Question Paper

Exam Date & Time: 27-Jun-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER M.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - JUNE/JULY 2022
SUBJECT: MIT5201 - ADVANCED INSTRUMENTATION AND TECHNIQUES IN CT-II
(2021SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Explain scanning protocols for CT Brain angiographic Techniques.	(20)
2)	Discuss the Quality Control for Computed Tomography in detail.	(20)

3. **Explain the following:**

3A)	Explain how CT is used in radiation treatment planning.	(10)
3B)	Discuss the window width and window level in detail.	(10)
3C)	Write a short note on 3D rendering techniques.	(10)
3D)	Discuss the indications, contraindication, procedure of CT fluoroscopy techniques in detail.	(10)

4. **Explain the following:**

4A)	Outline the use of contrast media in CT angiographic Techniques.	(5)
4B)	Define medical image fusion and list its application areas in Medicine.	(5)
4C)	Explain the features of multislice portable CT.	(5)
4D)	Discuss the factors affecting spatial and contrast resolution in CT.	(5)

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Question Paper

Exam Date & Time: 29-Jun-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER M.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - JUNE/JULY 2022
SUBJECT: MIT5202 - RADIATION EVALUATION AND PROTECTION
(2021 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Discuss briefly the biological effect of radiation. Add a note acute radiation syndrome.	(20)
2)	Discuss briefly the radiation area monitoring device.	(20)
3A)	State 28th day rule and discuss its significances in radiation protection.	(10)
3B)	Discuss in detail the AERB guidelines for dental radiography designs and structural shielding room.	(10)
3C)	Discuss in detail the Biological effect of antenatal exposure.	(10)
3D)	Discuss in detail the Radiation safety and techniques during handling radioisotopes.	(10)

4. **Explain in detail:**

4A)	Radiation dose - response curves.	(5)
4B)	Advancements in radiation shielding materials.	(5)
4C)	Significances of air gap techniques in radiation dose.	(5)
4D)	Radiation weighting factor and tissue weighting factor.	(5)

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