

National Board of Examinations

Question Paper Name :	DNB Biochemistry Paper4
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DNB Biochemistry Paper4

Group Number :	1
Group Id :	3271871295
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 Biochemistry Paper4

Section Id :	3271871298
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 :	3271871302
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 32718712002 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) Describe basic principle of Western blotting and its applications. [5]
- b) Discuss the types and uses of hybridisation techniques used in molecular diagnostics. [5]

Question Number : 2 Question Id : 32718712003 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 the principle and uses of the following techniques in clinical laboratory:

- a) Tandem mass spectrometry. [5]
- b) Flow cytometry. [5]

Question Number : 3 Question Id : 32718712004 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) How will you compare an "open" versus "close" automated analyser? [3]
- b) What are the different techniques used for electrolyte analysis? [3]
- c) Differentiate between random access and continuous flow automated analyser. [4]

Question Number : 4 Question Id : 32718712005 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 the principle and applications of Confocal microscopy. [5]
- b) Enlist various components of single beam and double beam spectrophotometer. [5]

Question Number : 5 Question Id : 32718712006 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 real time PCR under following headings:

- a) Principle. [2]
- b) Components of real time assay. [2]
- c) The mechanism of various types of dyes used. [2]
- d) Applications with respect to diagnosis of COVID infection. [4]

Question Number : 6 Question Id : 32718712007 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 blood gas analysis with respect to:

- a) Specimen requirement, collection procedure and site of collection. [2.5]
- b) Preferred anticoagulant and transportation of sample to laboratory. [2.5]
- c) Preanalytical errors and their effect in blood gas analysis. [2.5]
- d) Causes of metabolic alkalosis and compensatory mechanisms. [2.5]

Question Number : 7 Question Id : 32718712008 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 in detail about the non-invasive prenatal testing (NIPT) and its clinical implications? [10]

Question Number : 8 Question Id : 32718712009 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) Therapeutic drug monitoring. [5]
- b) Recombinant DNA technology. [5]

Question Number : 9 Question Id : 32718712010 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 bioinformatic tools used to analyse transcriptomic data. [5]
- b) Explain next generation sequencing and its applications. [5]

Question Number : 10 Question Id : 32718712011 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) Importance of BLAST NCBI. [5]
- b) Feluda test. [5]