

DEPARTMENT OF BOTANY
Add-On Course -Certificate in Bioinformatics
SSESSION: 2020-21

PAPER –I

MAXIMUM MARKS : 50

NUMBER OF UNIT :V

MANIMUM MARKS : 17

Unit- I

Introduction to Bioinformatics:-

- ❖ What is Bioinformatics?
- ❖ Evolution of Bioinformatics
- ❖ History of Bioinformatics
- ❖ Bioinformatics Glossary (Evolving terminology for emerging trends)
- ❖ Scope of Bioinformatics

Unit- II

- ❖ Mean
- ❖ Mode
- ❖ Median
- ❖ Standard deviation
- ❖ Health statistics
- ❖ Units and Conversion
- ❖ Probablity

Unit- III

Computer:-

- ❖ Dos Command
- ❖ Introduction
- ❖ Internal Commands and external commands
- ❖ MS-word
- ❖ Different options of MS Word & its functions.
- ❖ Uses & importance.

Unit- IV

Visual Basics 6.0

- ❖ Introduction to Visual Basic
- ❖ Variables and Procedures
- ❖ Control Flow and Data Component
- ❖ Object Model
- ❖ Working with controls
- ❖ Crystal Reports
- ❖ ADO

Unit- V

MS- Excel & internet

- ❖ What is excel
- ❖ E worksheet or spreadsheet
- ❖ Starting excel 97
- ❖ Introduction of internet
- ❖ Applications of internet

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PAPER –II

MAXIMUM MARKS : 50

NUMBER OF UNIT :V

MANIMUM MARKS : 17

Unit- I

Microbiology :-

- ❖ Prokaryotic and Eukaryotic cell structure
- ❖ Microbial structure(Bacteria ,Fungus , Protozoan)
- ❖ Microbial Growth and control
- ❖ Microbial growth curve
- ❖ Growth as influenced by environmental factors

Unit -II

Microbial Nutrition :-

- ❖ Nutrition requirements
- ❖ Synthesis of culture media and culture technique
- ❖ Bacterial multiplication
- ❖ Conjugation, transformation and Transduction
- ❖ Bacterial Plasmids
- ❖ Virus: Plant viruses(mosaic viruses)
- ❖ Animal viruses(Retrovirus & SV 40)
- ❖ Bacteriophages - Lysogeny and Lytic cycles

Unit- III

Biochemistry :-

- ❖ Carbohydrates- Structure, classification and significance
- ❖ Proteins- Structure, classification and significance
- ❖ Lipids- Structure, classification and significance
- ❖ Enzymes- Structure, classification and significance,mode and mechanism of action, .

Unit- I V

- ❖ Nucleic acid
- ❖ Structure & type of DNA and RNA & its function
- ❖ Replication
- ❖ Transcription
- ❖ Translation

Unit- V

Immunology :-

- Innate immunity
- Acquired immunity
 - Primary and Secondary response
 - Organ and cell involved in immune system
 - Immunoglobulins - classes, structures and functions.
 - Compliment pathway

PRACTICAL SCHEME 2020-21

Add-on Course - Certificate in Bioinformatics

Time- 3 Hrs.

Max. Marks. 50

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|---|-----------------------------|----|
| 1 | Study of microorganism | 10 |
| 2 | Biochemical analysis | 10 |
| 3 | Biostatistics | 10 |
| 4 | Practical based on computer | 10 |
| 5 | Sessional | 05 |
| 6 | Viva voice | 05 |