

# Question Paper

Exam Date & Time: 05-Jan-2023 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER M. Sc. NMT DEGREE EXAMINATION - JANUARY 2023  
SUBJECT: NMT6011 - PRE-CLINICAL STUDIES IN NUCLEAR MEDICINE  
(2021 SCHEME)

Answer ALL questions.

Draw neat and labelled diagram as and when required.

Marks: 50

Duration: 120 mins.

- |     |   |      |
|-----|---|------|
| 1)  | Explain the principle and working of a scanning electron microscope.        | (20) |
| 2A) | Explain principle and steps of Enzyme linked immunosorbent assay technique. | (10) |
| 2B) | Explain Western blotting technique.   | (10) |
| 3A) | Explain autoradiography.  | (5)  |
| 3B) | Summarize precautions in handling mouse for animal experiments.             | (5)  |

-----End-----

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## MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER M.Sc. NMT DEGREE EXAMINATION - JANUARY 2023  
SUBJECT: NMT6012 - CROSS-SECTIONAL IMAGING  
(2021 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- |     |   |      |
|-----|---|------|
| 1)  | Explain CT instrumentation in detail.   | (20) |
| 2A) | Define SNR. Discuss the factors affecting SNR.                                      | (10) |
| 2B) | Explain working of PET-MRI imaging system.  | (10) |
| 3A) | Explain appearance, cause and remedy of different MRI artefacts.                    | (5)  |
| 3B) | Define Pulse Sequence. Name and state the different pulse timing parameters in MRI. | (5)  |

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