

DNB RADIOLOGY JUNE 2017

PAPER – I

RDG/J/17/40/I

Time : 3 hours Max.

Marks : 100 Write short
notes on:

1. A 40 year old man on high dose steroids for interstitial lung disease presents with pain in the right hip with inability to walk:

- a) What possibilities would you consider?
- b) What imaging protocol would you adopt for this patient?
- c) Enumerate the key imaging findings for the likely entity.

2+3+5

2. A 26 year old female presents with intractable epilepsy and is being worked up for possible surgery:

- a) Epilepsy protocol for imaging this patient.
- b) Radiological features of hippocampal sclerosis. 5+5
- 3. a) Anatomy of osteomeatal unit, any two variants.
- b) Radiological features of fungal sinusitis on CT & MRI.

3+(2+5)

4. a) How would you evaluate a bone tumour on a plain radiograph?

b) Radiological features of chondroid tumours on plain radiograph. 7+3

5. A mother of a 2 year old child notices 'something white' in one eye. The ophthalmologist refers the child for imaging:

- a) What possibilities would you consider?
- b) What imaging protocols would you follow?
- c) Enumerate key imaging findings for one most likely entity.

3+3+4

6. a) Boundaries and contents of the carotid space of the neck.

6+4

b) Imaging findings of vagal schwannoma.

7. A 45 year old lady presents with bone pain, renal calculi, weakness and psychiatric symptoms. X-Ray hand shows subperiosteal resorption in middle phalanx: a) What possibilities would you consider?

- b) How will this patient be investigated radiologically further.
- c) Enumerate key imaging findings of the likely entity.

1+3+6

8. A 30 year old man who has HIV and at present has low CD4 count presents with gradual cognitive impairment and is referred for imaging: a) What are the likely possibilities? b) Radiological findings in progressive multifocal leukoencephalopathy.

4+6

9. a) Differences between pyogenic and tubercular osteomyelitis.

b) Imaging findings of tubercular spondylitis in MRI.

5+5

10. A 54 year old man presents to the hospital with history of sudden severe headache. There is no history of trauma or intoxication: a) What possibilities would you consider?
b) Imaging features for the most likely diagnosis in this patient.

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c) Radiological intervention that may be required for this patient.

2+4+4

PAPER II

RDG/J/17/40/II

Time : 3 hours

Max. Marks : 100

Write short notes on:

1. a) Pathophysiology of pulmonary edema.

b) Radiographic and CT signs of pulmonary edema.

4+(3+3)

2. CT imaging features of:

a) Constrictive pericarditis.

b) Pulmonary sequestration

5+5

3. A 9 year old girl presents with acute right lower quadrant abdominal pain:

a) Enumerate the likely causes.

b) Imaging features of the two most common conditions.

4. Imaging features of:

2+(4+4)

a) Tetralogy of Fallot (TOF)

b) Ebstein's anomaly

5+5

5. a) Technique of High Resolution Computed Tomography (HRCT) of the lung.

b) Radiological features of usual interstitial pneumonia.

c) How does it differ from non-specific interstitial pneumonia?

3+4+3

6. Radiological findings in:

a) Chance fracture

b) Lunate and perilunate dislocations.

5+5 7. Role of imaging in a patient with suspected splenic trauma.

10

8. Colour Doppler flow imaging of carotid artery.

10

9. a) Indications and technique of CT coronary angiography.

b) Imaging features of lymphangitis carcinomatosa.

5+5

10. a) Imaging algorithm in a 40 year old man with hemoptysis.

b) Role of interventional radiology in this case.

5+5

PAPER – III

RDG/J/17/40/III

1. a) Based on the anatomic location of the bleeding site, how is gastrointestinal bleeding typically categorized?

b) How does multi-detector computed tomographic angiography help in the localization and characterization of acute gastrointestinal bleeding?

2+8

2. Role of contrast enhanced ultrasound in the imaging of nodules in a cirrhotic liver, and the algorithm of how it can be integrated to be a part of a multimodality imaging approach. 5+5

3. a) Enumerate the venous tributaries constituting the portal venous system and the sites of portosystemic anastomoses.

b) Sonographic and CT imaging features of portal hypertension.

(1+2)+(4+3)

4. a) Multi-detector computed tomography (MDCT) features of acute intestinal ischemia.

b) How does MDCT contribute to appropriate treatment planning and provides important prognostic information?

4+6

5. CT imaging features of acute pancreatitis alongwith the revised Atlanta system of classification.

5+5 6. A 52 year old road traffic accident victim is brought to you from the casualty with history of frank haematuria.

a) How would you evaluate this patient?

b) What are the possibilities with their key radiological findings?

3+7 7. A 66 year old patient has undergone a renal transplant.

Enumerate the potential complications that may occur in this patient. What is the role of Colour Doppler and ultrasound in the imaging of these complications?

3+7

8. 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. a) What is the likely diagnosis?

b) How would you evaluate this patient?

c) Mention the possibilities with their key radiological findings.

2+2+6

9. a) How would you decide on the amnionicity and chorionicity in a multiple pregnancy?
- b) Enumerate the complications that may occur in a twin pregnancy.
- c) Radiological findings in twin-twin transfusion syndrome.

3+3+4

10. a) Enumerate the various Müllerian duct anomalies along with the line diagrams.
- b) Imaging algorithm and diagnostic features of the various types of Müllerian duct anomalies.

5+5

PAPER IV

RDG/J/17/40/IV

Time : 3 hours Max.

Marks : 100 Write short notes on:

1. a) Define the PC & PNDT Act, its objectives, its target bodies and requirements.

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- b) Enumerate the essential information to be filled in Form F and the documents to be attached along with.

5+5

2. a) Delineate the boundaries of the middle cranial fossa.

- b) Enumerate the anatomical structures found in the middle cranial fossa.

4+6

3. a) Enumerate the constituents of the ultrasound gel.

- b) Identify the usefulness of each constituent.

- c) Explain the principle behind the usage of ultrasound gel in sonographic imaging.

3+3+4

4. With reference to diagnostic imaging, explain the following terms stating their clinical significance:

- a) Signal to noise ratio(SNR)

- b) Shear wave elastography

5+

5. a) Name the essential drugs that must be kept in readiness in a radiology room to tide over the contrast reactions caused by iodinated contrast agents.

- b) State their usage in diverse contrast reaction related emergencies citing their dosage and mode of administration.

3+7

6. a) What is the role of nuclear medicine imaging techniques in the investigation of neuroendocrine tumours?

- b) Pitfalls of these techniques.

7+

3 7. a) Sensitivity, specificity, positive predictive value and negative predictive value of a diagnostic test.

b) Quote an example using these values for any radiological test.

5+

5 8. Basic principles of Dual Energy Computed Tomography and its clinical applications in abdominal imaging.

4+

6 9. Enumerate the current interventional radiology techniques being employed in the management of acute massive pulmonary thromboembolism. Outline the merits and limitations of each.

4+

6 10. Recent developments in non-invasive clinical lymphatic imaging techniques capable of visualizing the central lymphatic anatomy and flow dynamics.

10

**DNB RADIOLOGY JUNE 2018
RADIODIAGNOSIS PAPER-I**

TIME: 3 HOURS

RDG/J/18/40/I

MAX. MARKS: 100

Write short notes on: **PART**

A

1. a) Magnetic resonance imaging findings in a patient suspected to have acute ischemic cerebral stroke.

b) Endovascular treatment in acute ischemic cerebral stroke as per the current evidence.

6+4

2. Enumerate the various types of primary traumatic lesions in head injury. State the indications for computed tomography (CT) and that for magnetic resonance imaging (MRI) in head trauma.

3+7

3. A middle aged lady presents with a breast mass. What are the possibilities? Discuss the specific mammographic characteristics which can help distinguish between the benign and malignant breast lesions.

2+8 4. Enumerate the cystic lesions of jaw. Outline the radiological algorithmic approach towards the diagnosis of such a lesion.

4+6

5. Enumerate the various labral injuries of shoulder. Describe the magnetic resonance imaging findings in any two such injuries.

2+(4+4)

PART B

6. Enumerate the possible causes of a jugular foramen mass.

Describe the magnetic resonance imaging features in any two such lesions.

- 2+(4+4)
7. Enumerate the causes of acute scrotal pain. Discuss the specific sonographic findings which will come in useful in making the diagnosis. 3+7
8. Enumerate the various magnetic resonance imaging (MRI) sequences which can help in the evaluation of a cerebral tumour. Describe the key MRI features of a high grade glioma highlighting the significance of each of these sequences. 2+8
9. Enumerate the causes of childhood proptosis. Describe the characteristic CT findings in any two such conditions which may present with childhood proptosis. 4+3+3
10. Enumerate the causes of periosteal reaction in childhood. Discuss the radiological approach towards its diagnosis. 3+7

RADIODIAGNOSIS PAPER-II

TIME: 3 HOURS RDG/J/18/40/II

MAX. MARKS: 100

Write short notes on:

PART A

1. Explain the role of imaging in the evaluation of a patient with varicose veins. Outline the various radiological interventional approaches to the management of varicose veins. 6+4
2. Describe the characteristic radiological features which define pulmonary tuberculosis. What are the possible complications of a cavitary disease?
3. Enumerate the various left to right shunts. Discuss the ⁸⁺² characteristic radiological features which can help define them.
4. Discuss the diagnostic imaging findings in stenosis of internal ²⁺⁸ carotid artery at its origin. What is the role of an interventional radiologist in the management of such a case?
5. Enumerate the predisposing conditions which can lead to ⁷⁺³ aspiration pneumonia. What are its characteristic radiologic features?

4+6

PART B

6. Enumerate the predisposing factors which can lead to the respiratory distress syndrome of newborn. Describe its radiological findings and state its acute and subacute complications.
7. Discuss the role of imaging in the evaluation of a patient with acute lower limb ischemia. What is the role of an interventional radiologist in the management of such a case?
8. Enumerate the possible causes of a sudden unilateral loss of vision. Discuss the role of a radiologist in the diagnosis of any two such conditions which may present in this manner.
9. Describe the CT and MR imaging features in malignant mesothelioma. How is its staging carried out?
10. Enumerate the various types of aortic dissection. Describe its contrast enhanced computed tomography and magnetic resonance imaging findings stating their respective advantages and limitations.

7+3

2+8

RADIODIAGNOSIS PAPER-III

TIME: 3 HOURS

RDG/J/18/40/III

MAX. MARKS: 100

Write short notes on: **PART**

A

1. Enumerate the causes of acute intestinal obstruction. Describe the role of a radiologist in its diagnosis.
2. Describe the ultrasound and Doppler evaluation of a suspected case of portal hypertension. Outline the indications and procedure of trans jugular intrahepatic portocaval shunt.
3. Define the role of imaging in the evaluation of a patient with perianal discharge. Draw a labelled diagram of coronal section of anorectal junction region, depicting the internal and external sphincter, and portraying the types of anorectal fistulae.
4. Enumerate the types of congenital malrotation of gut. Describe the embryological basis of their occurrence.
5. Discuss the physical principle of magnetic resonance cholangiopancreatography. Describe the various anatomical variants of the biliary tree.

PART B

6. Enumerate the possible acute complications which may occur in a renal transplant recipient. Define the role of a radiologist in their diagnosis.
7. Enumerate the causes of a unilateral adnexal mass. Discuss the role of a radiologist in diagnostic evaluation of such a patient.
8. Enumerate the causes of menorrhagia in a perimenopausal 2+8 patient. Discuss the role of a radiologist in diagnostic evaluation of such a patient.
9. Enumerate the congenital foetal cardiac anomalies that can be detected on antenatal ultrasound examination. Describe the ultrasound appearance of any two such conditions.
10. a) Intrauterine image-guided interventions which can be 2+(4+4) carried out in pregnancy.
b) Role of Doppler ultrasound in the evaluation of foetal middle cerebral artery.

2+8

2+8

6+4

RADIODIAGNOSIS PAPER-IV

TIME: 3 HOURS
MAX. MARKS: 100

RDG/J/18/40/IV

Write short notes on:

PART A

1. Draw labelled diagram(s) of the suprahyoid neck spaces.
2. A patient develops severe hypotension immediately following the administration of an iodinated water-soluble contrast medium. How would you manage such a patient?
3. Define the terms "Roentgen", "Rad", "Gray" and "Sievert". State the acceptable upper limits of radiation exposure in a radiation worker as per the AERB guidelines.

10

intravenous

10

8+2

4. What are the types of nephrotoxicity reactions associated with

water-soluble contrast media and what are their defining

features?

What are the proposed mechanisms which produce
nephrotoxicity?

contrast induced

6+4

5. Discuss the pre-procedure work-up, procedure, and the postprocedure
in a patient scheduled to undergo a trucut/core biopsy for a hepatic mass lesion.

care

3+4+3

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PART B

6. State the age of appearance and fusion of various epiphyses around
the elbow joint on plain

radiographs in a male subject.

Discuss how radiography can
help in

gender determination in an adult subject.

5+5

7. Describe the physical principle behind various diffusion weighted imaging techniques.
Discuss their clinical usefulness. 4+6

8. Define the statistical terms "accuracy", "positive predictive value" and "negative
predictive value", citing their clinical usefulness. 4+3+3

9. Enumerate the constituents of ultrasound jelly. State the significance of each
constituent.

10

10. Enumerate the MR contrast agents. Discuss their potential adverse effects.

3+7
