

Question Paper

Exam Date & Time: 12-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BMIT 301 - IMAGING PHYSICS AND DARKROOM TECHNIQUES (PART I)

(2016 SCHEME)

Thursday, December 12, 2019 (14.00 - 16.00)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Explain the functions, features and construction of X-ray cassette. (10)
- 2) Write in detail about the requirements used to calculate Primary and Secondary barrier. (10)

- 3) **Discuss the following:**
- 3A) Types of Intensifying screen phosphor (5)
- 3B) Earthing (5)
- 3C) Thermo-luminescent dosimeter (5)
- 3D) Direct exposure x-ray film (5)

- 4) **Discuss the following:**
- 4A) Effective dose (2)
- 4B) Terminology and notation of atom (2)
- 4C) Function of gelatine in emulsion layer (2)
- 4D) Causes of subject contrast (2)
- 4E) Interaction responsible for scattered radiation (2)

-----End-----

Question Paper

Exam Date & Time: 13-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BMIT 303 - RADIOLOGICAL PROCEDURES AND PATIENT CARE (PART I)

(2016 SCHEME)

Friday, December 13, 2019 (14.00 - 16.00)

Answer ALL questions.

Draw Diagram Wherever Necessary.

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Discuss briefly the radiological procedure for Assisted Cystourethrogram(ASU). (10)
- 2) Discuss briefly Anatomy of Elbow Joint. Add a note on radiographic positioning of Jones Method. (10)
- 3) **Write short notes on:**
 - 3A) Reverse Townes View (5)
 - 3B) Views for TM Joint (5)
 - 3C) Sub-Mento Vertical View (5)
 - 3D) Per-Oral Pneumocolon (5)
- 4) **Explain the following:**
 - 4A) Other Contrast Media used in GIT (2)
 - 4B) Techniques to demonstrate Achalasia Cardia (2)
 - 4C) Complications of Barium Meal Follow Through (2)
 - 4D) Differences between Chest AP and PA view (2)
 - 4E) Post procedural Complications of MCU (2)

-----End-----

Question Paper

Exam Date & Time: 14-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BMIT 305 - RECENT TRENDS IN ULTRASONOGRAPHY

(2016 SCHEME)

Saturday, December 14, 2019 (14.00 - 16.00)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- | | | |
|-----|---|------|
| 1) | Explain Bio effects of ultrasound. | (10) |
| 2) | Explain ultrasound display. | (10) |
| 3A) | Explain types of transducer. | (5) |
| 3B) | Explain basic principle of Doppler. | (5) |
| 3C) | Explain ultrasound protocol for abdomen. | (5) |
| 3D) | Explain difference between Continuous wave Doppler and pulsed wave doppler. | (5) |
| 4A) | Define Fresnel zone and fraunhoffer zone of ultrasound beam. | (2) |
| 4B) | Explain types of scattering of ultrasound beam. | (2) |
| 4C) | Define piezoelectric effect. | (2) |
| 4D) | Explain two useful artifacts in ultrasound. | (2) |
| 4E) | Define Transducer Q factor. | (2) |

-----End-----

Question Paper

Exam Date & Time: 18-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BMIT 307 - RECENT TRENDS IN DIGITAL IMAGING
(2016 SCHEME)

Wednesday, December 18, 2019 (14.00 - 16.00)

Answer ALL questions.

Draw the diagrams whenever required.

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Describe in detail about types of Digital Radiography. (10)
- 2) Discuss in detail about PACS. (10)
- 3) **Write short essay on:**
 - 3A) Angiographic room design (5)
 - 3B) Dedicated mammography unit (5)
 - 3C) Intraoral radiography techniques (5)
 - 3D) Advantages and Disadvantages of CR (5)
- 4) **Write short notes on:**
 - 4A) Advantages of compression in mammography (2)
 - 4B) FFDM (2)
 - 4C) Dual head pressure injector (2)
 - 4D) Time interval differencing (2)
 - 4E) RIS (2)

----End----

Question Paper

Exam Date & Time: 19-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BMIT 309 - RECENT TRENDS IN NUCLEAR MEDICINE TECHNOLOGY

(2016 SCHEME)

Thursday, December 19, 2019 (14.00 - 16.00)

Answer all questions.

Draw neat and labelled diagram as and when required.

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Define radioactivity. Discuss in detail relationship between physical and biological half-life. (10)
- 2) Discuss in detail different types of radiation detectors used in nuclear medicine. (10)
- 3A) What is specific activity? How is it different from carrier free specific activity? (5)
- 3B) Explain beta decay with the help of a diagram. (5)
- 3C) Write short note on parent-daughter equilibrium. (5)
- 3D) Enlist some of the radiopharmaceuticals used in nuclear medicine. Also mention their applications. (5)
- 4A) What are characteristic radiations? (2)
- 4B) What is linear energy transfer? (2)
- 4C) What is half value thickness? (2)
- 4D) Differentiate between beta and gamma radiations. (2)
- 4E) State important assumptions of Bohr's atomic model. (2)

-----End-----