

# DNB RADIOLOGY JUNE 2014

## PAPER I

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| 1. What is the basic difference between Neurofibromatosis (NF) Type I and Type II? Discuss the imaging findings in NF II. Briefly describe extra skeletal manifestations and associations of neurofibromatosis.                  | 4+3+(2+1) |
| 2. Enumerate the infrahyoid neck spaces. Discuss the imaging features of pathologies of the carotid space.                                                                                                                       | 4+6       |
| 3. Describe with a diagram the cerebral venous system. Briefly discuss the causes and imaging features of cortical venous thrombosis.                                                                                            | 3+(2+5)   |
| 4. A 40 year old female has presented with loss of vision and instability in gait. Discuss the differential diagnosis and MRI findings in the most probable cause. What is the role of diffusion tensor imaging in this patient. | (2+6)+2   |
| 5. How would you evaluate a patient of hyperparathyroidism on imaging? Enumerate the findings on plain films, CT and scintigraphy.                                                                                               | 4+(2+2+2) |
| 6. Enumerate the causes of pulsatile exophthalmos. Discuss the imaging features of any two conditions.                                                                                                                           | 2+(4+4)   |
| 7. Enumerate the haemopoietic disorders which cause marrow changes. Discuss the MR imaging findings on any 2 of these marrow disorders.                                                                                          | 2+(4+4)   |
| 8. Discuss the imaging features of avascular necrosis of the hip and its differential diagnosis.                                                                                                                                 | 7+3       |
| 9. What are the causes and imaging features of hypertrophic osteoarthropathy?                                                                                                                                                    | 3+7       |
| 10. A 10 year old child has presented with swelling of the mandible. Enumerate the causes and discuss the imaging findings of any two.                                                                                           | 2+(2+6)   |

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## PAPER II

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| 1. Define solitary pulmonary nodule. Enumerate its causes. Discuss the radiological work up of a solitary nodule highlighting the features which enable to differentiate between benign and malignant nodules.                                                                                                                                             | 1+2+7     |
| 2. A 30 year old female patient presented with history of cough and one episode of haemoptysis. Her chest X-ray showed a cavitory lesion measuring 3cm in left mid zone. Enumerate the possible causes. How will you proceed with radiological evaluation in this case?                                                                                    | 2+8       |
| 3. 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 fifty year old male. Describe the imaging findings in any two pathological causes.                                                                                                          | 2+2+(3+3) |
| 4. A twenty year old female with history of fever showed an anterior mediastinal and right hilar mass on chest X-ray. 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     |
| 5. 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 forty year old patient.                                                                                                                                                        | 3+1+(3+3) |
| 6. Enumerate various causes of bilateral weak femoral arterial pulsations in a twenty year old female patient. Describe the imaging findings in any two important causes.                                                                                                                                                                                  | 2+(4+4)   |
| 7. Enumerate the causes of pneumoperitoneum with peritonitis in a thirty year old male patient. Describe the findings which can be seen in supine abdominal X-Ray in a case of pneumoperitoneum. Discuss the CT findings which may be seen in bowel ischemia due to acute superior mesenteric venous thrombosis.                                           | 2+2+6     |
| 8. A ten year old female child presents to the Emergency department with acute onset right iliac fossa pain. Enumerate possible causes. Discuss the radiological work up highlighting imaging findings in two common conditions.                                                                                                                           | 2+8       |
| 9. A twenty seven year 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 two common conditions which may cause above symptoms.                                                                                           | 2+4+4     |
| 10. Enumerate the causes of Aortic Aneurysm in a thirty year old male patient. How will you differentiate between these various causes? Discuss the findings and information you shall highlight in a case which is to be managed using an aortic stent graft.                                                                                             | 2+5+3     |



### PAPER III

1. 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 tuberculosis. 2+5+3
2. Enumerate various conditions associated with polypoidal lesions in the large bowel. How will you distinguish between benign and malignant polyp on imaging? Discuss the merits and demerits of virtual CT colonoscopy in a case of suspected familial polyposis coli. 2+4+4
3. Enumerate the causes of arterial phase enhancing focal lesions in the liver. Discuss the role of MDCT and MRI in differential diagnosis of these lesions. 2+(4+4)
4. A 40 year old female with pain abdomen is found to have a cyst in the body of pancreas on ultrasound. Enumerate various possible causes. Discuss the imaging algorithm you would follow for arriving at diagnosis in this case. 2+8
5. A forty year old female patient presented with complaint of vague right lumbar pain. An ultrasound 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 and findings in various lesions. 2+(2+6)
6. Enumerate the causes of a palpable lumbar mass in a five year old child. Discuss the algorithmic approach you would use to arrive at diagnosis in this case. 2+8
7. 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)
8. Define Intra Uterine Growth Retardation (IUGR). Enumerate its causes. Discuss the role of imaging in management of IUGR. 1+2+7
9. Enumerate and classify various congenital anomalies of the uterus. Discuss the role of ultrasound and MRI in their diagnosis, highlighting their advantages and limitations. 3+7
10. Enumerate various M.R.I sequences used for evaluation of the uterus, highlighting their specific role. Describe the role of MRI in suspected carcinoma cervix along with the MR findings. 4+6

## PAPER IV

### PAPER – IV

RDG/J/14/40/IV

Time : 3 hours

Max. Marks : 100

#### Important instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

1. 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
2. What are the cardinal principles of radiation protection? What methods would you use to decrease exposure in fluoroscopy? 6+4
3. a) Personal Dosimeters 5+5  
b) Tissue harmonic imaging
4. a) MR contrast for liver imaging 5+5  
b) Contrast induced nephropathy and methods to prevent it.
5. a) Imaging of hemobilia and interventions. 5+5  
b) Principles and applications of RF ablation
6. a) CT perfusion in acute stroke 5+5  
b) Principles of functional MR imaging
7. a) Renal isotope scanning 5+5  
b) Tomosynthesis in mammography
8. Techniques of ultrasound elastography and its applications. 5+5
9. Advantages and disadvantages of computed radiography and direct digital radiography. 10
10. Advances in CT technology to decrease the radiation dose in children. What is CT Dose Index (CTDI)? 8+2