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MANIPAL UNIVERSITY

MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2017

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

Monday, April 03, 2017

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Long Questions:

1. Discuss the imaging anatomy of the shoulder joint. (15 marks)

2. What is maximum permissible dose? Describe the methods of radiation protection to the patient and staff in diagnostic radiology. (15 marks)

3. Short Questions:

3A. Dark room safelight

3B. Iohexol

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

3D. Cross sectional anatomy of peritoneal spaces

3E. CT Enterography

3F. MRI artifacts

3G. ALARA

3H. Tissue harmonic imaging

3I. Nephrogenic systemic fibrosis

3J. Factor affecting SNR in MRI

(7 marks × 10 = 70 marks)



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MANIPAL UNIVERSITY

MD (RADIO DIAGNOSIS) DEGREE EXAMINATION – APRIL 2017

SUBJECT: PAPER II: CV, RESP, GIT (INCLUDING HEPATO BILIARY), ENDOCRINE,
CHEST, MAMMOGRAPHY

Tuesday, April 04, 2017

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the question.

✍ Long Questions:

1. Describe the role of MDCT in staging of carcinoma of lung. (15 marks)
2. Describe CT features of liver trauma and role of interventional radiology in it. Describe imaging features of abdominal tuberculosis. (15 marks)

3. Short Questions:

- 3A. Radiographic and CT findings of asthma
- 3B. Lung changes in mitral stenosis
- 3C. Unilateral opaque hemithorax
- 3D. Anomalies of aortic arch and its major branches
- 3E. Radio-isotopes in cardiac imaging
- 3F. Imaging of non – neoplastic pericardial disease
- 3G. Pheochromocytoma
- 3H. Gastric ulcer
- 3I. Achalasia cardia
- 3J. Costochondritis

(7 marks × 10 = 70 marks)



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MANIPAL UNIVERSITY

MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2017

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

Wednesday, April 05, 2017

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Questions:**

1. Classify renal tumours in adults. Describe imaging features in malignant renal tumours. (15 marks)

2. What are the causes of subarachnoid hemorrhage? Discuss the role of radiology in imaging and management of subarachnoid hemorrhage. (15 marks)

3. **Short Questions:**

- 3A. Solid/continuous periosteal reaction
- 3B. Vesico ureteral reflux
- 3C. Intradural extramedullary spinal tumors
- 3D. Ankylosing spondylitis
- 3E. Zonal anatomy of prostate
- 3F. Hypoxic ischemic encephalopathy
- 3G. Histiocytosis
- 3H. Xanthogranulomatous pyelonephritis
- 3I. ADEM
- 3J. Osteogenesis imperfecta

(7 marks × 10 = 70 marks)



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MANIPAL UNIVERSITY

MD (RADIODIAGNOSIS) DEGREE EXAMINATION – APRIL 2017

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

Thursday, April 06, 2017

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Questions:**

1. Discuss the concept of molecular imaging. What are the various modalities used in molecular imaging. Elaborate on the role of MRI in molecular imaging.
(15 marks)
2. Describe the fundamentals of MR spectroscopy. Discuss its role in neuroimaging.
(15 marks)

3. **Short Questions:**

- 3A. Ultrasound contrast media
- 3B. Chemical shift imaging
- 3C. Imaging of the brachial plexus
- 3D. Recent advances in CT detector technology
- 3E. MR Pelvimetry
- 3F. Describe the principles of parallel imaging technology and its clinical applications
- 3G. In phase and out of phase MRI imaging
- 3H. Flat panel detector CT
- 3I. Fast MRI techniques
- 3J. PET in evaluation of lymphoma

(7 marks × 10 = 70 marks)

