QP Code: PV25B006

Reg. No : ....

Name : ....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

II SEMESTER (CBCSS-VPG) DEGREE EXAMINATION, MARCH 2025
M Voc Applied Biotechnology
SDC2AB04 : BIOINFORMATICS
2024 Admission Onwards

Time:3 Hours   Maximum Weightage:30

Part A

*Short answer type questions: Answer **any four** questions. Weightage **2** for each question.*
(4x2 = 8 Weightage)

1. Define Bioinformatics.   [BTL1]

2. Define SRS.   [BTL1]

3. List RNAi dtabases.   [BTL1]

4. What are match, mis-match, and gap scores in sequence alignment?   [BTL2]

5. How do Rasmol, PYMOL and SwissPDB viewer tools differ in terms of features   [BTL3]
   and functionalities?

6. How is Clustal used in phylogenetic tree construction?   [BTL5]

7. Assess the STAMP method of structure comparison.   [BTL4]

Part B

*Short essay-type questions: Answer **any four** questions. Weightage **3** for each question.*
(4x3 = 12 Weightage)

8. Explain FASTA.   [BTL2]

9. How is a dot plot constructed for two sequences?   [BTL2]

10. How does HTS differ from traditional sequencing methods like Sanger   [BTL3]
    sequencing?

11. Compare protein-ligand docking differ from protein-protein docking?   [BTL3]

12. What is the role of Polymerase Chain Reaction (PCR) in analyzing genome   [BTL3]
    libraries?

13. Analyse, the significance of cluster validation techniques in bioinformatics.   [BTL4]

14. How do ORFs differ between eukaryotic and prokaryotic genomes?   [BTL4]

Turn Over

Part C

*Essay-type questions: Answer **any two** questions. Weightage **5** for each question.*
(2x5 = 10 Weightage)

15. What is sequence alignment in Bioinformatics?   [BTL1]

16. Briefly explain the file formats in Bioinformatics.   [BTL2]

17. How are phylogenetic trees used to study evolutionary history?   [BTL3]

18. What role does data analysis play in Bioinformatics?   [BTL4]

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