National Board of Examinations

Question Paper Name :	DNB Biochemistry Paper3
Subject Name :	DNB Biochemistry Paper3
Creation Date :	2023-04-26 22:40:28
Duration :	180
Share Answer Key With Delivery Engine :	No
Actual Answer Key :	No

DNB Biochemistry Paper3

Group Number :	1
Group Id :	327187624
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 Paper3

Section Id :	327187627
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 :	327187631
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 3271875322 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 initiation phase of DNA replication in prokaryotes and how does it differ in eukaryotes. [3+3]

b) Explain base excision repair system. [4]

Question Number : 2 Question Id : 3271875323 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) p53 as guardian of the genome. [5]

b) miRNAs and their functions. [5]

Question Number : 3 Question Id : 3271875324 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) Methylation specific PCR. [5]

b) Different methods of detection of protein band(s) following Western blotting. [5]

Question Number : 4 Question Id : 3271875325 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 principle of different types of Nucleic Acid Amplification Tests (NAATs) available for the diagnosis of SARS-CoV-2. Explain advantages and limitations of each technique. [6+4]

Question Number : 5 Question Id : 3271875326 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 MHC restriction. Explain the role of MHC-II in T-cell help. [1+3]

b) Write differences between IgG and IgM with reference to (i) antigen affinity and avidity, (ii) order of protein structure and (iii) effector functions. [2+2+2]

Question Number : 6 Question Id : 3271875327 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) Explain the mode of action of protein and RNA vaccines. [6]

b) How do cancer cell escape immune surveillance mechanisms? [4]

Question Number : 7 Question Id : 3271875328 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 the molecular mechanisms of generation of antibody diversity and affinity maturation. Why is hyper-IgM syndrome often associated with failure of affinity maturation? [(5+3)+2]

Question Number : 8 Question Id : 3271875329 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) Mechanism and importance of immunological tolerance. [5]

b) Role of immunotherapy in cancer. [5]

Question Number : 9 Question Id : 3271875330 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 function of any two posttranslational modifications giving suitable examples. [5]

b) Explain the role of telomerases in cancer. [5]

Question Number : 10 Question Id : 3271875331 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 in detail with one example each about regulation of eukaryotic gene expression by (i) gene amplification, (ii) differential splicing, (iii) RNA editing and (iv) modifying translational rate. [2+2+2+4]