National Board of Examinations

Question Paper Name :	DNB Biochemistry Paper4
Subject Name :	DNB Biochemistry Paper4
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Share Answer Key With Delivery Engine :	No
Actual Answer Key :	No

DNB Biochemistry Paper4

Group Number :	1
Group Id :	327187625
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 :	327187628
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 :	327187632
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 3271875332 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

1. Describe the basic principle of Mass Spectrometry (MS) and tandem MS. Write about their applications in analysing the amino acid/protein and metabolomics. Add a short note on MALDI-TOF. [5+3+2]

Question Number : 2 Question Id : 3271875333 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) Two-way Laboratory Information System (LIS). [5]

b) Artificial intelligence (AI) in laboratory diagnostics. [5]

Question Number : 3 Question Id : 3271875334 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 quantitative PCR (q-PCR)? How is Ct (critical threshhold) of q-PCR determined? How does q-PCR differ from reverse transcriptase PCR? Write the basic principle of molecular beacons in q-PCR. [1+2+2+3]

b) Define Multiplex Ligation-dependent Probe Amplification (MLPA). [2]

Question Number : 4 Question Id : 3271875335 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Describe briefly the principle and clinical applications of:

a) HPLC. [5]

b) Flow cytometry. [5]

Question Number : 5 Question Id : 3271875336 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Describe types of stem cells and their applications in clinical medicine. [5+5]

Question Number : 6 Question Id : 3271875337 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 of Amplification-refractory mutation system (ARMS)-PCR. How is primer for an ARMS-PCR designed? [6+4]

Question Number : 7 Question Id : 3271875338 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 the role of viruses in cancer pathogenesis. [5]

b) Define a tumor marker. List four properties of an ideal tumour marker. [5]

Question Number : 8 Question Id : 3271875339 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Describe how structure of collagen is stabilised after its synthesis. Enumerate the genetic and non-genetic mechanisms of collagen related disorders. [5+5]

Question Number : 9 Question Id : 3271875340 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 the major differences and similarities between:

a) Colorimeter and spectrophotometer. [4]

b) Chemiluminiscence and electro-hemiluminiscence. [3]

c) pH meter and electrolyte anlyser (ion selective). [3]

Question Number : 10 Question Id : 3271875341 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Describe mechanisms of signal transduction of insulin. How is insulin signal amplified during transduction? How can any defect of hormone signaling be detected by biochemical experimentation(s)? [3+2+5]