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

SUBJECT CODE: 19BI/PC/AL34

M. Sc. DEGREE EXAMINATION, NOVEMBER 2021
BIOINFORMATICS
THIRD SEMESTER

COURSE : CORE
PAPER : ALGORITHMS OF BIOINFORMATICS
TIME : 180 MINUTES **MAX. MARKS: 100**

SECTION - A

ANSWER ANY FIVE QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 500 WORDS. ALL QUESTIONS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY (5 x 20 = 100 MARKS)

1. a) How DNA replication can be addressed computationally? Describe with diagram.
   b) Classify the Big-O-Notation in brief
2. How to address partial digest problem in restriction mapping?
3. Describe the following in detail.
   a) Profiles and consensus
   b) How to find regulatory motifs using hamming distance?
4. Illustrate how to find a shortest string from a given set of strings and its application in DNA sequencing.
5. Comment on algorithms to minimize the squared error distortion in finding k center points.
6. Write a detailed note on Artificial Neural Networks.
7. Illustrate the importance of keyword and suffix trees in pattern matching application.

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