

# Question Paper

Exam Date & Time: 16-May-2025 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. MIT DEGREE EXAMINATION - MAY/JUNE 2025

SUBJECT: MIT2201 - RADIATION SAFETY IN RADIODIAGNOSIS

(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

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|-----|--|------|
| 1)  | Explain in detail the cardinal principles of radiation protection and outline the different methods to reduce the radiation dose in fluoroscopy. | (20) |
| 2)  | Outline the direct and indirect actions of radiation. Write in detail about the Interaction of radiation with cells.                             | (20) |
| 3)  | Explain the construction, working, advantages, and disadvantages of proportional counter.  | (10) |
| 4)  | Outline the design and shielding requirements for diagnostic X-ray facilities.   | (10) |
| 5A) | Explain the construction of TLD.   | (5)  |
| 5B) | Interpret the effect of exposure factors on radiation protection.  | (5)  |
| 5C) | Compare deterministic and stochastic effects of radiation.   | (5)  |
| 5D) | Explain the recommendations of AERB.   | (5)  |
| 5E) | Summarize the advantages and disadvantages of pocket dosimeter.  | (5)  |
| 5F) | Explain radiation precaution measures taken for children.  | (5)  |
| 6A) | What is the Radiation dose to individuals from natural radioactivity in the environment?   | (2)  |
| 6B) | Define LD50/60.  | (2)  |
| 6C) | List the immobilization aids used in radiography.  | (2)  |
| 6D) | Define AGD.  | (2)  |
| 6E) | Define LET.  | (2)  |

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# Question Paper

Exam Date & Time: 26-May-2025 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**FOURTH SEMESTER B.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - MAY 2025**  
**SUBJECT: MIT2241 - PROGRAM ELECTIVE - I: ADVANCED IMAGE GUIDED PROCEDURES**  
**(2020 SCHEME)**

**Marks: 50**

**Duration: 120 mins.**

**Answer all the questions.**

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|-----|--|------|
| 1)  | Explain in detail the radiological procedure of biliary drainage.  | (10) |
| 2)  | Outline the indication, contraindication, equipment used, complication and aftercare of Vertebroplasty and Kyphoplasty.    | (10) |
| 3A) | Recall the anatomy of cerebral angiography. Add a note on patient preparation and equipment used for cerebral angiography. | (5)  |
| 3B) | Define embolization. Add a note on types and classification of the embolic agent.  | (5)  |
| 3C) | Explain in detail about the radiological procedure of T-tube cholangiography.  | (5)  |
| 3D) | Outline the indication, contraindication and equipment used for TACE.  | (5)  |
| 4A) | Summarize the indication and contraindication of Nerve block.  | (2)  |
| 4B) | List the complications and aftercare for the TIPS.   | (2)  |
| 4C) | Define Phlebography.   | (2)  |
| 4D) | Recall the anatomy related to Lower limb angiography.  | (2)  |
| 4E) | List the equipment of used for angioplasty.  | (2)  |

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