

10209

LMDE/M-24
BIOINFORMATICS
Paper–BT-204

Time : Three Hours]

[Maximum Marks : 80

Note : All questions carry equal marks. Q. No.1 is compulsory.
Attempt any *one* question from each unit.

Compulsory Question

1. One line answer or full forms of following :

- (a) PDB.
- (b) EBI.
- (c) MS.
- (d) DIGE.
- (e) PSSM.
- (f) Coiled coils.
- (g) Contigs.
- (h) EST.

(8×2=16)

UNIT-I

2. Define :

- (a) Bioinformatics.
- (b) Biological Databases.
- (c) Scoring Matrices.
- (d) Profiles.

(4×4=16)

3. Difference between following :
- (a) Pairwise vs Multiple alignment. (4)
 - (b) Heuristic approach vs Exhaustive approach. (6)
 - (c) Protein Motif vs Protein Domain. (6)

UNIT-II

4. (a) Define Molecular evolution and molecular phylogenetics. (6)
- (b) Gene Phylogeny vs Species Phylogeny. (6)
- (c) Rooted Tree vs Unrooted Tree. (4)
5. (a) Note on Promoter and Regulatory elements in Eukaryotes. (5)
- (b) Note on significance of Bootstrapping. (5)
- (c) Note on Distance based Phylogenetic Tree construction. (6)

UNIT-III

6. (a) Elaborate account on Protein Structure Database. (8)
- (b) Note on any Protein structure Classification Scheme, SCOP. (8)
7. (a) What are Dihedral angles and their role in Protein Structure predictions, how Ramachandran plays role in Protein structure prediction? (8)
- (b) Note on Homology based Secondary structure prediction method Protein. (8)

UNIT-IV

8. (a) Define Proteome and role of Proteomics in modern medicine. (8)
- (b) Post translational modification, an account in Proteomics. (8)
9. (a) Give schematic diagram of DNA microarray assay experiment. (8)
- (b) Note on :
- (i) Lateral Gene Transfer. (4)
- (ii) Shot Gun approach for Genome sequencing. (4)
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