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**School of Biological and Life sciences**

Bachelor of Science Honours in Biomedical Science

Semester End Examination - Nov 2023

Duration : 180 Minutes

Max Marks : 100

**Sem V - C2UA501B - Bioinformatics**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Discuss the challenges in aligning large sets of divergent sequences in multiple sequence alignment K1 (2)
- 2) What is a table in a relational database? Provide an example. K2 (4)
- 3) Explain how the representation of metabolic pathways is standardized in databases. K2 (6)
- 4) How can a deeper understanding of protein structures lead to more effective and targeted drug development? K3 (9)
- 5) Discuss the challenges in predicting protein tertiary structure accurately. K3 (9)
- 6) Discuss the importance of pathway databases in understanding cellular processes K5 (10)
- 7) Discuss the significance of data sharing and collaboration among different biological databases. K4 (12)
- 8) Describe the bioinformatics tools and databases used in the analysis of 2-D gel electrophoresis data. K5 (15)
- 9) How can integrated analysis of genomic, transcriptomic, and proteomic data enhance our understanding of complex biological processes? K5 (15)
- 10) Discuss the significance of data sharing and collaboration among different biological databases. K6 (18)