

(Printed Pages 3)

(20425)

Roll No. ....

E.Sc. (Micro)-III Year

**3513**

**B.Sc. (Micro.) Examination, April-2025**

**GENOMICS, PROTEOMICS &**

**BIOINFORMATICS**

**(B-310)**

**[ B.Sc. (Micro.) ]**

*Time : Three Hours ]*

*[Maximum Marks : 25*

**Note :** Attempt any **five** questions. **All** questions carry equal marks.

1. Discuss the process of directed random shotgun genome sequencing. How does it differ from other genome sequencing methods? 5

**P.T.O.**

2. Explain the principles and applications of microarray technology in genomics. 5
3. Define gene prediction. What are the common methods used for gene prediction in newly sequenced genomes? 5
4. What is genome similarity? Describe its significance in comparative genomics. 5
5. Discuss the concept of DNA and protein sequence directionality. Why is it important in bioinformatics? 5
6. Write short notes on:
  - (i) cDNA 2.5
  - (ii) Genomic DNA 2.5
7. Describe the IUPAC symbols used in DNA sequences. How do they help in representing genetic information? 5

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**P.T.O.**

8. Explain the role of BLAST family of search tools in bioinformatics research. 5
9. What are ESTs (Expressed Sequence Tags) and how they are utilized in genomics? 5
10. Write short notes on :
- (i) Fluorescent In-situ Hybridization (FISH) microarray 2.5
  - (ii) GSTs (Genomic Sequence Tags) 2.5