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School of Biological and Life sciences**Master of Science in Biochemistry
Semester End Examination - Nov 2023****Duration : 180 Minutes
Max Marks : 100****Sem III - MSDB6019 - Computational Biology**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) What does PDB stand for, and what type of data does it store? K1 (2)
- 2) Compare CATH (Class, Architecture, Topology, Homology) and SCOP (Structural Classification of Proteins) databases in classifying and analyzing protein structures. How do these databases aid in understanding protein evolution and function? K2 (4)
- 3) Describe the process of drug designing, highlighting the steps involved in the identification and optimization of lead compounds for potential therapeutic targets. K2 (6)
- 4) What is molecular medicine, and how does it integrate genomics and bioinformatics in disease diagnosis and treatment? K3 (9)
- 5) Throw a light on 'Uniprot' K3 (9)
- 6) Name few database that stores information about protein-protein interactions. K5 (10)
- 7) With the help of algorithm used , find out the Global alignment for sequences for 1. AATCCCGT 2. ATTCTGGC (SCORE: Gap+2 , Match +1 , Mis match -1) K4 (12)
- 8) Explain the importance of metabolic pathway comparisons in evolutionary studies. K5 (15)
- 9) How do enzymes play a crucial role in catalyzing biochemical reactions? K5 (15)
- 10) Explain the concept of drug designing and its importance in the pharmaceutical industry. K6 (18)