

# National Board of Examinations

<b>Question Paper Name :</b>	DNB Radiation Oncology Paper4
<b>Subject Name :</b>	DNB Radiation Oncology Paper4
<b>Creation Date :</b>	2023-04-27 21:17:31
<b>Duration :</b>	180
<b>Share Answer Key With Delivery Engine :</b>	No
<b>Actual Answer Key :</b>	No

## DNB Radiation Oncology Paper4

<b>Group Number :</b>	1
<b>Group Id :</b>	327187840
<b>Group Maximum Duration :</b>	0
<b>Group Minimum Duration :</b>	180
<b>Show Attended Group? :</b>	No
<b>Edit Attended Group? :</b>	No
<b>Group Marks :</b>	100
<b>Is this Group for Examiner? :</b>	No
<b>Examiner permission :</b>	Cant View
<b>Show Progress Bar? :</b>	No

## DNB Radiation Oncology Paper4

<b>Section Id :</b>	327187843
<b>Section Number :</b>	1
<b>Section type :</b>	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 :** 327187847

**Question Shuffling Allowed :** No

**Is Section Default? :** null

**Question Number : 1 Question Id : 3271877482 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. a) Discuss the physics of Proton Beam and its clinical relevance in Radiotherapy. [7]
- b) Describe the construction and functioning of Proton Beam Machine. [3]

**Question Number : 2 Question Id : 3271877483 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 is Tomotherapy? [2]
- b) Discuss its principle and construction and how it differs from linac based arc therapy? [5]
- c) Write its use in Total Marrow Irradiation. [3]

**Question Number : 3 Question Id : 3271877484 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 is PET CT? Enumerate the various radio-isotopes used for PET scan. [6]
- b) Describe the principle of PET CT and its role in Radiotherapy treatment planning. [4]

**Question Number : 4 Question Id : 3271877485 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 is SBRT? [1]
- b) Describe the indications where SBRT is used in modern practice of radiation oncology. [3]
- c) Write about role of SBRT in liver tumors. [6]

**Question Number : 5 Question Id : 3271877486 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 10**

Write about Total Skin Irradiation with regard to indications, radiotherapeutic techniques and its complications. [2+6+2]

**Question Number : 6 Question Id : 3271877487 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) Discuss various dose rates used in Brachytherapy. [5]
- b) Write about ICRU 89. [5]

**Question Number : 7 Question Id : 3271877488 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) Define FLASH radiotherapy? Write about its principles. [5]
- b) Write about biological benefits of FLASH RT. [5]

**Question Number : 8 Question Id : 3271877489 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 altered fractionation schedules used in clinical practice and discuss the radiobiology of various schedules? [7]
- b) What is the ultra-hypofractionation and its role in treatment of carcinoma prostate? [3]

**Question Number : 9 Question Id : 3271877490 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 oncogenes? [3]
- b) Describe them along with their clinical importance. [7]

**Question Number : 10 Question Id : 3271877491 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 is a clinical trial? [3]
- b) Discuss its different phases. [4]
- c) Kaplan-Meier Survival Curves. [3]