



RAN-2103000206021106

T.Y.B.Sc. (Sem. - VI) Examination September - 2025

Bioscience (Microbiology)

Paper - XI (BS - 606: Fundamentals of Bioinformatics)

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.

Fill up strictly the details of signs on your answer book

Name of the Examination:

T.Y.B.Sc. (Sem. - VI)

Name of the Subject :

Bioscience (Microbiology) Paper - XI
(BS - 606: Fundamentals of Bioinformatics)

Subject Code No.: 2103000206021106

Seat No.:

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Student's Signature

- (2) Figures to the right indicate full marks of the question.
(3) Draw neat and labeled diagrams whenever necessary.

Q. 1 Multiple choice question: (MCQ)

08

- Which of the following are required for DNA sequencing?
 - ddNTPs
 - RNA primer
 - RNA polymerase
 - None
- Venter & Smith sequence the genome of _____.
 - H influenzae*
 - Enterobacter aerogenes*
 - Klebsiella pneumoniae*
 - E. coli*
- Which of the following are ddNTPs?
 - dCTP
 - ddUTP
 - dUTP
 - None
- Chain - termination DNA sequencing method was developed by _____.
 - Maxam
 - Smith
 - Sanger
 - All

5. Cellular protein can be visualized by _____
 - a. Sanger method
 - b. 2-D Gel electrophoresis
 - c. MS
 - d. All
6. Which of the following is a secondary database?
 - a. SWISS-PROT
 - b. EMBL
 - c. PDB
 - d. All
7. Which of the following is a special database?
 - a. Flybase
 - b. HIV sequence
 - c. Ribosomal
 - d. All
8. Which of the following is a form of tree representation?
 - a. Histogram
 - b. Cladogram
 - c. Monogram
 - d. All

Q. 2 [A] Answer as directed: 04

1. State the stages of Whole genome shotgun sequencing.
2. Explain: Computational molecular biology.
3. Define: Proteome, Transcript
4. Give the full form of ORF, PDB.

[B] Write short notes on: (Any Two) 10

1. Gene alignment.
2. Form of tree representation
3. Fully automated DNA analyzer.

Q. 3 Explain in detail Whole genome shotgun method. 14

OR

Q. 3 Answer of the followings question. 14

1. Describe in brief Genomics.
2. Write a note on Mass spectroscopy.

Q. 4 Answer of the followings question. (Any Two) 14

1. Describe in brief Biological database.
2. Write note on GenBank.
3. Define - Bioinformatics & Explain its applications