DEPARTMENT OF BOTANY

Add-On Course- Diploma in Bioinformatics

SESSION: 2020-21

PAPER –I

MAXIMUM MARKS : 50 NUMBER OF UNIT :V

MINIMUM MARKS : 17

Unit I:

- **Programming in "C"**

- Overview of C

  Structure of C programme

  Array

  Expressions

  Statements

Unit- II

- **Biological database & their management**

- Database concept

  Introduction

  History

  Database management system

  Types of databases

  Flat file databases

  Relational databases

  Object oriented databases

  Hypertext databases

  Networks & databases

  Client server interface

  File transfer protocol FTP

Unit -III

- **Introduction To SQL**

  Basic structure

  Set operation

  Other SQL features

  Constraints

  Types of SQL commands

  Data correlation

  Introduction to index

Unit -IV

- **Biological databases & their management**

  - Types of biological databases

    Introduction

    Primary & secondary databases

    Genomic databases

    Nucleotide databases

    Sequence databases

    Nucleotide databases

    Protein data

- **Data analysis**

  Biological databases & its importance

  Biological database & its Function

  Biological database & application

  Text based database searching

  Similarity sear ching

Unit -V

- **Biodiversity information**

  Introduction

  It's Importance

  Problems regarding Biodiversity

  Biological databases & their management

  World biodiversity database.

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PAPER –II

MAXIMUM MARKS : 50 NUMBER OF UNIT :V

MANIMUM MARKS : 17

Unit-I

- **Genetic engineering, Enzymology involved in manipulation of genetic material**
  - Restriction Endonucleases
  - DNA polymerases
  - DNA Ligases
  - Kinases
  - Reverse Transcriptase

Unit-II

- **Vectors**
  - Plasmids
  - Cosmids
  - Phages
  - Yeast artificial chromosomes
  - Plant vectors
  - Animal vectors

Unit-III

- Techniques involved in gene manipulation
  - Electrophoresis
  - Southern and northern blotting
  - PCR and its application

Unit-IV

- RADP
- RFLPS
- DNA Sequencing
- DNA finger printing

Unit-V

- Molecular manipulation
- Isolation of target DNA
- In vivo expression techniques
- Genomics
- Proteomocs

Practical Scheme (2020-2021)

Add-On Course -Diploma in Bioinformatics

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

1	Programming on C (Multiplication of 9 & 8)	05
2	SQL command based program	10
3	Instrumentation	05
4	Project work	10
5	Spotting	10
6	Viva	05
7	Sessional	05