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Total No. of Questions : 16 ]

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# SEM4019

M.Sc. (IVth Semester) Examination, 2021

MICROBIOLOGY

Paper - MBCC-401

**(Bioinformatics and Computer Application)**

*Time : 1½ Hours ]*

*[ Maximum Marks : 40*

*Note :-* The question paper contains three Sections.

**Section-A** (Marks : 1 × 10 = 10)

*Note :-* Answer all the *ten* questions carries 1 mark each. The answer should not exceed **50** words.

**Section-B** (Marks : 3 × 5 = 15)

*Note :-* Answer *five* questions by selecting at least *one* question from each Unit. Each question carries **3** marks. Answers should not exceed **200** words.

**Section-C** (Marks : 5 × 3 = 15)

*Note :-* Answer *three* questions by selecting *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

**Section-A**

1. (i) Define a Database.
- (ii) What is SQL ?

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- (iii) What do you understand by a Flat File Format ?
- (iv) What is NCBI ?
- (v) What do you understand by NGS ?
- (vi) What is FASTA ?
- (vii) Define ORF.
- (viii) Define an Operating System.
- (ix) Why CAL is important in Microbiology ?
- (x) Write any *two* Application Packages for Microbiologists.

### **Section–B**

#### **Unit–I**

- 2. Write a short note on a Database Concept.
- 3. Why secondary and tertiary databases are used ?
- 4. Write a short note on relational databases.

#### **Unit–II**

- 5. Write a short note on a sequence database.
- 6. Write briefly about BLAST.
- 7. How you will Find and Retrieve Sequence from a sequence database ?

#### **Unit–III**

- 8. Write a short note on LIMS.
- 9. Write briefly about Computer Graphics.
- 10. Write the role of SPSS software in stastical analysis.

### **Section–C**

#### **Unit–I**

- 11. Write in detail about the role of bioinformatics in the analysis of biological molecules.

*Or*

- 12. Explain the types of biological databases with suitable examples.

**Unit-II**

13. Write in detail about Metabolic Engineering.

*Or*

14. Write in detail about DNA Sequencing methods.

**Unit-III**

15. Write in detail about Computers and their organization.

*Or*

16. Explain why Computer applications are so important in Bioinformatics.