

National Board of Examinations

Question Paper Name :	DNB Nuclear Medicine Paper1
Subject Name :	DNB Nuclear Medicine Paper1
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Actual Answer Key :	No

DNB Nuclear Medicine Paper1

Group Number :	1
Group Id :	3271872559
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Group Marks :	100
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

DNB Nuclear Medicine Paper1

Section Id :	3271872562
Section Number :	1
Section type :	Offline

Mandatory or Optional :	Mandatory
Number of Questions to be attempted :	10
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	3271872566
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 32718726043 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Please write your answers in the answer booklet within the allotted pages as follows:-

Question Number	Answer to be attempted within	Question Number	Answer to be attempted within
Q. 1	Page 1-5	Q. 6	Page 26-30
Q. 2	Page 6-10	Q. 7	Page 31-35
Q. 3	Page 11-15	Q. 8	Page 36-40
Q. 4	Page 16-20	Q. 9	Page 41-45
Q. 5	Page 21-25	Q. 10	Page 46-50

1. Discuss the non-particulate radiation interactions with matter. [10]

Question Number : 2 Question Id : 32718726044 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

a) Derive the expression $N=N_0e^{-\lambda t}$. [5]

b) Mediastinal nodal stations. [5]

Question Number : 3 Question Id : 32718726045 Question Type : SUBJECTIVE Consider As

Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

What is radioactive equilibrium? Discuss about the different types of radioactive equilibrium with the implications in routine clinical practice. [10]

Question Number : 4 Question Id : 32718726046 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

What are the gas-filled detectors? Enumerate their types and write in detail about ionization chamber based detector. [10]

Question Number : 5 Question Id : 32718726047 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

a) What are the various documents submitted to ethics committee when you are applying for your thesis topic clearance? [5]

b) Decay scheme of Lu-177 (Lutetium-177). [5]

Question Number : 6 Question Id : 32718726048 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

a) Auger electron. [5]

b) Quenching in GM counter. [5]

Question Number : 7 Question Id : 32718726049 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) Compare and contrast between the role of tissue weighting factor between ICRP 60 and ICRP 103. [5]
- b) Gaussian & Poisson distributions with diagrams. [5]

Question Number : 8 Question Id : 32718726050 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

What are the different types of clinical studies? Discuss in detail about Randomized Control Trial (RCT). [4+6]

Question Number : 9 Question Id : 32718726051 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) Forest Plot. [5]
- b) Receiver Operating Curve (ROC) and its utility in Nuclear Medicine. [5]

Question Number : 10 Question Id : 32718726052 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) Enumerate measures of variability and describe them. [2+3]
- b) Cerenkov luminescence imaging. [5]