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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: ADVANCED TECHNIQUE AND INSTRUMENTATION OF MRI

Monday, May 27, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

 **Answer all the questions.**

1. Define the following terms with respect to MR imaging – SNR, CNR, spatial resolution, scan time. What are the parameters influencing each of these factors?

(20 marks)

2. Short notes:

- 2A. Write a note on Physics and clinical applications of time of flight MR angiograph.
2B. Write a note on functional MRI – principle and clinical applications.
2C. Discuss the different methods available for reduction of motion artifacts.
2D. Discuss the weighting and contrast mechanisms in gradient echo imaging.
2E. Write a note on arterial spin labeling imaging.
2F. Write a note on phase encoding in MRI.

(10×6 = 60 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: INTERVENTIONAL RADIOLOGY TECHNIQUES

Wednesday, May 29, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer all the questions.**

✍ **Major question:**

1. Discuss digital imaging techniques. Write a brief note on digital subtraction techniques.

(20 marks)

2. Short notes on:

2A. Transjugular intrahepatic portosystemic shunt.

2B. Pediatric Cardiac Interventions.

2C. Classify intravenous contrast media.

2D. Intravascular stents.

2E. Embolization.

2F. Pedal lymphography.

(10×6 = 60 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: CARE OF PATIENTS IN DIAGNOSTIC RADIOLOGY

Friday, May 31, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer all the questions:**

✍ **Major Question:**

1. Write detailed note on infection control while interventional radiology procedures.

(20 marks)

2. **Write short notes on:**

2A. Oxygen administration techniques.

2B. Mention the indication of radiology investigations for burn patients and explain necessary care required.

2C. Mummy wrap technique.

2D. Isolation techniques.

2E. Dry heat and moist heat Sterilization techniques.

2F. Assessment of vital signs.

(10×6 = 60 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: MANAGEMENT OF HEALTHCARE ORGANIZATION

Monday, June 03, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

Answer all the questions.

1. Discuss the various theories of motivation? Give examples.

(15+5 = 20 marks)

2. Write short notes on:

2A. Radiology Information System (RIS).

2B. Importance of PNDT Act.

2C. Planning of medical equipment.

2D. Breakeven Analysis.

2E. Management by objective (MBO).

2F. Standard Operating Procedures (SOP's).

(10×6 = 60 marks)



Reg. No.

MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: RADIATION EVALUATION & PROTECTION IN DIAGNOSTIC RADIOLOGY

Wednesday, June 05, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer all the questions.**

✍ **Major questions.**

1. Explain MDCT radiation consideration with emphasis on dose reduction for patients.

(20 marks)

2. **Write short notes on:**

2A. Electronic dosimeter.

2B. Protection in mobile radiography.

2C. Beam limiting devices.

2D. Effective dose.

2E. Effects of antenatal exposure.

2F. Deterministic effects of radiation.

(10×6 = 60 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: NUCLEAR MEDICINE IMAGING TECHNIQUE

Friday, June 07, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer all the questions.**

✍ **Major Question:**

1. Write a note on radionuclide generators.

(20 marks)

2. **Write short notes on:**

2A. Photomultiplier tube.

2B. Annihilation and its implication in nuclear medicine.

2C. Alpha decay.

2D. Safe handling of radioactive materials.

2E. Half life.

2F. Dynamic image acquisition .

(10×6 = 60 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2013

SUBJECT: INTERVENTIONAL RADIOLOGY TECHNIQUES

Wednesday, December 18, 2013

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer all the questions**

✍ **Major Questions.**

1. Discuss cerebrovascular anatomy. Write brief note on indications, contraindications and complications of cerebral angiography.

(20 marks)

✍ **Short notes:**

- 2A. Contrast media reactions
- 2B. Types of digital subtraction techniques
- 2C. Balloon angioplasty
- 2D. Hysterosalpingography
- 2E. Knee arthrography
- 2F. Guide wires

(10×6 = 60 marks)

