

2025

**M.Sc. 1st Semester Examination**

**BIOTECHNOLOGY AND  
BIOINFORMATICS**

**Paper : BTIC402X8**

**[Basic Bioinformatics, Computer Programming  
and Operating System]**

**(Practical)**

**Full Marks : 25**

**Time : Two Hours**

*The figures in the margin indicate full marks.*

1. Using the given query sequence, perform a BLAST search to identify five homologous sequences. Carry out multiple sequence alignment, select an appropriate evolutionary substitution model, and construct a phylogenetic tree with 100 bootstrap replicates. Display the tree, provide its Newick format, briefly interpret the phylogenetic relationships, and mention the tools used at each step. 10

P.T.O.

( 2 )

**Or**

Predict protein structure of your choice (full sequence) and evaluate accuracy level explaining different parameters and obtained values. Interpret the result.

3+5+2

2. Write a python code take a temperature in celcius and convert that into Farenheit. 5
  3. Laboratory Notebook 5
  4. Viva-voce 5
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