

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**

**(For candidates admitted from the academic year 2015 – 2016 & thereafter)**

**SUBJECT CODE: 15BI/PC/AB34**

**M. Sc. DEGREE EXAMINATION, NOVEMBER 2019**

**BIOINFORMATICS**

**THIRD SEMESTER**

**COURSE : CORE**

**PAPER : ALGORITHMS FOR BIOINFORMATICS**

**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION - A**

**ANSWER ANY TEN QUESTIONS:**

**(10x10=100)**

1. Define Algorithm. Explain the biological versus computer algorithms in detail.
2. Comment on Big-O-Notation.
3. Write a short note on algorithm design techniques.
4. Define restriction mapping. Short note on practical and impractical restriction mapping algorithm.
5. Comment shortly about median string and motif finding problem.
6. Describe in detail about local sequence alignment.
7. Explain in detail about graphs and genetics.
8. Write a note on shortest superstring problem in DNA sequencing.
9. Explain hierarchical and k-means clustering.
10. How to reconstruct trees from additive matrices? Explain.
11. Discuss the concept of artificial neural networks.
12. Write a note on BLAST: comparing a sequence against a database.

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