

# National Board of Examinations

**Question Paper Name :** DNB Pharmacology Paper4  
**Subject Name :** DNB Pharmacology Paper4  
**Duration :** 182  
**Total Marks :** 100  
**Display Marks:** No

**Maximum Instruction Time :** 0  
**Is Section Default? :** No

**Question Number : 1 Question Id : 32718745376 Consider As Subjective : Yes**

**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. Define metabolomics. Discuss their role in drug development giving suitable examples. [3+7]

**Question Number : 2 Question Id : 32718745377 Consider As Subjective : Yes**

What is precision medicine? Describe the precision medicine approach in critical care medicine. [3+7]

**Question Number : 3 Question Id : 32718745378 Consider As Subjective : Yes**

Mention the different types of COVID vaccines. Describe the phases of clinical trials for vaccine development. [3+7]

**Question Number : 4 Question Id : 32718745379 Consider As Subjective : Yes**

Describe the following:

- a) Pharmacometrics. [5]
- b) Pharmacogenomics. [5]

**Question Number : 5 Question Id : 32718745380 Consider As Subjective : Yes**

What is a multicentric clinical trial? Describe the methods and issues in conduct of a multicentric clinical trial. [3+(4+3)]

**Question Number : 6 Question Id : 32718745381 Consider As Subjective : Yes**

Describe the applications, ethical concern and limitations of artificial intelligence in drug development and medication use. [4+3+3]

**Question Number : 7 Question Id : 32718745382 Consider As Subjective : Yes**

What is essential medicine concept? Describe the advantages and issues in adherence to 'National list of essential medicines' in Indian healthcare system. [3+(4+3)]

**Question Number : 8 Question Id : 32718745383 Consider As Subjective : Yes**

Define Pharmacoeconomics. Describe different types of Pharmacoeconomic studies. [3+7]

**Question Number : 9 Question Id : 32718745384 Consider As Subjective : Yes**

Describe the following:

- a) Randomization and blinding in clinical trials. [5]
- b) Organ-on-a-chip. [5]

**Question Number : 10 Question Id : 32718745385 Consider As Subjective : Yes**

Describe the current recommendations and recent advances in the treatment of type 2 diabetes mellitus. [5+5]