Unique Paper Code   : **42167905**

Name of the Course   : **B. Sc. (P) Life Sciences**

Name of the Paper   : **Bioinformatics**

Semester   : **V**

Duration: **3 Hrs+ 1 hour**   Maximum Marks: **75**

Instructions for candidates

Attempt four questions in all. All questions carry equal (18.75) marks. Attempt all parts of the questions together. Write your examination roll number on answer sheet.

Q 1. Discuss with the help of examples at least five different databases that are commonly used for biological research and analysis?

(18.75)

Q 2. What is BLAST analysis? Prepare short notes on the five variants and discuss their applications in bioinformatics?
(8.75+10)

Q 3. What is molecular phylogeny, and what are the various methods for re-construction of molecular phylogeny? Write detailed notes on any two software that are used for molecular phylogeny reconstruction.   (8.75+10)

Q 4. What are programming languages? Write short notes on any two programming languages commonly used in bioinformatics.   (8.75+10)

Q 5. Discuss any five types of sequence file formats, and their unique features.

(18.75)

Q 6. Write short note on the following
   a. Systems Biology
   b. PAM matrix
   c. BLOSUM matrix
   d. Metabolomics
   e. Quantitative structure-activity relationship (QSAR).

(3.75X5)