LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – **ZOOLOGY**

THIRD SEMESTER – **APRIL 2023**

PZO 3601 – BIOINFORMATICS

Date: 08-05-2023   Dept. No.   Max. : 100 Marks
Time: 01:00 PM - 04:00 PM

PART A

Answer ALL the questions   **(10×2=20 Marks)**

1. Expand the following: (i) NCBI   (ii) OMIM.
2. What are specialized databases? Give an example.
3. Give two examples of flat file databases.
4. What is meant by controlled vocabulary?
5. Differentiate between local and global sequence alignment.
6. What is meant by edit distance?
7. Give the applications of GENSCAN and Clustal Omega.
8. Enlist the steps in gene prediction.
9. What is meant by molecular docking in drug discovery?
10. Define virtual high-throughput screening.

PART B

Answer any FOUR questions   **(4×10=40 Marks)**

11. Give an account of database management systems with examples.
12. Write a note on BLAST.
13. Describe the identification of open reading frames using ORF Finder.
14. Explain the steps in the drug discovery and development pipeline.
15. Discuss the role of pharmacogenomics in personalized medicine.
16. Write notes on types of phylogenetic trees.

PART C

Answer any TWO questions   **(2×20=40 Marks)**

17. Describe nucleic acid sequence databases and protein sequence databases with examples.
18. Give a detailed account of the phylogenetic tree construction methods.
19. Discuss microarray technology and its applications.
20. Explain the working of search engines and the different types of searches.

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