

2303080403030004
Examination March 2024
MASTER OF SCIENCE (BOTANY) (THIRD SEMESTER)
BIOINFORMATICS

[Time: Three Hours]

[Max. Marks: 70]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination : **MASTER OF SCIENCE (BOTANY) (THIRD SEMESTER)**
- b. Name of the Subject : **BIOINFORMATICS**
- c. Subject Code No : **2303080403030004**

2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Attempt all parts of a question together.

Seat No:

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Student's Signature

Q.1 (Attempt any one)

16

- a. Write a detailed note on Scope and Branches of Bioinformatics.
- b. Write a detailed note on NCBI.

Q.2 (Attempt any two)

18

- a. What is INSDC? Comment on its significance in biological databases of the world.
- b. Describe ORF Finder as a tool. What is its significance in Genomics?
- c. Describe Multiple Sequence Alignment and comments on methods to execute MSA for a given Dataset.

Q.3 (Attempt any two)

18

- a. Define BLAST. Give a comparative account of various types of Blast programs available on NCBI and their applications.
- b. Discuss the working and application of BLAST tool in Genomics and Proteomics with potential applications.
- c. What is a FASTA Format? Comment on the basic scheme of FASTA Formatted sequences and its application in different bioinformatics applications.

Q.4 (Attempt any two)

18

- a. What is Molecular Phylogeny? Comment on the need and importance of Molecular phylogeny over conventional methods.
- b. Describe the various types of Phylogenetic tree that are commonly used.
- c. Compare Global versus Local Alignment and their applications.
