STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI –600 086
(For candidates admitted from the academic year 2019 – 2020 & thereafter)

SUBJECT CODE: 19BI/PE/IB23

M. Sc. DEGREE EXAMINATION, APRIL 2023
SECOND SEMESTER

COURSE : ELECTIVE
PAPER : INTRODUCTION TO BIOINFORMATICS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS **(20 x 1=20)**

1. Write amino acid name for following single letter code (a) R; (b) E; (c) K; (d) Q.
2. List out the goals of bioinformatics.
3. Define SRS.
4. Summarize about protein database.
5. Define E-value.
6. Write about progressive alignment.
7. Define dot matrix.
8. List out the features of Rasmol.
9. Define cladogram.
10. What is the purpose of a phylogenetic tree?
11. Define phenetics.
12. Classify tree representation.
13. List the features of GENSCAN.
14. Define Genome.
15. What are restriction sites in DNA?
16. Define ORF.
17. Define alpha helix.
18. What is the principle of SDS-PAGE?
19. What is the function of restriction enzyme?
20. What are the types of restriction mapping?

SECTION – B

ANSWER ANY FOUR QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 500 WORDS. ALL QUESTIONS CARRY EQUAL MARKS. **(4 x 10 = 40)**

21. Summarize about information retrieval from biological databases.
22. Discuss about the applications of Bioinformatics in medicine.
23. Explain about the steps in Multiple sequence alignment.
24. Write a short note on (a) Bootstrapping (b) Phylogram (c) cladistics.
25. List out any three genomic analysis tools.
26. How do you identify repeat sequences of DNA?
27. Compare any five tools to perform restriction mapping.

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SECTION – C

ANSWER ANY TWO QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 1200 WORDS. ALL QUESTIONS CARRY EQUAL MARKS. (2 x 20 = 40)

28. Classify Biological databases and its applications.
29. Elaborate the steps in BLAST algorithm.
30. Briefly describe about the methods of Phylogenetic tree construction.
31. Discuss about the organization of protein structure.

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