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**MANIPAL ACADEMY OF HIGHER EDUCATION**

**MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2019**

**SUBJECT: PAPER I: BASIC SCIENCES RELATED TO RADIOLOGY (IT CONSISTS OF ANATOMY, PATHOLOGY, BASIC AND RADIATION PHYSICS, IMAGING TECHNIQUES AND DARK ROOM PROCESSING)**

Tuesday, April 02, 2019

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Describe in brief components & function of a rotating X-ray tube. Draw its neat diagram & label its components.

(15 marks)

2. What are isotopes? What is the principle of SPECT? Mention the common application of radionuclide isotopes in diagnostic radiology.

(15 marks)

3. **Short questions:**

3A. Scattered Radiation.

3B. CT numbers & CT windowing.

3C. Tissue harmonic imaging.

3D. Hazards and safe practices in MRI.

3E. Automated exposure control.

3F. Radiological anatomy of duodenum and relations.

3G. Maximum permissible dose.

3H. Intensifying screens.

3I. Bone densitometry.

3J. Paramagnetic MR contrast media.

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2019**  
**SUBJECT: PAPER II: CVS, RESP, GIT (INCLUDING HEPATO BILIARY),**  
**ENDOCRINE, CHEST, MAMMOGRAPHY**

Wednesday, April 03, 2019

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the question.**

✍ **Long questions:**

1. Discuss the role of a radiologist in management of a patient with vascular claudication pain.  
(15 marks)
2. Describe radiographic divisions of mediastinum. Discuss the imaging differentiation of posterior mediastinal masses.  
(15 marks)

3. **Short questions:**

- 3A. Mention types of endoleak in post aortic aneurysm repair.
- 3B. Classification of pulmonary vasculitis. Imaging of Wegener's granulomatosis.
- 3C. Meconium ileus.
- 3D. CT Imaging of hepatocellular Carcinoma.
- 3E. Recommendations for breast screening.
- 3F. Pheochromocytoma.
- 3G. Gastro intestinal scintigraphy.
- 3H. Thoracic aortic aneurysm.
- 3I. Bronchopleural fistula.
- 3J. Liver metastasis.

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**

**MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2019**

**SUBJECT: PAPER III: GENITOURINARY, RETROPERITONEUM, CNS INCLUDING HEAD AND NECK, MUSCULOSKELETAL SYSTEM, OBST. & GYNAE, ENT AND EYE AND INTERVENTIONAL RADIOLOGY**

Thursday, April 04, 2019

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Questions:**

1. Classify posterior fossa tumors occurring in children and in adults. Discuss imaging features of medulloblastoma in detail.

(15 marks)

2. Discuss the radiological approach in diagnosing bone tumours. Discuss in detail various types of osteosarcomas.

(15 marks)

3. **Short questions:**

3A. Corpus callosum agenesis.

3B. Holoprosencepaly.

3C. Schizencephaly.

3D. Fluorosis.

3E. Marfan's syndrome.

3F. Isotopes in bone imaging.

3G. Fetal viability in first trimester.

3H. Hysterosalphingography.

3I. Pseudotumours of kidney.

3J. Vesicular mole.

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**

**MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2019**

**SUBJECT: PAPER IV: RECENT ADVANCES AND NUCLEAR MEDICINE RADIOLOGY  
RELATED TO CLINICAL SPECIALITIES**

Friday, April 05, 2019

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Discuss the role of MRI in obstetrics, especially in areas where it overcomes the limitations of ultrasonography and scores over it.

(15 marks)

2. Role of MRI in entrapment and compressive neuropathy of peripheral nerves of the upper extremity.

(15 marks)

3. **Short questions:**

3A. TRUS guided interventions.

3B. MR Enteroclysis.

3C. Cine MR imaging and its utility.

3D. Carotid stenting.

3E. Super paramagnetic MR contrast media.

3F. Recent advances in CT detector technology.

3G. Ultrasound elastography.

3H. MR coronary angiography.

3I. Imaging of breast implant.

3J. Susceptibility weighted imaging.

(7 marks × 10 = 70 marks)

