

B.Sc. (CBCS Pattern) Semester-VI
USMBT-15 - Microbiology-I - Bioinformatics

P. Pages : 2

Time : Three Hours



GUG/W/24/13335

Max. Marks : 50

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- Notes : 1. All questions are compulsory.
2. Draw the diagram wherever it is necessary.

1. Explain the various modes of the data transfer. Explain in detail Biological Databases. **10**

OR

- a) Explain in brief SFTP as a mode of data transfer. **2½**
- b) Give an account on advantage of encrypted data transfer. **2½**
- c) Discuss the various modes of data storage. **2½**
- d) Write a note on relational database. **2½**

2. Explain in detail different approaches of phylogenetic tree construction. **10**

OR

- a) What is series of matrices. **2½**
- b) Write a note on global Sequence alignment. **2½**
- c) Discuss the maximum parsimony. **2½**
- d) Explain in brief construction of phylogenetic tree. **2½**

3. Explain in detail about diversity of genome with respect to eukaryotic genome. **10**

OR

- a) Write a note on transcriptome.. **2½**
- b) Discuss 2D gel electrophoresis. **2½**
- c) Write a note on Maldi Toff spectroscopy. **2½**
- d) Write a note on major feature of completed genome **2½**

4. Explain in detail Hierarchy of protein structure. 10

OR

- a) Write a note on protein modeling structural classes. 2½
- b) Discuss the protein structure prediction. 2½
- c) Add a note on Ramachandran plot. 2½
- d) Describe the rational drug design. 2½

5. Solve **any ten**.

- a) Define database. 1
- b) What is FASTA. 1
- c) Define sequence alignment. 1
- d) What is phylogeny? 1
- e) What is UPGMA. 1
- f) Define Genome. 1
- g) Name the Mobile phase used in 2D electrophoresis. 1
- h) What is proteome? 1
- i) Name the organism whose complete genome sequencing is done. 1
- j) What are motifs. 1
- k) Define structural template. 1
- l) Give the example of rational drug design. 1
