

Question Paper

Exam Date & Time: 07-Dec-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Explain the causes for Main voltage drop. Write a note on compensating techniques used to overcome the Main voltage drop. (10)
- 2) Explain in detail about the construction on intensifying screen. (10)

3. Discuss the following:

- 3A) Linear attenuation coefficient (5)
- 3B) Types of cassette (5)
- 3C) Aim and objective of Radiation Protection (5)
- 3D) Double Emulsion Film Construction (5)

4. Discuss the following

- 4A) Half life (2)
- 4B) Resolution (2)
- 4C) Difference between Subject contrast and Subjective contrast (2)
- 4D) P-N junction (2)
- 4E) Coherent scattering (2)

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Question Paper

Exam Date & Time: 11-Dec-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Marks: 50

Duration: 120 mins.

Answer all the questions.

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|-----|--|------|
| 1) | Explain contrast media used in ultrasound imaging | (10) |
| 2) | Explain controls of ultrasound | (10) |
| 3A) | Explain basic principle of ultrasound | (5) |
| 3B) | Explain Continuous wave doppler | (5) |
| 3C) | Explain Resolution in ultrasound image | (5) |
| 3D) | Explain grey scale imaging | (5) |
| 4A) | Explain patient preparation for abdomen ultrasound | (2) |
| 4B) | Describe the applications of linear transducer | (2) |
| 4C) | Define reverberation artifact | (2) |
| 4D) | Define USG coupling agents | (2) |
| 4E) | Define Doppler shift | (2) |

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Question Paper

Exam Date & Time: 14-Dec-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Answer ALL questions.

Draw the diagrams whenever required.

Marks: 50

Duration: 120 mins.

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|-----|---|------|
| 1) | Describe in detail about angiographic room design. | (10) |
| 2) | Describe about principle and applications of Macroradiography | (10) |
| 3A) | k-edge subtraction technique | (5) |
| 3B) | DICOM | (5) |
| 3C) | Digital breast tomosynthesis | (5) |
| 3D) | Advantage of CR over convention X ray unit | (5) |
| 4A) | Components of PACS | (2) |
| 4B) | Instrumentation of OPG | (2) |
| 4C) | CR reader | (2) |
| 4D) | Applications of photodiode in digital imaging | (2) |
| 4E) | Cephalometry | (2) |

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Question Paper

Exam Date & Time: 16-Dec-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Answer ALL questions.

Draw neat and labelled diagram where necessary.

Marks: 50

Duration: 120 mins.

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|-----|--|------|
| 1) | Discuss the principle and working of a PET system. | (10) |
| 2) | Discuss in detail about survey meters. | (10) |
| 3A) | Explain the process of Gamma decay. | (5) |
| 3B) | Explain production of radionuclide using cyclotron. | (5) |
| 3C) | Write a short note on radioactive waste management. | (5) |
| 3D) | Write short note on event detection in a gamma camera. | (5) |
| 4A) | Define Isotope and Isobar. | (2) |
| 4B) | Define Mean life. | (2) |
| 4C) | Define cold kit. | (2) |
| 4D) | Define radioactive decay. | (2) |
| 4E) | What is wipe testing? | (2) |

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