School of Biological and Life sciences
Department of Biological and Life Sciences
Mid Term Examination

Exam Date: 29 Sep 2023
Time : 90 Minutes
Marks : 50

Sem V - C2UC503B - Fundamentals of Bioinformatics
Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1) Explain how SFTP enhances the security of data transfer compared to traditional FTP. Provide an example scenario to illustrate its significance.
K2 (2)

2) Explain the importance of genome databases in the field of genomics. Describe how researchers can utilize these databases to study evolutionary relationships among different species.
K1 (3)

3) Explain the significance of nucleic acid databases in biological research. Provide examples of types of information these databases contain and how they contribute to genomics studies.
K2 (4)

4) Explain the role of protein sequence and structure databases in bioinformatics. Discuss how these databases contribute to understanding protein function, interactions, and structure-function relationships.
K2 (6)

5) Discuss chronogram, and how does it differ from a phylogram in the context of phylogenetic trees?
K3 (6)

6) Discuss the applications of protein structure databases in understanding diseases. Explain how these databases facilitate the exploration of disease-related mutations, interactions, and potential drug targets.
K3 (9)

7) Describe the significance of databases focusing on metabolic pathways. Explain how pathway databases integrate information from various sources to provide a comprehensive view of biological processes. Provide an example of a well-known metabolic pathway database.
K4 (8)

8) Describe the process of submitting genetic sequence data to the NCBI GenBank database. Explain the steps researchers need to follow, from data preparation to obtaining an accession number.
K4 (12)

OR

Explain the importance of the NCBI PubMed database in biomedical research. Describe how researchers can use PubMed to search for scientific literature related to a specific topic.
K4 (12)