

B.Sc. Semester-V Examination, 2022-23**MICROBIOLOGY [Honours]**

Course ID : 52216 Course Code : SH/MCB/503/DSE-1

Course Title : Bioinformatics

Time : 1 Hour 15 Minutes

Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** of the following questions:

1×5=5

- What is FTP?
- What is the full form of RDBMS?
- Give an example of a tool for metabolic pathway analysis.
- What is the full form of UPGMA?
- Define scoring matrix.
- What is the purpose of performing energy minimization calculations?
- Give an example of a software used to perform drug designing.

2. Answer any **two** of the following questions:

5×2=10

- Give an example of two relational databases. What are the advantages of encrypted data transfer? 2+3=5
- Give an account of the various file formats used in bioinformatics with suitable examples. 5
- Describe the characteristics of *E. coli* genome. 5
- Define protein modelling. Discuss the prediction of the secondary structure of a protein, with suitable example. 1+4=5

3. Answer any **one** of the following questions:

10×1=10

- Write short notes on:
 - 2D gel electrophoresis
 - Transcriptome 5+5=10
- Differentiate between folds and domains. What is the evolutionary significance of domains? How is a protein structure evaluated with Ramachandran plot? 2+2+6=10
