

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



**B.Sc. DEGREE EXAMINATION – ADVANCED ZOOLOGY AND BIOTECHNOLOGY**

**SIXTH SEMESTER – APRIL 2019**

**16UZO6MS01– BIOINFORMATICS**

Date: 02-04-2019  
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

**PART A (10 × 2 = 20 marks)**

**Answer ALL the questions**

1. Write down the significance of Pharmacogenomics.
2. Define 'Bioinformatics' according to NIH.
3. Define the following: (i) Metadata (ii) Crawler.
4. What is a taxonomy with reference to controlled vocabulary?
5. Define edit distance. How is it measured?
6. Differentiate between phylogram and ultrametric tree with diagrams.
7. Mention the applications of the following bioinformatics tools:  
(i) GENSCAN (ii) SpotfirePro
8. How are Affymetrix microarrays prepared?
9. What are dbSNP and PolyPhen? Give their applications.
10. Give two examples of protein structure visualization tools.

**PART B (4 × 10 = 40 marks)**

**Answer any FOUR of the following questions**

11. Elaborate on how the Human Genome Project is a boon to the human society.
12. Explain the features of flat file databases giving suitable examples.
13. Write a note on the BLAST mentioning the different types and their applications.
14. Describe the different gene prediction methods with suitable examples of software used for the same.
15. Give an account of the bioinformatics databases and software for drug discovery and design.
16. Discuss the following:  
(i) Object-oriented databases (ii) PHYLIP.

**PART C (2 × 20 = 40 marks)**

**Answer any TWO of the following questions**

17. Write an essay on the overview, applications and challenges of Bioinformatics in India.
18. Describe the different methods of multiple sequence alignment giving examples of software tools used for the same.
19. Write notes on the following:  
(i) Search Engines and types of searches (ii) Relational databases
20. Discuss the role of bioinformatics in computer-aided drug design.

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