Question Paper

Exam Date & Time: 15-Mar-2021 (02:30 PM - 04:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - MARCH 2021
SUBJECT: BMIT 303 - RADIOLOGICAL PROCEDURES AND PATIENT CARE (PART I)
(2016 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

Draw diagrams wherever necessary.

1. **Explain in detail:**

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

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

2A)	Radiographic projection to visualize Optic Foramina.	(5)
2B)	Radiographic projection for Zygomatic Arches.	(5)
2C)	Biphasic study of upper GIT.	(5)
2D)	Double contrast Barium Meal.	(5)

3. **Discuss the following:**

3A)	Advantages and Disadvantages of BMFT.	(2)
3B)	Standard filming technique for MCU.	(2)
3C)	Importance of Delayed films in IVU.	(2)
3D)	Chemotoxic effects of Contrast Media.	(2)
3E)	Indications for High Dose Urography.	(2)

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Question Paper

Exam Date & Time: 17-Mar-2021 (02:30 PM - 04:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - MARCH 2021
SUBJECT: BMIT 307 - RECENT TRENDS IN DIGITAL IMAGING
(2016 SCHEME)

Answer ALL questions.
Draw the diagrams whenever required.

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Describe in detail about types of imaging cameras.	(10)
2)	Describe about principle and applications of Digital breast tomosynthesis	(10)
3A)	CC, MLO & magnifications views in mammography	(5)
3B)	Instrumentation of Biplane DSA	(5)
3C)	Digital Image processing	(5)
3D)	Workflow of CR	(5)
4A)	Patient preparation in mammography	(2)
4B)	Types of PACS	(2)
4C)	Occlusal radiography	(2)
4D)	RIS and HIS	(2)
4E)	Applications of CCD	(2)

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Question Paper

Exam Date & Time: 19-Mar-2021 (02:30 PM - 04:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - MARCH 2021
SUBJECT: BMIT 309 - RECENT TRENDS IN NUCLEAR MEDICINE TECHNOLOGY
(2016 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Discuss in detail principle, working and applications of a gamma camera.	(10)
2)	Describe the basic working principle of gas filled radiation detectors.	(10)

3. **Write short note on:**

3A)	Half life.	(5)
3B)	Bohr's atomic model.	(5)
3C)	Physical characteristics of Technecium-99m.	(5)
3D)	Static and dynamic imaging acquisition .	(5)

4A)	Define radioactivity.	(2)
4B)	What is meant by carrier free specific activity?	(2)
4C)	Give one example of parent-daughter equilibrium.	(2)
4D)	Name one skeletal and one thyroid imaging agent used in Nuclear Medicine.	(2)
4E)	Write the application of dose calibrator and uptake probe.	(2)

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Question Paper

Exam Date & Time: 23-Mar-2021 (02:30 PM - 04:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - MARCH 2021
SUBJECT: BMIT 301 - IMAGING PHYSICS AND DARKROOM TECHNIQUES (PART I)
(2016 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Explain in details about X-ray generators and its types.	(10)
2)	Discuss briefly about the formation of Latent image. Add a note on Gurney Mott Theory and Mitchell Theory.	(10)

3. **Discuss the following**:

3A)	Silver Halide	(5)
3B)	Modes of radioactive decay	(5)
3C)	Ionization chamber	(5)
3D)	Spectra of X-ray	(5)

4. **Discuss the following:**

4A)	Effective dose	(2)
4B)	Pair Production	(2)
4C)	Line voltage and phase voltage	(2)
4D)	Resolution	(2)
4E)	Difference between characteristic radiation and auger electron.	(2)

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Question Paper

Exam Date & Time: 25-Mar-2021 (02:30 PM - 04:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. (MEDICAL IMAGING TECHNOLOGY) DEGREE EXAMINATION - MARCH 2021
SUBJECT: BMIT 305 - RECENT TRENDS IN ULTRASONOGRAPHY
(2016 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Explain the biological effects of ultrasound.	(10)
2)	Write detail note on Ultrasound doppler instrumentation.	(10)
3A)	Define resolution and add a note on the types of resolution in ultrasound.	(5)
3B)	List the various interaction of ultrasound with matter and explain reflection in detail.	(5)
3C)	Write a note on the useful artefacts in ultrasound and its application.	(5)
3D)	List the contrast media used in ultrasound.	(5)
4A)	Patient preparation for USG abdomen.	(2)
4B)	Define far zone and near zone in ultrasound.	(2)
4C)	List the controls in ultrasound.	(2)
4D)	Define compression and rare fraction.	(2)
4E)	What is backing block in transducer and its function?	(2)

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