BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – B.Tech.(CSE)-2018/B.Tech.(CSE)-2019
Course Name – Biology
Course Code - BSC(CSE)701
(Semester VII)

Full Marks : 70 **Time : 3:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Which enzyme unwounds DNA?

a) Helicase b) ligase
c) Exonuclease d) Topoisomerase

(ii) What is the name given to the method of making DNA from RNA?

a) Reverse transcriptase b) Reverse transcription
c) Reverse Replication d) Reverse Translation

(iii) Among the given which is not protein sequence database?

a) PIR b) PSD
c) EMBL d) SWISS PORT

(iv) A multi subunit protein will have

a) quaternary structure b) tertiary structure
c) secondary structure d) primary structure

(v) As per you when are two sequences are said to be homologous?

a) they have diverged from a common ancestor. b) their alignments share 30% identity or more.
c) they belong to the same fold family. d) they have converged to share similar functional properties.

(vi) According to you what does the Branch point in tree denotes?

a) divergence event b) Convergence event
c) Multivergence event d) No eventual significance

(vii) Human genome contain how many nitrogenous bases?

a) 6 billion base pairs. b) 3.3 billion base pairs.
c) 3.3 billion base d) 3.3 billion amino acid sequence

(viii) Which technique was used to determine the double-helix structure of DNA?

a) Electrophoresis b) Chromatography
c) Centrifugation d) X-ray crystallography

(ix) Which of these are example of protein engineering?

a) Co-vaccine b) Covisheald

c) Humulin
d) BT- cotton

(x) Among these which is basic amino acid?

a) Glutamic acid
b) Aspertic acid
c) Arginine,
d) Glycine

(xi) Which of the following is not possible about secondary structure of protein?

a) The hydrophilic/hydrophobic character of amino acid residues is important to secondary structure.
b) The ability of peptide bonds to form intramolecular hydrogen bonds is important to secondary structure
c) The alpha helix, beta pleated sheet and beta turns are examples of protein secondary structure.
d) The steric influence of amino acid residues is important to secondary structure.

(xii) What structure has hydrogen bonds between polypeptide chains arranged side by side?

a) Primary structure
b) Î±-helix
c) Î²-pleated sheets
d) Tertiary structure

(xiii) Which is the amino acids containing aliphatic R and non polar groups?

a) Phenylalanine, tyrosine, and tryptophan
b) Lysine, arginine, histidine
c) Glycine, alanine, leucine
d) Serine, threonine, cysteine

(xiv) Recognize the factor not responsible for the denaturation of protein?

a) Heat
b) Charge
c) pH change
d) Organic solvents

(xv) nucleoside consist of which of these?

a) Nitrogenous base
b) Purine or pyrimidine base + sugar
c) Purine or pyrimidine base + phosphorous
d) Purine or pyrimidine base + sugar + Phosphorous

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Write down the difference between 1: Nucleoside and Nucleotide (3)
3. Explain the role of DNA polymerase, Helicase, Topoisomerase enzyme. (3)
4. Distinguise between Leading strand and Lagging strand (3)
5. Illustrated the names and the bones of upper arm. (3)
6. Write in brief about the structure of Neucleotide (3)

OR

Write a short notes about the structure of Nucleosome (3)

Group-C

(Long Answer Type Questions) 5 x 8=40

7. Write a Short notes on Bioinformatics and its application to Human Mankind. (5)
8. Write a short notes on Human genome project (5)
9. Diagrammatically represent different components of Blood (5)
10. Difference between Secondary and tertiary structure (5)
11. Describe the structure of haemoglobin (5)
12. Evaluate the difference between Hamming and Edit distances and state the features of Smith waterman algorithm? (5)
13. Illustrated Phylogenetic tree with its importance (5)
14. Biology is important in computer science- Justify your answe with suitable example (5)

OR

Criminal identification by DNA fingerprinting process is the application of bioinformatics- Justify (5)

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