

# National Board of Examinations

<b>Question Paper Name :</b>	DrNB Medical Genetics Paper1
<b>Subject Name :</b>	DrNB Medical Genetics Paper1
<b>Creation Date :</b>	2023-10-15 14:11:36
<b>Duration :</b>	180
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<b>Actual Answer Key :</b>	No

## DrNB Medical Genetics Paper1

<b>Group Number :</b>	1
<b>Group Id :</b>	327187789
<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

## DrNB Medical Genetics Paper1

<b>Section Id :</b>	327187792
<b>Section Number :</b>	1
<b>Section type :</b>	Offline

<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions to be attempted :</b>	10
<b>Section Marks :</b>	100
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	327187796
<b>Question Shuffling Allowed :</b>	No
<b>Is Section Default? :</b>	null

**Question Number : 1 Question Id : 32718718322 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 Poly ADP-Ribose Polymerase (PARP) and PARP inhibitors (PARPi)? Briefly describe their mechanism of action and clinical uses. [4+6]

**Question Number : 2 Question Id : 32718718323 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 10**

- List various approaches for gene sequencing. [4]
- Define variants and outline variant discovery workflow. [2+4]

**Question Number : 3 Question Id : 32718718324 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) Genomic Databases. [3]
- b) Genomic Browsers. [2]
- c) Write down their clinical applications. [5]

**Question Number : 4 Question Id : 32718718325 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 10**

Explain Epigenetics. Describe the mechanism behind Epigenetics and give three examples as applicable to genetic disorders. [3+(4+3)]

**Question Number : 5 Question Id : 32718718326 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 10**

Name a database using Artificial Intelligence (AI) for dysmorphological diagnosis. Write down the challenges of using Artificial Intelligence (AI) and Machine Learning (ML) in human dysmorphology. [1+9]

**Question Number : 6 Question Id : 32718718327 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 10**

Discuss the molecular basis of Down's syndrome. How will you do a rapid diagnosis of Down's syndrome in a prenatal setting? [5+5]

**Question Number : 7 Question Id : 32718718328 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 pseudo-deficiency alleles? Explain with at least two examples. Mention its role in genetic counseling. [4+4+2]

**Question Number : 8 Question Id : 32718718329 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) Role of bio-banks for genetic conditions. [5]

b) Recent guidelines for establishment of bio-banks in India. [5]

**Question Number : 9 Question Id : 32718718330 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) Homeobox genes and their relevance in human genetic disorders. [5]

b) How they are studied? Give examples. [5]

**Question Number : 10 Question Id : 32718718331 Question Type : SUBJECTIVE Consider As**

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

**Correct Marks : 10**

Discuss the causes of aneuploidy and explain by a diagram the segregation of chromosomes during gamete formation in a balanced reciprocal translocation carrier. [5+5]