

National Board of Examinations

Question Paper Name : DNB Nuclear Medicine Paper1
Subject Name : DNB Nuclear Medicine Paper1
Creation Date : 2023-04-25 11:44:39
Duration : 180
Share Answer Key With Delivery Engine : No
Actual Answer Key : No

DNB Nuclear Medicine Paper1

Group Number : 1
Group Id : 327187803
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 : 327187806
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 :	327187810
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 32718720862 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. What are the various crystals available for PET imaging? Discuss their physical properties, advantages & disadvantages in detail. [3+7]

Question Number : 2 Question Id : 32718720863 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) Describe various types reconstruction algorithms used in CT & MRI. [5]

b) What is an artifact? Discuss the types of artifacts arising from SPECT and CT in SPECT/CT imaging. [5]

Question Number : 3 Question Id : 32718720864 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Define SUV, SUV max, SUV mean, SUV peak. Write a detailed note on the different factors affecting SUV estimation. [4+6]

Question Number : 4 Question Id : 32718720865 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 components of a thesis protocol? Describe the Phase 1 & Phase 2 of a clinical trial. [3+2]

b) Draw the diagrams of Nephron and Neuron labelling the parts. [5]

Question Number : 5 Question Id : 32718720866 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) Write about Pair production and Rayleigh Scatter. [5]

b) Niel Bohr's atomic model with diagram. [5]

Question Number : 6 Question Id : 32718720867 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) Characteristic X-rays and Auger electrons. [5]

b) Types of Neutron interactions with matter. [5]

Question Number : 7 Question Id : 32718720868 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) Compton effect. [2]
- b) Specific gamma ray constant. [3]
- c) Linear energy transfer. [2]
- d) Isometric transition. [3]

Question Number : 8 Question Id : 32718720869 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) Application of Low-pass Filters in image reconstruction. [5]
- b) Nyquist Frequency. [5]

Question Number : 9 Question Id : 32718720870 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) Tissue weighting factor. [5]
- b) Tissue contrast in MRI. [5]

Question Number : 10 Question Id : 32718720871 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) Type I and Type II errors. [5]
- b) Null Hypothesis. [5]