



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – ZOOLOGY

THIRD SEMESTER – NOVEMBER 2017

16PZO3ES01 – BIOINFORMATICS

Date: 10-11-2017

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

Part-A

Answer all the questions

(10×2=20 Marks)

1. Differentiate between generalized and specialized databases.
2. What is the significance of MMDB database?
3. Define the following: (i) Search index (ii) Web crawling.
4. What is controlled vocabulary?
5. What is meant by sequence alignment?
6. Mention the significance of Clustal Omega and JalView.
7. Describe the two types of *ab initio* gene prediction methods.
8. Mention the significant features of GENSCAN.
9. Discuss the applications of the following tools: (i) PolyPhen (ii) Cn3D.
10. Give any two examples of software used for drug discovery and design.

Part-B

Answer any FOUR questions

(4×10=40 Marks)

11. Give an account of protein databases with examples.
12. Explain the following: (i) Flat file databases (ii) Metadata.
13. Describe the hierarchical method of multiple sequence alignment.
14. Write a note on gene prediction software tools.
15. Discuss the pharmacogenomics of drug metabolizing enzymes.
16. Write notes on:
 - (i) Virtual high-throughput screening
 - (ii) Types of errors in biological data.

Part-C

Answer any TWO questions

(2×20=40 Marks)

17. Explain the following:
 - (i) Structural databases
 - (ii) Database management system.
18. Enlist the steps and describe the different methods used for phylogenetic tree construction.
19. Discuss the different types of microarrays. Add a note on data analysis strategies and applications for microarray technology.
20. Explain the following:
 - (i) Protein structure visualization tools.
 - (ii) Data integration methodologies.
