FINAL EXAM NATIONAL BOARD OF EXAMINATIONS DECEMBER 2018

RADIO DIAGNOSIS

TIME: 3 HOURS
MAX. MARKS: 100

- Answers to questions of Part A and part strictly attempted in separate answer sheets and the

PAPER-I

RDG/D/18/40/I

IMPORTANT INSTRUCTIONS

- **This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.**
- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. Enumerate the various causes of bilateral T2 hyper intense 4+6 lesions in basal ganglia. Describe the neuroimaging findings in Wilson's disease.

2. a) Role of magnetic resonance imaging in head injury. 5 + 5
   b) Role of diffusion weighted imaging in intracranial infections.

3. a) Draw a labelled diagram of a coronal section through 5 + 5 the "cavernous sinus".
   b) Discuss the differential diagnosis of cavernous sinus lesions.

RADIO DIAGNOSIS

Please read carefully the important instructions mentioned on Page '1'

4. Draw a labelled diagram depicting the normal anatomy of 5+5 orbit. Discuss the imaging findings of orbital pseudotumour and thyroid ophthalmopathy.

5. a) Computed tomographic and magnetic resonance imaging findings in mycotic sinusitis. 5 + 5
   b) Imaging features of orbital involvement in Neurofibromatosis type 1.

P.T.O.

PAPER-I

B are to be
main + supplementary answer sheets used for each part must be tagged separately.

- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. Depict the anatomy of maxillary sinus using a labelled 5 + 5 diagram. Discuss the role of imaging in the diagnosis of mucocele of maxillary sinus.

7. a) Explain the role of HRCT temporal bone and MRI in the workup of a case of congenital sensory neural hearing loss (SNHL) for a possible cochlear implant. 4+6

   b) Enumerate the key CT imaging features which must be commented upon from the perspective of a surgeon about to undertake a cochlear implant.

8. Explain what you understand by the term BIRADS. 3+2+5 Enumerate the indications of magnetic resonance mammography. Explain the technique of magnetic resonance mammography.

RADIO DIAGNOSIS

TIME: 3 HOURS
MAX. MARKS: 100

- Answers to questions of Part A and part strictly attempted in separate answer sheets and the

9. Enumerate the causes of osteoporosis. Discuss the role of 4+6 plain radiography in the evaluation of skeletal manifestations of hyperparathyroidism.

10. a) Explain the role of plain radiography in various diseases 5+5 of the joints.
    b) What is the role of ultrasound of joints in the evaluation of a case of rheumatoid arthritis?

****

PAPER-II

RDG/D/18/40/II

IMPORTANT INSTRUCTIONS

- **This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.**
- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

RADIO DIAGNOSIS

Please read carefully the important instructions mentioned on Page '1'

PART A

2-

1. Enumerate the causes of bilateral lung cysts in an adult 5+5 and discuss the role of HRCT in the differential diagnosis.

2. Enumerate the causes of lobar collapse. Describe the 5+5 various chest radiographic findings of left upper lobe and left lower lobe collapse.

3. Draw a line diagram to define the radiological anatomy of 5+5 mediastinum. Discuss the differential diagnoses of anterior mediastinal masses based on computed tomography examination findings.

4. Enumerate the causes of bilateral upper lobe fibrosis. 4+6 Discuss the HRCT findings in intrathoracic sarcoidosis.

5. Enumerate the various lines and tubes encountered on 5+5 chest radiographs in patients admitted to the intensive care unit (ICU). Discuss the imaging findings in pulmonary oedema.

P.T.O.

PAPER-II

B are to be
main + supplementary answer sheets used for each part must be tagged separately.

- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

RADIO DIAGNOSIS

TIME: 3 HOURS
MAX. MARKS: 100

6. a) Describe the technique of multi-detector CT pulmonary 5+5 angiography (MDCTPA) in a suspected patient of acute pulmonary thromboembolism. b) Enumerate the false positive and false negative CT Pulmonary Angiography (CTPA) findings which can influence the assessment in such a patient suspected with pulmonary thromboembolism.

- Answers to questions of Part A and part strictly attempted in separate answer sheets and the

7. a) Myocardial viability imaging. 5+5
   b) Chest radiograph findings in mitral valve disease

8. a) Imaging features in Tetralogy of Fallot. 5+5
   b) Imaging features in partial anomalous pulmonary venous drainage.

9. Enumerate the benign pulmonary tumours and discuss their 4+6 differential diagnosis.

10. Outline the following using an algorithmic sequence: 5+5
    a) Imaging approach in a patient with blunt trauma to chest.
    b) Imaging approach in a patient with blunt trauma to abdomen.

****

RADIO DIAGNOSIS

Please read carefully the important instructions mentioned on Page '1'

2-

RADIO DIAGNOSIS

TIME: 3 HOURS
MAX. MARKS: 100

PAPER-III

RDG/D/18/40/III

IMPORTANT INSTRUCTIONS

This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.

- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. Describe the role of conventional radiography and computed tomography in the evaluation of a suspected case of acute large bowel obstruction. 5+5

2. a) Imaging in esophageal motility disorders. 5+5
   b) Imaging in post-operative stomach.

3. Enumerate the various causes of strictures in the small intestine. Describe the imaging findings in Crohn's disease of the small intestine. 5+5

- Answers to questions of Part A and part strictly attempted in separate answer sheets and the

4. a) Role of magnetic resonance imaging in the evaluation of hemochromatosis and iron overload states. 5+5
   b) Role of sonographic and Doppler evaluation in a patient of portal hypertension.

RADIO DIAGNOSIS

Please read carefully the important instructions mentioned on Page '1'

5. Describe the technique of multiphasic CT scan study of 4+6 liver. Discuss the imaging findings of hepatoma.

P.T.O.

PAPER-III

B are to be
main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. Describe the indications, contraindications and technique 2+2+6 of CT urography.

7. Describe the role of ultrasound, computed tomography 2+2+6 and magnetic resonance imaging in the diagnosis and staging of endometrial carcinoma.

8. Describe the indications, contraindications, technique 2+2+4+2 and complications of hysterosalpingography.

9. a) PCPNDT Act. 5+5
   b) Ultrasound findings in a 12 week foetus with Down syndrome.

RADIO DIAGNOSIS

TIME: 3 HOURS
MAX. MARKS: 100

10. a) Imaging findings in abruptio placentae. 5+5
    b) Imaging findings in molar pregnancy.

****

PAPER-IV

RDG/D/18/40/IV

IMPORTANT INSTRUCTIONS

This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.

- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. Discuss the physical principles of the ultrasound contrast media. 5+5 Enumerate the safety issues and recommendations regarding their clinical use.

2. Define 4DCT technique and enumerate the situations in 2+3+5 which it is used and discuss in detail the technique of 4DCT of parathyroid.

RADIO DIAGNOSIS

Please read carefully the important instructions mentioned on Page '1'

- Answers to questions of Part A and part strictly attempted in separate answer sheets and the

3. Discuss the factors which tend to affect the image quality 5+5 on a computed tomography (CT) scan. Describe the diverse radiation dose reduction strategies which can be employed while carrying out a thoracic CT scan.

4. Enumerate the various post-processing techniques which 5+5 can be used during a thoracic computed tomography (CT) examination. State the clinical utility of each of these post- processing techniques citing examples.

5. Enumerate the various pulse sequences used in magnetic 5+5 resonance imaging. State the clinical utility of each pulse sequence citing examples. P.T.O.

FINAL EXAM NATIONAL BOARD OF EXAMINATIONS DECEMBER 2018

RADIO DIAGNOSIS

TIME: 3 HOURS
MAX. MARKS: 100

POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION

HALL.

RADIO DIAGNOSIS
PAPER-IV

Please read carefully the important instructions mentioned on Page '1'

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. Describe the basic principles of PET-CT. Discuss the 5+5 advantages and disadvantages of PET-MRI over PET- CT.

7. Enumerate the various liquid embolic agents used in 4+6 interventional Radiology. Discuss the role of interventional Radiologist in the management of Cerebral Arteriovenous malformations.

8. Discuss the indications, pharmacokinetics, and method of 3+3+4 iodine131 metaiodobenzylguanidine scintigraphy.

9. Describe the basic physical principles, indications, 3+2+2+3 contraindications and technique of radiofrequency ablation of liver tumours.

10. a) Kappa measure (in terms of statistical analysis of 5+5 medical data).
    b) The Receiver Operating Characteristics (ROC).

****

POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL.

FINAL EXAM
DECEMBER 2019

NATIONAL BOARD OF EXAMINATIONS

RADIODIAGNOSIS
PAPER-I

TIME: 3 HOURS
MAX. MARKS: 100

RDG/D/19/40/I

IMPORTANT INSTRUCTIONS

- **This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.**
- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. a) Draw a labelled diagram of neck spaces. 6+4
   b) Enumerate lesions of parapharnygeal spaces.

2. a) Describe in brief revised WHO classification of brain tumours. 7+3
   b) Enumerate primitive Neuroectodermal tumours of the brain.

3. a) A 45-year-old female came with a lump in unilateral breast. How will you evaluate this patient on imaging? 6+4
   b) Describe BI-RADS classification used for reporting of mammogram.

4. a) Enumerate various causes of hemolytic anemia. 2+(5+3)
   b) Describe the imaging findings in a case of thalassemia major. How will you differentiate it from sickle cell disease on imaging?

5. a) State the distinguishing features of intramedullary, extramedullary-intradural and extradural spinal lesions on MRI. 6+4
   b) Discuss briefly the differential diagnosis of intramedullary spinal lesions.

P.T.O

RADIODIAGNOSIS
PAPER-I

Please read carefully the important instructions mentioned on Page '1'

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. a) Describe in brief anatomy of the shoulder joint. 4+6
   b) Briefly state various MR sequences and planes used to evaluate shoulder joint on MR (Magnetic resonance) imaging.

7. a) What are the causes of hyperparathyroidism? 4+6
   b) Enumerate the finding on Plain film, CT and scintigraphy of primary hyperparathyroidism.

8. a) Enumerate causes of unilateral proptosis. 4+(3+3)
   b) Describe briefly imaging findings of optic gliomas and Caroticocavernous fistula.

9. A 40 year old female has presented with loss of vision and instability in gait. 6+4
   a) Discuss the differential diagnosis and MR findings of the most probable cause.
   b) What is the role of Diffusion Tensor Imaging in this patient?

10. A 15-year boy presents with localized swelling and pain of 2 months duration involving right lower thigh. 4+6
   a) What will be its differential diagnosis?
   b) Discuss Conventional Radiographic, CT and MRI features of the commonest primary malignant bone tumour in this age.

****

FINAL EXAM
DECEMBER 2019

NATIONAL BOARD OF EXAMINATIONS

RADIODIAGNOSIS
PAPER-II

TIME: 3 HOURS
MAX. MARKS: 100

RDG/D/19/40/II

IMPORTANT INSTRUCTIONS

- **This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.**
- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. a) Describe anatomy of lung on High Resolution Computed Tomography (HRCT). 3+3+4
   b) What are the common patterns of imaging features seen in various interstitial lung diseases (ILD)?
   c) Describe HRCT features of Usual Interstitial Pneumonia (UIP).

2. A 25-year-old presented with life threatening hemoptysis. 2+(4+4)
   a) Draw an algorithm to outline radiological management of such a case.
   b) Discuss in brief imaging features on conventional radiology, CT scan and MRI; and role of interventional radiology.

3. a) Describe the arterial anatomy of carotid vascular system with the help of labelled diagram. 4+6
   b) Discuss the role of Ultrasound and Color Doppler imaging in evaluation of extra cranial carotid occlusive disease.

4. a) What do you understand by the term extramedullary hematopoiesis? 2+3+5
   b) Enumerate its causes.
   c) Discuss its plain film and cross sectional imaging findings.

5. a) Enumerate the causes of acute respiratory distress syndrome. 5+5
   b) Give in detail radiological management of aortic dissection.

P.T.O

RADIODIAGNOSIS
PAPER-II

Please read carefully the important instructions mentioned on Page '1'

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. a) Enumerate causes of thoracic aortic aneurysm in a patient below the age of 40. 3+3+4
   b) Briefly describe the role of imaging in the diagnosis of these patients.
   c) Describe radiological management of these patients.

7. a) Describe the normal anatomy of coronary arteries. 4+6
   b) Discuss the role of MDCT in coronary artery diseases.

8. a) Enumerate various tumours of heart. 5+5
   b) Describe the imaging features in myxoma of heart.

9. a) Discuss the differential diagnosis in a 7-year old boy presenting with a pulsatile swelling of the right forearm. 4+6
   b) Describe the imaging findings with Doppler and MRI.

10. a) Venous anatomy of lower limb with the help of a diagram. 4+6
    b) Technique of Color Doppler Imaging of lower limb veins and imaging features of deep venous thrombosis (DVT).

****

FINAL EXAM
DECEMBER 2019

NATIONAL BOARD OF EXAMINATIONS

RADIODIAGNOSIS
PAPER-III

TIME: 3 HOURS
MAX. MARKS: 100

RDG/D/19/40/III

IMPORTANT INSTRUCTIONS

- **This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.**
- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. a) Describe the anatomy of retroperitoneum on imaging. 4+6
   b) Describe the radiological findings of 2 common non- tumour conditions occurring in the retroperitoneum.

2. a) Name the diseases associated with H.pylori infection. 4+6
   b) Briefly discuss Barium meal features of benign and malignant gastric ulcers supported by a suitable diagram.

3. a) Mention the various interventional techniques used in the management of hepatocellular carcinoma (HCC). 4+6
   b) Briefly describe the guidelines outlining the criteria of response assessment of hepatocellular carcinoma.

4. a) What are the causes of vesico-ureteric reflux? 5+5
   b) Describe the imaging in vesico-ureteric reflux along with its grade with well labelled diagrams.

5. a) Enumerate causes of Gastroduodenal artery bleed. 3+3+4
   b) Mention current imaging techniques for its diagnosis.
   c) Describe Interventional Radiology techniques used in its management.

P.T.O

RADIODIAGNOSIS
PAPER-III

Please read carefully the important instructions mentioned on Page '1'

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. a) Enumerate causes of painless hematuria in a 55-year-old patient. 4+(3+3)
   b) Discuss the imaging features and role of Interventional Radiology in any two pathologies.

7. a) Enumerate various complications of acute and chronic pancreatitis. 3+3+4
   b) Describe in brief their imaging features.
   c) Describe in brief their management by Interventional Radiologist.

8. a) Enumerate various color Doppler parameters used in IUGR. 4+4+2
   b) Briefly discuss their role in IUGR.
   c) Mention the significance of aortic isthmic index.

9. A 36-year-old male presented to emergency department with blunt abdominal trauma. 5+5
   a) Describe in brief imaging findings requiring urgent intervention.
   b) Discuss MDCT findings in hepatic injury.

10. a) Describe penile circulation. 3+3+4
    b) What are the causes of male impotence?
    c) Role of Color Doppler imaging in impotence.

****

FINAL EXAM
DECEMBER 2019

NATIONAL BOARD OF EXAMINATIONS

RADIODIAGNOSIS
PAPER-IV

TIME: 3 HOURS
MAX. MARKS: 100

RDG/D/19/40/IV

IMPORTANT INSTRUCTIONS

- **This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.**
- **Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.**
- **Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.**
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:

PART A

1. Discuss indications, technique, management and complications of bronchial artery embolization. 2+2+3+3

2. a) Enumerate various ultrasonic contrast media. 4+3+3
   b) Describe their principle.
   c) Describe in brief their clinical application in evaluation of liver mass lesions.

3. a) Discuss the role of Scintigraphy in cardiac imaging. 4+3+3
   b) Describe various artifacts and interpretation pitfalls associated with this technique.
   c) Describe its role in brief in myocardial perfusion and viability.

4. a) Describe principles and techniques of USG Elastography. 6+4
   b) Describe in detail clinical applications of compression Elastography.

5. a) Describe the basis of BOLD Imaging technique. 4+6
   b) Describe its utility and limitations.

P.T.O

RADIODIAGNOSIS
PAPER-IV

Please read carefully the important instructions mentioned on Page '1'

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

PART B

6. a) Describe MR contrast media for liver imaging. 4+3+3
   b) What is contrast induced nephropathy (CIN)?
   c) What will you do to prevent CIN?

7. a) Describe the principle of Dual Energy CT. 5+5
   b) Describe its various applications.

8. a) What is p value? What is its significance and clinical application in research? 3+7
   b) What is sensitivity, specificity, positive predictive value, negative predictive value and accuracy?

9. a) What do you mean by AERB, eLORA and ALARA? 4+6
   b) How will you minimize Radiation Hazards?

10. a) Artificial Intelligence in Health care. 5+5
    b) Discuss its advantages and disadvantages.

****