DEPARTMENT OF BOTANY

Add-On Course- Advance Diploma in Bioinformatics

SESSION: 2020-21

PAPER –I

MAXIMUM MARKS : 50   NUMBER OF UNIT :V

MANIMUM MARKS : 17

Unit-I

❖ **Computational Biology (I)**

Data mining and sequence Analysis.

Biological back ground for sequence Analysis.

Identification of protein sequence from DNA Sequence.

Searching of data base for similar new sequence.

Calculation of sequence alignment for evolutionary inferences to aid in structural and

Functional analysis.

Unit-II

❖ **Database similarity searches**

Introduction to sequence alignment

Database similarity searching

Fasta

Blasta

Unit-III

❖ **Computational Biology(II)**

Practical aspects of multiple sequence alignment.

Phylogenetic Analysis.

Unit-IV

❖ **Computational Biology(III)**

Predictive Methods using Protein and nucleic acid sequence.

Submitting DNA sequence to the Database.

Unit-V

❖ **Bioinformatics Tools**

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PAPER –II

MAXIMUM MARKS : 50   NUMBER OF UNIT :V

MANIMUM MARKS : 17

Unit-I

- ➢ Plant biotechnology and transgenic plants
- ➢ Animal biotechnology and transgenic animals

Unit-II

- ➢ Application of genetic Engineering

  - • In Agriculture

  - • In Medicine

  - • In Industry

- ➢ Patenting and intellectual property rights.

Unit-III

- ➢ Introduction to industrial techniques.
- ➢ Microbiology involved in industrial techniques.
- ➢ Strain improvements.
- ➢ Production of primary and secondary metabolites.

Unit-IV

- ➢ Waste water treatment
- ➢ Biopesticides
- ➢ Biofertilizers

Unit-V

- ➢ plant tissue culture
- ➢ Principles and methodology
- ➢ Micropropagation
- ➢ Protoplast culture
- ➢ Somaclonal and gametoclonal variations
- ➢ Synthetic seeds

Practical Scheme (2020-2021)

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Time- 3 Hrs.   **Max.Marks. 50**

1	DNA Sequencing	10
2	Tissue culture	10
3	Waste water analysis	10
4	Project	10
5	Viva	05
6	Sessional	05