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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: MANAGEMENT OF HEALTHCARE ORGANIZATION

Wednesday, December 17, 2014

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

Answer ALL the questions.

1. Define the term 'Leadership'. Enumerate the various leadership styles adopted in managing the workplace effectively.

(3+5+12 = 20 marks)

2. **Write short notes on the following questions:**

- 2A. Picture Archival and Communication System (PACS)
2B. Steps in implementation of ISO
2C. Supply chain management
2D. Performance Appraisal
2E. Managerial Functions
2F. Barriers in communication

(10 marks × 6 = 60 marks)



MANIPAL UNIVERSITY**SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2014****SUBJECT: ADVANCED TECHNIQUE AND INSTRUMENTATION OF MRI**

Thursday, December 18, 2014

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ Essay question:

1. Explain MR angiographic imaging in detail.

(20 marks)

2. **Write short note:**

2A. What is the orientation of main magnetic field within an MR scanner? Explain the application of magnetic field gradient in detail.

2B. What is the difference between T2 and T2*? Explain the important atomic interaction mechanisms contributing to T1 and T2 relaxation?

2C. Is superconducting MR magnet ever turned off? Explain magnetic quenching in detail.

2D. Write a note on perfusion MR Imaging and mention its clinical applications.

2E. What is EPI? Explain the use of EPI in clinical MRI. Mention the list of fast imaging techniques in MRI.

2F. Explain clinical application of diffusion imaging in detail.

(10 marks × 6 = 60 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: INTERVENTIONAL RADIOLOGY TECHNIQUES

Friday, December 19, 2014

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL the questions.**

✍ **Essay question:**

1. Describe in detail the indications, contraindications, material, instrumentation and procedure of direct puncture vertebroplasty.

(20 marks)

2. **Write short notes on:**

2A. Pressure injector

2B. Radiofrequency ablation of hepatic tumors

2C. Ultrasound guided liver abscess aspiration and drainage

2D. 3-D rotation angiography

2E. Catheters, embolizing agent(s) and technique of renal artery embolization

2F. Angiography room design

(10 marks × 6 = 60 marks)



Reg. No.

MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: CARE OF PATIENTS IN DIAGNOSTIC RADIOLOGY

Saturday, December 20, 2014

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL the questions**

✍ **Draw suitable diagrams wherever necessary.**

✍ **Major question:**

1. Briefly explain the patient care provided to a patient suffering from a road traffic trauma.

(20 marks)

2. **Write short notes on:**

2A. Professional behavior of an Imaging Technologist

2B. Mummy wrap technique

2C. Sterile techniques used in different procedures

2D. Patient care for a patient undergoing biliary tract procedures

2E. Vital body signs and CPR

2F. Emergency drugs used in radiology with their specific action and dosage

(10 marks × 6 = 60 marks)



MANIPAL UNIVERSITY**SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2014****SUBJECT: RADIATION EVALUATION & PROTECTION IN DIAGNOSTIC RADIOLOGY**

Monday, December 22, 2014

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL the questions.**

✍ **Major question.**

1. Elucidate the importance of Protective Barriers and the factors involved in the determination of barrier for a radiographic installation.

(20 marks)

2. **Write short notes on:**

- 2A. Interpret the importance of a Radiation Safety Program and discuss the responsibilities of an RSO.
- 2B. Discuss about the organizations which are responsible for evaluating the relationship between radiation equivalent dose and Induced biologic effects.
- 2C. Expound the various Dose-response Curves.
- 2D. Explain the “Indirect action” of Ionizing Radiation.
- 2E. Describe in detail about the Principles of Radiation protection for Personnel exposure.
- 2F. What do you mean by the following:
- Background Equivalent Radiation Time (BERT)
 - Radiation Weighting Factor
 - Oxygen Enhancement Ratio
 - Radiation Hormesis
 - Doubling Dose Concept

(10 marks × 6 = 60 marks)



MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.I.T. DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: NUCLEAR MEDICINE IMAGING TECHNIQUE

Tuesday, December 23, 2014

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL the questions.**

✍ **Major Question:**

1. Discuss briefly the modes of radioactive decay.

(20 marks)

2. **Write short notes on:**

2A. Pulse height spectrometry

2B. Reactor produced radio nuclides

2C. Gamma camera

2D. Transport of radioactive materials

2E. Nuclides and its classification

2F. Bone scintigraphy

(10 marks × 6 = 60 marks)

