

Question Paper

Exam Date & Time: 22-Feb-2020 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - FEBRUARY 2020
SUBJECT: BMIT 301 - IMAGING PHYSICS AND DARKROOM TECHNIQUES (PART I)
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Explain briefly about the storage of the radiographic film. (10)
2) Explain in detail the interaction of radiation with matter. (10)

3) Discuss the following:

- 3A) Rectification (5)
3B) Types of cassette (5)
3C) Circuit breakers (5)
3D) Factors affecting quality of X-ray. (5)

4) Discuss the following:

- 4A) Half life (2)
4B) Electromagnetic spectrum. (2)
4C) Noise (2)
4D) Cardinal principle of radiation protection. (2)
4E) Characteristics of film base. (2)

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Question Paper

Exam Date & Time: 24-Feb-2020 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - FEBRUARY 2020
SUBJECT: BMIT 303 - RADIOLOGICAL PROCEDURES AND PATIENT CARE (PART I)
(2016 SCHEME)

Answer all questions.

Draw diagrams wherever necessary.

Marks: 50

Duration: 120 mins.

Explain in detail:

- 1) Indications, contraindications, patient preparation and procedure for Myelogram. (10)
- 2) Anatomy of Wrist joint. Add a note on views taken for carpal tunnel syndrome. (10)

3) Write short notes on the following:

- 3A) Radiographic projection to visualize Optic Foramina. (5)
- 3B) Radiographic projection for Zygomatic Arches. (5)
- 3C) Biphasic study of upper GIT. (5)
- 3D) Double contrast Barium Meal. (5)

4) Discuss the following:

- 4A) Advantages and Disadvantages of BMFT. (2)
- 4B) Standard filming technique for MCU. (2)
- 4C) Importance of Delayed films in IVU. (2)
- 4D) Chemotoxic effects of Contrast Media. (2)
- 4E) Indications for High Dose Urography. (2)

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Question Paper

Exam Date & Time: 25-Feb-2020 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - FEBRUARY 2020
SUBJECT: BMIT 305 - RECENT TRENDS IN ULTRASONOGRAPHY
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

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| 1) | What is piezoelectric effect? Discuss types of transducers used in ultrasound imaging and their application. | (10) |
| 2) | Explain the biological effects of ultrasound. | (10) |
| 3A) | Explain doppler spectral analysis. | (5) |
| 3B) | List the types of Doppler techniques and explain briefly continuous wave doppler. | (5) |
| 3C) | Explain resolution and its types. | (5) |
| 3D) | List the various interaction of ultrasound with matter and explain reflection in detail. | (5) |
| 4A) | Short note on patient preparation for USG abdomen. | (2) |
| 4B) | Define far zone and near zone. | (2) |
| 4C) | List the controls in ultrasound. | (2) |
| 4D) | Explain the function of backing block. | (2) |
| 4E) | What is Q factor? | (2) |

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Question Paper

Exam Date & Time: 26-Feb-2020 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - FEBRUARY 2020
SUBJECT: BMIT 307 - RECENT TRENDS IN DIGITAL IMAGING
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Discuss in detail digital mammography equipment. Add a note on magnification mammography. (10)
- 2) Explain the various digital subtraction angiography techniques. Add a note on road-mapping technique. (10)

3) Write short essay on:

- 3A) Advantages and applications of CCD (5)
- 3B) Latent image formation and image development in computed radiography (5)
- 3C) Principles of Macroradiography (5)
- 3D) Automatic injection device (5)

4) Write short notes on:

- 4A) Indications for Orthopantomography (2)
- 4B) Views for mammography axillary tail (2)
- 4C) Types of PACS (2)
- 4D) Advantages and Disadvantages of digital radiography (2)
- 4E) Dental formula and dental terminologies (2)

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Question Paper

Exam Date & Time: 27-Feb-2020 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - FEBRUARY 2020
SUBJECT: BMIT 309 - RECENT TRENDS IN NUCLEAR MEDICINE TECHNOLOGY
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all questions.

Draw neat and labelled diagram as and when required.

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|-----|---|------|
| 1) | Discuss the principle and working of a Single photon emission computed tomography system. | (10) |
| 2) | Discuss in detail different types of parent-daughter equilibrium. | (10) |
| 3A) | What is Carrier Free Specific Activity? How is it important in Nuclear Medicine? | (5) |
| 3B) | Write the applications of ^{99m}Tc -MDP, ^{99m}Tc -DTPA, ^{99m}Tc -Mebrofenin, ^{99m}Tc -Sestamibi and ^{131}I -sodium iodide in nuclear Medicine. | (5) |
| 3C) | Write short note on NaI(Tl) crystal. | (5) |
| 3D) | Discuss briefly on the working of Isotope calibrator and its application. | (5) |
| 4A) | What are survey meters? | (2) |
| 4B) | What is the important of pocket dosimeter? | (2) |
| 4C) | What is half value thickness? | (2) |
| 4D) | Define radioactivity. | (2) |
| 4E) | Give relationship between mCi and Bq. | (2) |

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