



SCHOOL OF BIOSCIENCES AND TECHNOLOGY
CONTINUOUS ASSESSMENT TEST - II
WINTER SEMESTER 2025-2026

Programme Name & Branch : MSI Biotechnology
Course Code and Course Name : TBIT304L; Bioinformatics
Slot(s) : B2 +TB2
Faculty Name(s) : Dr. Kuntal Pal; Dr. Rajasekaran R
Class Number(s) : 3476
Date of Examination : 16.03.26
Exam Duration : 90 minutes
Maximum Marks: 50

General instruction(s):

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- Answer All Questions
- Course Outcomes Statements:
 - CO. 1: Familiarise with basic bioinformatics tools.
 - CO. 2: Translate knowledge of bioinformatics and biological databases.
 - CO. 3: Use relevant tools, servers, biological database and apply them in appropriate fields.

Q. No	Question	M	CO	BL
1.	Analyse the need for heuristic algorithms in sequence database searching. Compare BLAST and FASTA and inspect how PSI-BLAST improves sequence detection	10	1	4
2.	Elaborate the major molecular phylogenetic tree construction methods and discuss the biological situations in which they are applied.	10	2	6
3.	Differentiate between rooted and unrooted phylogenetic trees and justify why unrooted trees are commonly constructed in molecular phylogenetic analysis. Interpret how tree reliability is assessed	10	1	5
4.	Illustrate the major gene prediction approaches and outline the representative tools used in each method.	10	2	2
5.	Examine how different levels of protein folding information aid in predicting the secondary structure of proteins and simplify with any two prediction algorithms	10	3	4
