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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
 [AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
 Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 90009

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Fifth Semester

Biotechnology

U19BT513 – COMPUTATIONAL BIOLOGY

(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels	K1 – Remembering	K3 – Applying	K5 - Evaluating
(KL)	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Which kind of information can you find in GenBank and what format is commonly used for storing sequence data in biological databases?	2	K1	CO1
2.	What is a substitution matrix? Name a commonly used substitution matrix in protein sequence alignment.	2	K1	CO1
3.	Define is a Hidden Markov Model (HMM).	2	K2	CO2
4.	List out the applications of Systems Biology.	2	K2	CO2
5.	What is a phylogenetic tree, and what does it represent?	2	K2	CO3
6.	Recall molecular phylogenetics.	2	K1	CO3
7.	How is protein structure related to it's function?	2	K2	CO4
8.	Spell out the significance of disulfide bonds in protein structure?	2	K2	CO4
9.	Explain scoring function in molecular docking.	2	K2	CO5
10.	What is N50 in the context of genome assembly?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Explain the differences between sequence, structural, and functional databases with examples.	13	K1	CO1

