

(i) Printed Pages : 3

Roll No.

(ii) Questions : 9

Sub. Code :

2	5	9	5	0
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Exam. Code :

0	4	3	7
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**M.Sc. Bio–Technology 3rd Semester
(2125)**

BIOINFORMATICS

Paper : MBIO–305

Time Allowed : Three Hours]

[Maximum Marks : 80

Note :— Attempt five questions in all selecting one question from each unit. Q.1 is compulsory.

1. Answer briefly:

(a) Identity

(b) Secondary databases

(c) Ensembl

(d) RefSeq

(e) Rooted tree

(f) Clade

(g) DIP

(h) STS.

2×8=16

UNIT—I

2. Write notes on:

(i) PubMed

(ii) FASTA format

(iii) PDB

(iv) Expressed sequence tags 16.

3. (a) Explain the notion of homology. 8
- (b) Differentiate between Orthologues and Paralogues with suitable examples. 8

UNIT—II

4. (a) Discuss the construction of BLOSUM matrices. 8
- (b) Differentiate between Gap penalty and Affine Gap penalty. 8
5. (a) Explain the algorithm of BLAST. 8
- (b) Discuss the statistical significance of E value and Bit Score in BLAST. 8

UNIT—III

6. (a) Elaborate on the progressive method of Multiple sequence alignment. 8
- (b) Discuss the UPGMA method for phylogenetic analysis. 8

7. (a) Differentiate between Cladogram and Phylogram. Draw suitable diagram for the same. 8
- (b) Write a note on the principle and applications of CLUSTALW. 8

UNIT—IV

8. Discuss the basis of prediction of protein-protein interactions by STRING. 16
9. (a) Write a note on the concept of personalized medicine based on pharmacogenomics. 8
- (b) Elaborate on the signal-based methods for gene prediction. Give suitable examples for the same. 8