LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – ZOOLOGY

THIRD SEMESTER – NOVEMBER 2022

PZO 3601 – BIOINFORMATICS

Date: 02-12-2022   Dept. No.   Max. : 100 Marks
Time: 09:00 AM - 12:00 NOON

Part A

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

1. What are composite databases? Give two examples.
2. Give the applications of the following databases: (i) UniProt   (ii) MMDB
3. What is the significance of a search index?
4. What is meant by database management system?
5. Explain the maximum parsimony method of tree drawing.
6. What is PHYLIP?
7. Give two examples of microarray analysis software.
8. Explain how differential gene expression studies of healthy cells and cancer cells be performed using microarrays.
9. Why is it important to perform lead optimization in drug discovery?
10. Give two examples of drug databases.

Part B

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

11. Give an account of the significant features of the NCBI database.
12. What is controlled vocabulary? Explain the types of controlled vocabulary with examples.
13. Explain the distance-based methods of phylogenetic tree construction.
14. Write a note on the two types of microarrays.
15. Discuss the analysis of single nucleotide polymorphisms using bioinformatics resources.
16. Write a note on relational and object –oriented databases with suitable examples.

Part C

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

17. What are the different types of databases? Describe specialized and structural databases giving examples.
18. Enlist the steps in building a multiple alignment and discuss the heirarchical multiple sequence alignment method.
19. Discuss the different types of methods used for gene prediction giving detailed description and examples of gene prediction software.
20. Give a detailed account of computer-aided drug design.

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