

MANIPAL ACADEMY OF HIGHER EDUCATION
MD (RADIODIAGNOSIS) DEGREE EXAMINATION – DECEMBER 2023
PAPER I

Monday, December 04, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long questions:**

1. Discuss the principle of acoustics applicable to ultrasound imaging. Describe in brief the construction of transducers used in real time ultrasound. Discuss in brief the various ultrasonography controls.

(15 marks)

2. Discuss the imaging anatomy of the orbit

(15 marks)

3. **Short Questions:**

3A. Anode Heel effect

3B. Segmental anatomy of liver and its importance

3C. T-tube cholangiography

3D. Intra operative ultrasound

3E. Tissue harmonic imaging

3F. Units of radiation dose

3G. Instrumentations in MRI.

3H. Mobile x-ray unit

3I. ^{99m}Tc labeled radionuclide scans

3J. Myelography

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (RADIOLOGICAL) DEGREE EXAMINATION – DECEMBER 2023
PAPER II

Tuesday, December 05, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long questions:**

1. Discuss the role of imaging in benign hepatic tumours in adults. (15 marks)

2. Classify mediastinal masses and discuss the imaging findings of thymic masses. (15 marks)

3. **Short Questions:**

- 3A. Pulmonary venous hypertension
 - 3B. Pheochromocytoma
 - 3C. Anomalies of the IVC and the Azygous system.
 - 3D. Radiographic and CT findings of different types of bronchiectasis
 - 3E. Choledochal cyst
 - 3F. BI-RADS
 - 3G. Aortic dissection
 - 3H. Intussusception
 - 3I. Image guided FNAC of lung lesion
 - 3J. Solitary thyroid nodule
- (7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (RADIOLOGICAL) DEGREE EXAMINATION – DECEMBER 2023
PAPER III

Wednesday, December 06, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long Questions:**

1. Discuss the differential diagnosis of lytic lesions of mandible. (15 marks)

2. Classify adrenal lesions. Discuss the role of CT & MR in evaluation of adrenal lesions. (15 marks)

3. **Short Questions:**

- 3A. Imaging in brain death
- 3B. Carpal tunnel syndrome
- 3C. Imaging in lower urinary tract obstruction
- 3D. Interventional technique for Carotico-cavernous fistula
- 3E. Radiography in shoulder dislocation
- 3F. Cerebral amyloid angiopathy
- 3G. Multiple myeloma
- 3H. Ureterocele
- 3I. Tuberous sclerosis
- 3J. Reflex sympathetic dystrophy syndrome

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
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PAPER IV

Thursday, December 07, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long questions:**

1. MR evaluation of pregnant patient with acute abdominal pain. (15 marks)

2. Hepatobiliary contrast agents. (15 marks)

3. **Short Questions:**

3A. Flat panel detector CT

3B. Cone beam CT.

3C. What are the advantages of 3T MRI over 1.5T MRI? Comment on its limitations.

3D. Ultrasound elastography

3E. Constructive interference in steady state

3F. Fast MRI techniques

3G. MR neurography

3H. MR quantification of iron overload

3I. Pharmacological agents used in cardiac CT & MRI

3J. Newer MR contrast media

(7 marks × 10 = 70 marks)

