecal tuberculosis
26. Ultrasonography in abdominal tuberculosis
27. Ultrasound and Doppler sonography in portal hypertension.
28. Ultrasound imaging of appendicitis
29. Anorectal malformation
30. Pheochromocytoma

31. Gastric ulcer
32. Achalasia cardia
33. Meconium ileus
34. Superior mesentric artery syndrome
35. Gastrointestinal manifestations of AIDS
36. Oesophageal Diverticuli.
37. Megacolon
38. Ultrasound in liver abscess
39. Pneumobilia
40. Splenic masses
41. Meckel's diverticulum
42. Malrotation of the intestine
43. Biliary strictures
44. Intussusception
45. Oesophageal varices
46. Haemangioma of the liver
47. Neuro enteric cyst
48. Normal and abnormal extrinsic impressions on a esophagogram.
49. Gastric volvulus
50. Crohn's Colitis
51. Lymphoma of the GIT
52. Pneumoperitoneum
53. Gastric leiomyoma
54. Duodenal tumours
55. Barium findings in coeliac disease
56. Hirschprung's disease
57. Intramural air in G.I.T.
58. Subphrenic abscess
59. CT Imaging of Hepatocellular Carcinoma
60. Imaging of Cholangio Carcinoma
61. Liver metastasis
62. Hepatic hydatid disease
63. Ultrasound in pancreatitis
64. Pancreatic pseudocyst

65. Biliary atresia
66. Congenital hypertrophic pyloric stenosis
67. Sigmoid volvulus
81. Cholecystitis
68. Development of pancreas and its developmental anomalies.
69. Gastrooesophageal junction.
70. Necrotising enterocolitis
71. Segmental anatomy of liver and its importance
72. Vascular complications of pancreatitis
73. Endocrine tumours of pancreas
74. Syndromes with GIT polyposis.
75. Retroperitoneal Fibrosis.
76. MRI in liver masses
77. Hepatic masses of childhood.
78. Small bowel neoplasms
95. Role of Angiography in lower G.I tract bleeding
96. Transjugular intrahepatic portosystemic shunt
97. TACE.
98. Adenomyomatosis of the gall bladder
100. Carcinoid tumour
101. Internal abdominal Hernias
104. GIST
105. Gastrooesophageal reflux disease (GERD)
106. CT & PET-CT in oesophageal carcinoma
107. Motility disorder of oesophagus
108. Barium preparations for GIT studies
109. Hypotonic duodenography
110. Enteroclysis
111. Radionuclide imaging of GIT
112. Alimentary tract manifestations of systemic sclerosis
113. CT colonography
114. Diverticular disease of colon
115. Fistula – in – ano
116. Peritoneal neoplastic disease

117. Meconium ileus
118. MDCT Protocol of evaluation of liver
119. Focal nodular hyperplasia (FNH)
120. Hepatic adenoma
121. Portal hypertension
122. Imaging in hepatic trauma
123. Imaging in splenic trauma.
124. PTC
125. Primary sclerosing cholangitis
126. Percutaneous liver tumour ablation
127. CT severity index in acute pancreatitis
128. MRCP
129. Radiology of the post operative stomach
130. Neonatal Jaundice.
131. Intraductal papillary mucinous tumours.
132. Cystadenoma of pancreas
133. Annular pancreas
134. Congenital biliary anomalies

GENITOURINARY TRACT (G.U.T)

MAJOR QUESTIONS:

1. Discuss the embryology and congenital anomalies of the urinary system. Discuss the role of imaging in their evaluation.
2. Classify renal tumours in adults. Describe in detail imaging findings in malignant renal tumours.
3. Discuss role of Radiologist in evaluating suspected case of hypertension of renal origin.
4. Discuss imaging of hypertension in a young adult.
5. Imaging in Renal transplantation.
6. What are the causes of hematuria? Describe the imaging approach in a case of hematuria.
7. Imaging approach in evaluation of a mass in the lumbar region in neonatal and pediatric age group.
8. Imaging approach in evaluation of a mass in the lumbar region in adults.
9. Discuss the evaluation of renal cystic lesions and cystic diseases of the kidney.
10. Describe radiology and Imaging features in tuberculosis of genito urinary tract.
11. What are the categories of renal injury. Discuss the role of Radiologist in evaluation and management of Renal trauma.
12. Discuss the role of radiology in imaging and management of female infertility
13. Describe the types of IUGR. Discuss the role of Radiologist in evaluation of IUGR.
14. Classify ovarian tumours. Discuss the role of imaging in ovarian tumours.
15. Discuss the role of ultrasound in congenital anomalies of brain, GIT and GUT in antenatal examinations of a pregnant woman.
16. Enumerate renal masses in children. Describe in detail the radiological and imaging features of Wilm's tumour
17. Describe the radiological and imaging approach in male infertility
18. Describe the embryology of the female genital tract. Discuss the imaging of mullerian duct anomalies.
19. Discuss imaging of adnexal masses.

20. Describe ultrasound features of first trimester pregnancy. Enumerate the causes of bleeding in first trimester and discuss their imaging features
21. Role of ultrasound in first trimester of pregnancy
22. Describe the role of imaging in Acute pelvic pain in females
23. Role of CT & MRI in Gynaecological malignancies
24. Enumerate the causes and discuss the role of imaging in urinary tract obstruction
25. Discuss the imaging features of infective diseases of the kidney
26. Ultrasonography of the scrotum: Discuss the anatomy and pathologic entities
27. Discuss the imaging of placenta
28. Classify adrenal lesions. Discuss the role of CT & MR in evaluation of adrenal lesions.
29. Describe the role of radionuclide studies in urinary system
30. Sonographic markers of chromosomal anomalies

GENITOURINARY TRACT (G.U.T)

SHORT NOTES:

1. Renal cyst
2. Anatomy of male urethra & ASU
3. Infantile polycystic disease of kidneys
4. Nephrocalcinosis
5. Vesicular mole
6. Papillary necrosis
7. Posterior urethral valve
8. Vesico ureteral reflux
9. Percutaneous nephrostomy
10. Pelvimetry
11. Prune belly syndrome
12. Neurogenic bladder
13. Sonohysterography
14. P N D T Act
15. Biophysical profile
16. Fallopian tube recanalisation

17. CT & MR Urography
18. Fetal viability in first trimester
19. Hysterosalpingography
20. Pseudotumours of kidney
21. Horse-Shoe kidney
22. Retroperitoneal fibrosis
23. Pheochromocytoma
24. Acute pyelonephritis
25. Chronic pyelonephritis
26. Renal vein thrombosis
27. Pelviureteric junction obstruction
28. Ureteric stricture
29. Filling defect in the urinary bladder
30. Medullary sponge kidney
31. Ureterocoele
32. Varicocoele
33. Retrocaval ureter
34. Role of CT in adrenal tumours
35. Imaging in lower urinary tract obstruction
36. Adenomyosis
37. Unilateral large kidney
38. Fibromuscular dysplasia of renal artery
39. Zonal anatomy of prostate
40. Role of USG and Colour Doppler in renal failure
41. Imaging of intrauterine foetal death
42. Polycystic ovarian disease
43. Imaging of uterine fibroid
44. Epispadias exstrophy complex
45. Radionuclide imaging of urinary tract
46. Hypersecretion disorders of suprarenals.
47. Endometriosis
48. Sonography in bleeding in first trimester
49. Merits and demerits of captopril renogram in renovascular hypertension
50. Xanthogranulomatous pyelonephritis

51. Renal angiomyolipoma
52. Doppler finding in renal artery stenosis
53. Benign tumours of kidney
54. Alimentary tract anomalies diagnosable in utero
55. Polyhydramnios
56. Testicular tumours
57. Acute scrotum
58. Neuroblastoma
59. CT in renal infections
60. Erectile dysfunction
61. Ovarian dermoid
62. 99-Tc DTPA
63. Role of sonography in transplant kidney
64. Renal rickets
65. Extra-uterine pregnancy
66. Placenta praevia & Abruptio placenta
67. MR in Carcinoma cervix
68. Abnormal uterine bleeding in peri and post menopausal women
69. Gestational trophoblastic disease
70. MRI in evaluation of uterine anomalies
71. Imaging in chronic pelvic pain in a adult female
72. Adrenal adenoma
73. Adrenal incidentiloma
74. Urachal anomalies
75. Sonography in placenta
76. Imaging of placenta
77. Imaging of cervix in pregnancy
78. Abdominal wall defects in fetus
79. Imaging of donor transplant kidney
80. MIBG scan
81. Multicystic dysplastic kidney
82. Ovarian torsion
83. Adrenal haemorrhage
84. Antenatal assessment of fetal lung masses and mass like lesions

85. Role of unenhanced CT in acute abdomen
86. MCU
87. Emphysematous Pylonephritis
88. Multilocular cystic renal neoplasm
89. Wilm's tumour
90. Sonographic markers of Down syndrome
91. Ovarian follicular monitoring
92. MRI technique and normal anatomy of the uterus.

C.V.S.

MAJOR QUESTIONS

1. How as a Radiologist do you approach a suspected case of congenital heart disease. Discuss in detail various cyanotic congenital heart diseases.
2. Discuss coronary artery anatomy and its congenital variations. Elaborate on the role of computed tomography in assessment of coronary artery disease.
3. Briefly describe the pulmonary arterial anatomy. Discuss in detail the role of a Radiologist in management of a suspected case of pulmonary thromboembolism.
4. Discuss the role of a Radiologist in management of a case presenting to the ER with suspected acute condition of the aorta.
5. Discuss the principles, techniques, advantages, limitations and complications of catheter angiography.
6. Discuss the role of MDCT in evaluation of an elderly patient presenting to the ER with acute chest pain.
7. Briefly describe the embryological development of the heart. Discuss the imaging features of Acyanotic congenital heart disease.
8. Discuss the principles, techniques, advantages, limitations of CTA and MRA.
9. Discuss the role of a radiologist in management of a patient with vascular claudicating pain.

10. Discuss the development of aorta and its main branches. Elaborate on the anomalies of aortic arch and its major branches.

SHORT NOTES

1. Pulmonary stenosis
2. Ebstein's anomaly.
3. Ultrasound and Colour Doppler features of DVT
4. Role of Radio isotope in pulmonary embolism
5. Mitral valvular disease
6. Anomalies of aortic arch and its major branches.
7. Fetal circulation
8. Left to right shunts
9. Pulmonary venous hypertension
10. Acute and chronic pulmonary arterial hypertension
11. Thoracic aortic aneurysm
12. Coronary artery anomalies
13. Lower limb varicose veins
14. Total anomalous pulmonary venous drainage.
15. Tetralogy of Fallot
16. Partial anomalous pulmonary venous drainage.
17. VSD
18. ASD
19. Aorto-arteritis.
20. Aortic dissection
21. Double outlet right ventricle
22. Single ventricle
23. Cor triatriatum
24. Truncus arteriosus

25. Cardiac and Pericardiac calcification
26. Cardiac tumours
27. Ventricular aneurysm
28. Subclavian steal syndrome
29. Shunt surgeries in congenital heart diseases
30. Heterotaxy syndromes
31. Radiography in cardiomegaly and individual chamber enlargement.
32. Normal pericardial anatomy
33. Imaging of non – neoplastic pericardial disease
34. Cardiogenic Vs Non-Cardiogenic pulmonary edema
35. Anomalies of the IVC and the Azygous system.
36. Coarctation of aorta
37. Ultrasound in peripheral vascular disease
38. Radio-isotopes in cardiac imaging
39. Pre and post operative assessment in hemodialysis access surgery.
40. Imaging in Cardiomyopathies
41. Embolic agents

BREAST (2009)

LONG QUESTIONS

1. Discuss the role of a Radiologist in management of palpable and non palpable Breast lesions utilizing X-ray mammography and sonomammography.
2. Discuss the differential diagnosis of an incidentally discovered breast lump and the different modes of investigation you will adopt to arrive at a provisional diagnosis.
3. Breast calcifications: Mammographic evaluation

SHORT NOTES - BREAST

1. Calcifications in benign breast disease
2. Mammographic (views) projections
 1. BI-RADS
 2. Calcifications in malignant breast disease
 3. Pre-operative localization of non palpable breast disease.
 4. Benign breast masses
 5. Mammographic signs of malignancy
 6. Sonomammography
 7. Benign breast conditions that mimic malignancy
 8. Cystic lesions of the breast
 9. Post operative breast imaging
 10. Recommendations for breast screening.

PAPER - III

RESPIRATORY SYSTEM

BONES (MUSCULOSKELETAL SYSTEM)

HEAD AND NECK (CNS)

RESPIRATORY SYSTEM (R.S)

MAJOR QUESTIONS:

1. Discuss the imaging of cystic and cavitating lesions of the lung
2. Classify mediastinal masses and discuss the imaging findings of anterior mediastinal masses
3. Briefly mention the causes of respiratory distress in newborn. Discuss their imaging findings in detail.

4. Classify the tumors of lung. Discuss the imaging features and staging of bronchogenic carcinoma
5. Describe the technical aspects of HRCT of the lung. Describe the imaging features of collagen vascular diseases in lung.
6. Discuss the imaging in occupational lung diseases.
7. Discuss the pre and postnatal imaging features of congenital lung diseases
8. Discuss the anatomy of diaphragm and normal variation. Discuss the imaging findings of diaphragm and related pathologies
9. Describe mediastinal anatomy. Discuss the imaging findings in posterior mediastinal mass.
10. Discuss in detail the imaging manifestations of AIDS in the chest.
11. Describe the mechanism and causes of lung collapse. Discuss the imaging features of various pattern of lung collapse.
12. Discuss the imaging findings of various lesions involving the ribs
13. Describe the radiological anatomy of hypopharynx and larynx and discuss the role of imaging in assessment of laryngeal pathologies.
14. How will you approach a case of solitary pulmonary nodule?
15. Discuss the anatomy of secondary pulmonary lobule. Discuss the pattern of interstitial lung diseases on HRCT and briefly discuss their differential diagnosis.
16. Imaging of the pleural and chest wall pathologies
17. Discuss the imaging of various interstitial pneumonias on HRCT.
18. Thoracic imaging in intensive care patient.

RESPIRATORY SYSTEM

SHORT NOTES

1. Wegener's granulomatosis
2. Thoracic manifestations of histiocytosis
3. Lung changes in mitral stenosis
4. Unilateral opaque hemithorax
5. Ventilation perfusion studies by Radionuclide scanning
6. Pulmonary sarcoidosis
7. Fungus ball and its differential diagnosis.
8. Lymphangitis carcinomatosa
9. Fine needle aspiration of lung lesion
10. Metastatic lung lesion
11. Radiological anatomy of bronchopulmonary segments
12. Superior sulcus tumours
13. Bronchogenic cyst
14. Pneumomediastinum
15. McLeod's syndrome
16. Agenesis of lung
17. Alveolar Microlithiasis
18. Round atelectasis
19. Sub pulmonary effusion
20. Bilateral upper lobe fibrosis of the lung
21. Cystic adenomatoid malformations
22. Scimitar syndrome
23. Congenital lobar emphysema
24. Mediastinal lymph nodes and lymphatic drainage of the lungs
25. Mediastinal lines & stripes
26. Diaphragmatic hernias
27. Pneumothorax
28. Thymic tumours
29. Neuroenteric cyst
30. Broncho alveolar carcinoma
31. Lung abscess

32. Pneumocystic carinii pneumonia
33. Hydatid cyst in lung
34. Bronchiectasis
35. Asbestosis
36. Pulmonary odema
37. Rheumatoid lung
38. Silicosis
39. Radiation pneumonitis
40. Coal workers pneumoconiosis.
41. Bacterial pneumonias in adults
42. Respiratory distress Syndrome.
43. Pulmonary alveolar proteinosis.
44. Bronchopulmonary aspergillosis
45. Pulmonary hamartoma.
46. Cystic mediastinal tumours
47. Cystic fibrosis
48. Duplication cyst
49. Fibrosing mediastinitis
50. Germ cell tumours of mediastinum
51. Hiatus hernia
52. Pleural tumours
53. Viral pneumonias
54. Empyema thoracic
55. Primary pulmonary tuberculosis
56. Post primary tuberculosis
57. CT in evaluation of tracheo bronchial disease
58. Emphysema
59. BOOP
60. Bronchial carcinoid
61. Systemic sclerosis
62. Drug induced lung disease
63. Hypersensitivity pneumonitis
64. Diaphragmatic rupture
65. Bronchopleural fistula

66. Intravascular catheters in chest
67. Diffuse pulmonary hemorrhage
68. Bronchial artery embolisation
69. Congenital diaphragmatic hernia
70. Oesophageal atresia and trachea oesophageal fistula
71. Ultrasound in assessment of chest diseases
72. Pulmonary sarcoidosis
73. Pulmonary sequestration
74. CT bronchoscopy and its utility
75. Rheumatoid lung disease
76. Injuries to the lung
77. Imaging in thymic lesions
78. Eventration of the diaphragm
79. Pulmonary infarction
80. Fungal diseases of the lung
81. Paraneoplastic syndrome
82. Bronchopulmonary dysplasia
83. Hypoplasia and aplasia of lung
84. Vanishing lung disease.

BONES (MUSCULOSKELETAL SYSTEM)

Major questions

1. Describe the calcium metabolism and discuss radiological changes in hyperparathyroidism.
2. Discuss etiopathogenesis and imaging appearances in Avascular necrosis of femoral head.
3. Classify bone tumours. Discuss the radiological approach in diagnosing bone tumours. Discuss in detail various types of osteosarcomas.
4. What are the causes of hip pain in early childhood? Discuss the imaging findings in congenital dislocation of hip/Developmental dysplasia of hip.
5. Discuss the role of Radionuclide scan in evaluation of a skeletal lesion
6. What are the seronegative arthropathies. Discuss in detail their Radiological features.
7. Discuss the imaging features of skeletal tuberculosis
8. What are the causes of soft tissue ossification and calcification. Describe the radiological features of the various causes
9. What are the various crystal deposition diseases. Discuss their imaging features.
10. Discuss the differential diagnosis of a expanding lesion at the end of a long bone.
11. Role of MRI in evaluation of ligament and meniscal injury of the knee.
12. Discuss Vitamin D metabolism – Describe role of imaging in Vit. D deficiency disorders.
13. Discuss various bone tumours of the vertebral column.
14. What are the different types of periosteal reactions? Discuss the imaging features of osteomyelitis.
15. Discuss the role of imaging in the pathologies of the shoulder joint.
16. Discuss the role of imaging in evaluation of chondrogenic bone tumours.
17. Discuss the role of antenatal sonography in evaluation of the fetal skeletal system. Describe the features of various lethal skeletal dysplasias.
18. What is the imaging approach to a case of monoarthritis. Describe in detail individual conditions that can present with monoarthritis.
19. Discuss the role of imaging in spinal trauma.

BONES- (MUSCULOSKELETAL SYSTEM -2009)

SHORT NOTES

1. Differential diagnosis of expanding lesions of mandible
2. Pyknodysostosis
3. Benign cartilaginous bone tumours
4. Paget's disease of bone
5. Seronegative spondyloarthropathies
6. Acro-osteolysis
7. Osteoid osteoma
8. Sclerosing bone dysplasias
9. Atlantoaxial dislocation
10. Degenerative disc disease
11. Metastatic osseous disease
12. Solid/continuous periosteal reaction
13. Fluorosis
14. Marfan's syndrome
15. Isotopes in bone imaging
16. Perthe's disease
17. Atypical osteosarcoma
28. Renal rickets
29. Pigmented villonodular synovitis
30. Chondrosarcoma
31. Fractures of craniovertebral junction
32. Rib notching
33. Ankylosing spondylitis
34. Hypertrophic osteo arthropathy
35. Osteoporosis
36. Osteopetrosis
37. Achondroplasia
38. Neuropathic joints
39. Giant Cell Tumor
40. Histiocytosis
41. Scurvy

42. Diffuse Idiopathic Skeletal Hyperostosis
43. Discal calcification
44. Enchondroma
45. Developmental dysplasia of hip
46. Cleidocranial dysplasia
47. Osteogenesis imperfecta
48. Fibrous dysplasia
49. Diaphyseal Acalasia
50. Morquio's disease
51. Down's syndrome
52. Osteomyelitis in infants
53. Brodie's abscess
54. Congenital syphilis
55. Caffey's disease
56. Early radiographic findings in Rheumatoid arthritis
57. Psoriatic arthritis
58. Reiter's syndrome
59. Interrupted periosteal reaction
60. Anterior knee pain
61. Osteoarthritis
62. Gout
63. Osteblastoma
64. Conventional osteosarcoma
65. Osteochondroma
66. Aneurysmal Bone Cyst
67. Hemangioma of bone
68. Solitary bone cyst
69. Ewing's sarcoma
70. Adamantinoma
71. Thalassemia
72. Sickle cell anaemia
73. Skeletal manifestation of leukemia
74. Primary bone lymphoma
75. Hemophilia

76. Radiological features of Hyperparathyroidism
79. Radiological Features of Hypothyroidism
77. Myositis ossificans
78. Salter Harris fractures
79. Slipped capital femoral epiphysis
80. Renal osteodystrophy
81. Pyogenic and tuberculous osteomyelitis in the spine
82. Septic arthritis
83. MRI in intervertebral disc prolapse.
84. MRI in avascular necrosis of hip.
85. MRI in cruciate ligament tear
86. Spinal tuberculosis
87. Discoid Meniscus
88. Synovial osteochondromatosis.
89. Metaphyseal lucent bands.
90. Metaphyseal dense bands
91. Erlenmeyer flask deformity
92. Bone infarct
93. Maffucci syndrome
94. Role of CT in faciomaxillary trauma
95. MRI in meniscal injuries
96. Carpal tunnel syndrome
97. Radiography in shoulder dislocation
98. Radiography in Cervical spine trauma
99. Ivory vertebra
100. Chordoma
101. Plasma cell disorders
102. Osteomalacia
103. Juvenile rheumatoid arthritis
104. Reflex sympathetic dystrophy syndrome
105. Acromegaly
106. Pseudogout
107. Osteochondritis.
108. Radiography In Assessment Of Wrist Pathologies

109. Role of skeletal radiography in age estimation.

110. MR imaging of the spinal bone marrow.

111. SKIBO diseases

CNS-(HEAD AND NECK)

MAJOR QUESTIONS

1. Classify Paediatric brain tumors and describe their imaging features in detail.
2. Classify and enumerate different supratentorial tumours in adults. Describe in detail the imaging features of Glial tumours.
3. Enumerate posterior fossa tumours occurring in children and in adults. Discuss in detail the imaging features of infratentorial tumours in paediatric age group.
4. What are the causes of subarachnoid hemorrhage. Discuss the imaging and management in a case of subarachnoid hemorrhage.
5. Describe the imaging anatomy of craniovertebral junction. Describe the role of imaging in craniovertebral junction pathologies.
6. Describe the anatomy of sella and parasellar regions. Enumerate different tumors in this region and describe in detail imaging features of craniopharyngioma and its differential diagnosis?
7. What is Phakomatosis? Enumerate the various conditions in this group and describe the imaging features of Neurofibromatosis.
8. Describe in detail imaging in Cranio -cerebral trauma .
9. Describe the vascular territories of brain on cross sectional imaging. Discuss the role of imaging in ischemic stroke?
10. Describe the development of embryological development of spinal cord. Classify Congenital anomalies of spine and discuss in detail occult spinal dysraphism?
11. Classify spinal tumours. How will you localize an intra spinal mass on imaging. Discuss differential diagnosis and imaging features of extradural spinal tumour.
12. Classify various orbital mass lesions. Describe the imaging features of orbital mass Lesions.
13. Enumerate the causes of non traumatic intra axial hemorrhage. Describe in detail their CT & MRI imaging features?
14. Discuss the imaging features and diagnosis of inherited white matter diseases (Leukodystrophies).
15. Enumerate the causes of acute paraplegia. Discuss the imaging of infections involving the spine.

16. Discuss differential diagnosis of various space occupying lesions of the CP Angle.
17. Describe the differential diagnosis in a patient presenting with unilateral proptosis.
18. Enumerate Intraventricular masses in children and discuss their imaging features.
19. Enumerate and discuss the imaging features of intraventricular masses in adults.
20. Discuss in detail the imaging of various intracranial vascular malformations.
21. Enumerate and discuss Posterior fossa malformations.
22. Classify and describe various intracranial aneurysms.
23. Enumerate major apertures of skull base and discuss their location, transmitted Structures through them and their connects. Describe the imaging features of various anterior skull base lesions.
24. How will you differentiate intraaxial from extraaxial mass on imaging. Discuss the various extraaxial tumours in adults.
26. Discuss the role of imaging in temporal bone pathologies.
27. Describe the role of imaging in seizures in paediatric age group.
28. Discuss imaging anatomy of the sinonasal region. Describe the role of imaging in planning endoscopic sinus surgery. Discuss the imaging of fungal sinusitis.
29. Give a schematic overview of the anatomy of visual pathway and the field defects caused by lesions in various locations along the pathway. Discuss the various causes of visual loss resulting from lesions along the visual pathway.
30. Describe in detail the role of imaging in degenerative disease of the spine. Briefly discuss imaging in post operative spine.
31. Discuss the role of Neurosonography in neonates.
32. Discuss the role of a radiologist in management of carotid and vertebral artery disease.
33. Describe the imaging anatomy of the middle ear with its relations. Elaborate in detail the imaging of tinnitus using various imaging modalities.
34. Discuss the role of imaging in thyroid gland disorders.
35. Describe the role of imaging in pineal region tumours.
36. Discuss the imaging approach to various causes of ring enhancing lesions of the brain.
37. Discuss the role of imaging in infections and infestations of the adult brain.
38. Neuroimaging in AIDS.

CNS

SHORT NOTES

1. Neurotuberculosis
2. Neurocysticercosis
3. Intramedullary tumours of spinal cord
4. Sturge Weber syndrome
5. Tuberous sclerosis
6. Intradural extramedullary spinal tumours
7. Craniosynostosis
8. Corpus callosum agenesis
9. Holoprosencephaly
10. Schizencephaly
11. Cerebral herniations
12. Cerebral edema
13. Post meningitis sequelae
14. Vertebral hemangioma
15. Chordoma
16. Optic nerve meningioma
17. Thyroid ophthalmopathy
18. Herpes encephalitis
19. CNS infections in newborn
20. Juvenile angiofibroma
21. MRI findings in intracerebral hemorrhage
22. Diastomatomyelia
23. MR features in Parkinsonism
24. Normal pressure hydrocephalus
25. Pulsatile tinnitus
26. Infundibular masses
27. Vein of Galen malformation
28. Cavernous angioma
29. Migration anomalies of the brain.
30. Arnold Chari malformation
31. Retinoblastoma

32. Moya Moya disease
33. Mesial temporal sclerosis
34. MR imaging in spinal trauma
35. Lissencephaly
36. Septo-Optic dysplasia
37. Unilateral Megalencephaly
38. Non accidental cranio cerebral trauma in children
39. Orbital pseudotumour
40. Arachnoid cyst
41. Epidermoid
42. Dandy walker malformation
43. Cystic malformation of posterior fossa
44. Imaging in Otitis media
45. Neurofibromatosis type II
46. Osmotic demyelination
47. Hypertensive encephalopathy
48. CNS sarcoidosis
49. Atypical Meningioma
50. Craniopharyngioma
51. Medulloblastoma
52. DNET (Dysembryoplastic Neuro epithelial tumour)
53. Oligodendroglioma
54. Gliomatosis Cerebri
55. Pituitary microadenoma
56. Imaging subarachnoid haemorrhage
57. Lacunar infarcts
58. Herpes simplex encephalitis
59. Cerebritis and cerebral abscess
60. CNS fungal infection
61. Toxoplasmosis
62. Leukocoria
63. Sacro coccygeal teratoma
64. CNS Lymphoma
65. Cerebral metastases

66. Esthesioneuroblastoma
67. Acoustic neuroma
68. Pituitary macroadenoma
69. Basal ganglia hyperintensity
70. MR Diffusion and perfusion imaging in cerebral ischemia
71. Differential diagnosis of T2W hyperintensity in the Pons.
72. Cholesteatoma
73. Neurofibromatosis I.
74. Whiplash injury.
75. Intraocular tumours.
76. Venous drainage of brain
77. Basilar invagination and basilar impression.
78. PNET of the brain.
79. Solitary thyroid nodule.
80. Multiple sclerosis
81. ADEM
82. Carotid and vertebral artery dissection
83. Brain myelination on MRI
84. Raised intracranial tension
85. Adrenoleukodystrophy (AL)
86. MR venography of brain
87. Spinal vascular malformations
88. Metachromatic leukodystrophy
89. When is CT more appropriate than MRI in neuro imaging
90. Transcranial Doppler
91. Venous Infarct
92. Carotico cavernous fistula
93. Mucocele of Paranasal sinus
94. Grey Scale ultrasound imaging of posterior segment of eye
95. Hypoxic ischemic encephalopathy
96. Caudal regression syndrome
97. Atherosclerotic plaque assessment
98. Radio-isotopes in thyroid disorders
99. Lumbar spinal stenosis

PAPER - IV
RECENT ADVANCES

RECENT ADVANCES

MAJOR QUESTIONS

1. Discuss the principles of diffusion weighted imaging and its utility.

2. Discuss the role of MRI in obstetrics, especially in areas where it overcomes the limitations of ultrasonography and scores over it.
3. Describe the fundamentals of MR spectroscopy. Discuss its role in neuroimaging
4. Discuss imaging of aneurysms and CNS vascular malformations and the recent trends in their management.
5. Discuss the role of MRI in breast diseases.
6. Role of MRI in entrapment and compressive neuropathy of peripheral nerves of the upper extremity.
7. Hepatobiliary contrast agents.
8. Multiparametric MR imaging of the prostate.
9. Functional MR in neuroimaging.
10. Discuss the principles and basis of CT perfusion imaging and its various assessment parameters. Elaborate on the role of CT perfusion in Neuroimaging.
11. Describe segmental anatomy of the liver. Discuss imaging in liver transplantation.
12. Discuss the principles, instrumentation and methodology of PET imaging. Elaborate on its clinical applications in neuroimaging.
13. High intensity focused ultrasound (HIFU) – Principle, Instrumentation and its applications.
14. Discuss various images guided Musculoskeletal interventions
15. MR evaluation of pregnant patient with acute abdominal pain
16. Describe the instrumentation and principles of Radiofrequency ablation. Discuss the indications, patient selection, procedure and complications of its various implications.
17. Discuss the principles, instrumentation and methodology of PET imaging. Elaborate on its role in head and neck cancers
18. Recent trends in minimal invasive image guided therapies for hepatic malignancies
19. Discuss the principles and basis of CT perfusion imaging and its various assessment parameters .Define the role of CT perfusion in oncoimaging.
20. Describe the anatomy of the limbic system. Discuss imaging in temporal lobe epilepsy.
21. Discuss the role of MRI in imaging of the myocardium.
22. Discuss the advances in imaging and management of ischemic stroke.
23. Imaging in diffuse liver disease with emphasis on role of MRI.
24. Discuss the concept of molecular imaging. What are the various modalities used in molecular imaging. Elaborate on the role of MRI in molecular imaging.

RECENT ADVANCES

SHORT NOTES

1. MR Imaging of placenta
2. MRI in pelvic floor imaging
3. TRUS guided interventions
4. MR Enteroclysis
5. MRI hepatobiliary specific contrast agent
6. 3D & 4D ultrasound in foetal imaging
7. Extra CNS utility of diffusion weighted imaging
8. MR Tractography
9. Diffusion and perfusion weighted imaging in stroke
10. USG in Rheumatoid arthritis
11. MRI in Temporomandibular joint
12. Positional and kinematic imaging of spine
13. Comparison of CT & MR Arthrography
14. Cine MR imaging and its utility
15. Flat panel detector
16. Cartilage imaging
17. Carotid stenting
18. CT Cholangiography
19. Ultrasound contrast media
20. Post processing techniques in HRCT lung
21. Gradient echo imaging
22. Chemical shift imaging
23. Echoplanar imaging
24. Super paramagnetic MR contrast media
25. Imaging of the brachial plexus
26. Susceptability weighted imaging
27. Intrauterine foetal intervention
28. Recent advances in CT detector technology
29. Ultrasound elastography
30. Advantage and disadvantages of CR & DR

31. Dual source CT
32. SLAP and FLAP tear in shoulder joint
33. MR Pelvimetry
34. Denta CT and its clinical applications
35. Factors affecting SNR in MRI
36. Pharmacological agents used in cardiac CT & MRI
37. MR coronary angiography
38. Describe the principles of parallel imaging technology and its clinical applications
39. Imaging of breast implant
40. Intraluminal MR contrast Agents
41. CT dosimetry
42. Vascular and biliary variants in the liver – implication for liver surgery
43. Steady state MR imaging sequences
44. Intraductal papillary mucinous tumour of pancreas
45. Whole body diffusion weighted imaging
46. Cardiac stress imaging
47. Carotid and vertebral artery dissection
48. MR perfusion weighted imaging
49. Nodal imaging on MR
50. Newer MR contrast media
51. MRI in endometrial pathologies
52. In phase and out of phase MRI imaging
53. MRI in bone marrow disease of the spine
54. PET in evaluation of lymphoma
55. PET in evaluation of GIT
56. Imaging in brain death
57. Digital Tomosynthesis in Breast Imaging.
