

No. of Printed Pages : 03

Roll No.

35004

M.Sc. (NEP 2020)
EXAMINATION, 2025
(Second Semester)
BIOTECHNOLOGY
M24-BTY-204
Bioinformatics

Time : 3 Hours]

[Maximum Marks : 70

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Write short notes on the following : $7 \times 2 = 14$

- (i) Biological databases
- (ii) BLAST
- (iii) Multiple sequence alignment
- (iv) BLOSUM
- (v) Logical operators
- (vi) Dot matrix plots
- (vii) EMBL.

Unit I

- 2. (a) Discuss the computer programming and generations. 7
- (b) Write about the MS office and its various tools. 7
- 3. Write about computer languages C, JAVA and SQL. 14

Unit II

- 4. Explain the classification and features of biological databases with examples. 14

5. Discuss the following :

- (a) DDBJ and EMBL 6
- (b) GenBank and PIR 4
- (c) Scope of Bioinformatics. 4

Unit III

6. Write notes on the following : $7 \times 2 = 14$

- (a) Clustal W
- (b) PAM and BLOSSUM.

7. Write a detailed note on sequence comparison methods and molecular phylogeny. 14

Unit IV

8. Discuss the following in detail : $7 \times 2 = 14$

- (a) FASTA and BLAST
- (b) Viterbi algorithm and Baum Welch algorithm.

9. Explain the BLAST and its types along with PSI BLAST and RPS BLAST. 14

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