

DNB RADIOLOGY DECEMBER 2013
PAPER I

PAPER II

PART A

1. Enumerate any four clinical conditions which produce a left to right cardiac shunt. Discuss the key radiological findings in any two. What would be the radiographic signs of the possible haemodynamic complications, if the condition remains untreated? 2+(3+3)+2
2. 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
3. A 24-year-old male 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 and late stages of the disease. 1+3+6
4. 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 and 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
5. A 38-year-old road traffic accident victim is brought to you from the Casualty with history of frank haematuria. How would you evaluate this patient? Discuss the possibilities with their key radiological findings. 4+6

PART B

6. State the radiological basis of differentiating a mediastinal mass from an intra-pulmonary mass. How would you localize the compartment of a mediastinal lesion? Discuss briefly the differential diagnosis of mediastinal lesions in anterior compartment. 2+3+5
7. Enumerate the radiologically-evident pericardial afflictions on a chest radiograph. Describe their key radiological findings. 2+8
8. A 65-year-old chronic smoker presents with haemoptysis. The chest radiograph shows a well-defined cavitating intrapulmonary mass with spiculated 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
9. Describe the changes on a chest radiograph in collapse of different lobes in both lungs. 10
10. How would you decide on the amnionicity and 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

PAPER III

PART A

1. A 38-year-old man, who has been throwing epileptic seizures, is found to have ring lesions on magnetic resonance imaging (MRI) of brain. Discuss the differential diagnosis. Describe the specific MRI features of any four clinical entities which may present with these clinikoradiological findings. 2+(2+2+2+2)
2. Enumerate any five morphological patterns of periosteal reaction and state their clinical significance. 2+2+2+2+2
3. State the distinguishing features of intramedullary, extramedullary intradural and extradural spinal lesions on magnetic resonance imaging. Discuss briefly the differential diagnosis of intramedullary spinal lesions. 6+4
4. Enumerate the normal and abnormal extrinsic impressions on the cervical and thoracic parts of the oesophagus during barium swallow examination. Discuss the possibilities in a 56-year-old woman presenting with dysphagia. Describe briefly the key radiological findings in any three conditions. 2+2+(2+2+2)
5. 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 magnetic resonance imaging. 3+(3+4)

PART B

6. 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 and intervention in it. 2+2+2+2+2
7. Describe the technique of magnetic resonance enterography(MRE). Compare its benefits and limitations vis-à-vis conventional contrast studies and CT enteroclysis. 5+5
8. How would you differentiate between an extra-axial and intra-axial mass lesion on cranial magnetic resonance imaging? Describe the radiological findings in the most common extra-axial lesion found in middle aged patients. 4+6
9. Briefly describe role of imaging in the following: 5+5
 - a) Neuro-endocrine tumors of pancreas
 - b) Small bowel lymphoma
10. Discuss the differential diagnosis in a 38-year-old male presenting with right iliac fossa lump, lassitude, and altered bowel habits. Depict the conventional imaging findings in intestinal tuberculosis. 4+6

PAPER IV

PART A

1. Discuss the pathophysiology of venous incompetence in lower extremity. What are common locations of perforators? Describe technique and imaging features in Doppler examination of venous incompetency in lower extremity. 2+3+5
2. Describe etiopathogenesis of biliary atresia. Discuss the role of ultrasound, MRI and scintigraphy in assessment of biliary atresia. 2+(3+2+3)
3. Discuss 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
4. Write short notes on: 5+5
 - a) MR tractography
 - b) Dual energy scanning in musculo-skeletal system.
5. Write short notes on: 5+5
 - a) Carbon-dioxide angiography
 - b) Transcranial sonography in stroke.

PART B

6. What are indications of coronary CT angiography? Describe the techniques of performing coronary CT angiography. What do you understand by calcium score and what is its clinical relevance? 2+5+3
7. What are various interventional techniques available to treat hepatic malignancies? Discuss the role of chemoembolisation and radio-embolisation in hepatic malignant lesion. 3+(4+3)
8. 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 for PET scanning. 2+(4+4)
9. Write short notes on: 5+5
 - a) Flat Panel Detector
 - b) HIFU – clinical indications & utility
10. Write short notes on: 5+5
 - a) Mobile CT scanner
 - b) Renal denervation for renovascular hypertension

PAPER V

PART A

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| 1. Describe with suitable diagram(s) the anatomy of peri and paranephric spaces. Enumerate tumours of perinephric spaces. Describe imaging features in any one of these. | 4+2+4 |
| 2. Describe penile circulation. What are the causes of male impotence? Discuss the role of Color Doppler imaging in impotence. | 4+2+4 |
| 3. 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 |
| 4. Discuss the pathophysiology of osteomalacia. Describe imaging features in primary hyperparathyroidism. | 5+5 |
| 5. 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 |

PART B

Write short notes on:

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| 6. Radiological findings in:
a) Sequestration of lung
b) Pulmonary hypertrophic osteoarthropathy | 5+5 |
| 7. a) MR-PET
b) Dose reduction techniques in MDCT | 5+5 |
| 8. a) AERB guidelines for installation of X-ray equipment
b) Thermoluminescent dosimeter | 5+5 |
| 9. a) Quality of radiologic images
b) Different types of x-ray tubes | 5+5 |
| 10. Describe in detail various requirements of Quality Control Programme in Radiology Department. | 10 |

