



Progressive Education Society'
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
End Semester Examination: Mar/Apr 2025
Faculty: Science and Technology

Program: B.Sc. Biotech (04)
Program (Specific): Biotechnology
Class: T. Y. B. Sc.
Name of the Course: Bioinformatics
Course Code: 24 BBT-605

Semester: VI

SET: - A
Course Type: Core
Max. Marks: 35
Max Time: 2 Hr

Instructions to the candidate:

- 1) *There are 4 sections in the question paper. Write each section on separate page.*
- 2) *All Sections are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw a well labelled diagram wherever necessary.*

SECTION: A

Q1) Answer any FIVE of the following (5/6)

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1. What is E value in BLAST?
2. Define bioinformatics.
3. Name any two types of file formats used in bioinformatics.
4. Define pair-wise alignment with one example.
5. What is Next Generation Sequencing (NGS)?
6. What is domain of a protein?

SECTION: B

Q2) Answer any FIVE of the following (5/6)

10

1. What is UniProt?
2. Enlist any two nucleic acid databases.
3. Define heuristic algorithm with an example.
4. Define Multiple Sequence Alignment (MSA). Mention any one tool used for MSA.
5. What is EMBL?
6. What is FASTA tool?

[P.T.O.]

SECTION: C

Q3) Answer any TWO of the following (2/4)

8

1. What are literature databases? Explain MEDLINE and PubMed.
2. Elaborate on Swiss PDB Viewer (SPDBV) tool.
3. Distinguish between CATH and SCOP databases.
4. What is PDBsum? Explain PDBsum in detail.

SECTION: D

Q4) Answer any TWO of the following (2/4)

12

1. Explain composite database with a suitable example.
2. What is BLAST? Explain BLAST tool in detail.
3. Explain in detail Next Generation Sequencing (NGS) and microarray techniques.
4. Describe Protein Data Bank (PDB).