

B TECH
(SEM VI) THEORY EXAMINATION 2018-19
BIOINFORMATICS-II

Time: 3 Hours**Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- a. Define bioinformatics.
 - b. Define primary database.
 - c. What is machine learning? Define it.
 - d. Write a short note on simulation techniques.
 - e. What NLP? Define
 - f. Define the term “Docking”.
 - g. Define Perl in bioinformatics.
 - h. Define Strings.
 - i. Write down any four databases used for protein structure prediction.
 - j. Write a short note on NCBI.

SECTION B

- 2. Attempt any three of the following. 10x3=30**
- a. Explain Homology identification and its related tools in detail.
 - b. Explain the computer simulation technique and its types in brief.
 - c. Briefly discuss about Pharmacogenomics in details.
 - d. Explain the term “regular expression” in bioperl.
 - e. Write down difference between parametric and non-parametric tests for machine learning.

SECTION C

- 3. Attempt any one part of the following. 10x1=10**
- a. Explain Biological network identification and its related databases in detail.
 - b. Discuss “Support Vector Machine” for machine learning bioinformatics.
- 4. Attempt any one part of the following. 10x1=10**
- a. Explain the term “NLP” also discuss the major areas of NLP in bioinformatics.
 - b. Explain the term “HASHES” in bioinformatics.
- 5. Attempt any one part of the following. 10x1=10**
- a. Explain protein function prediction in detail.
 - b. Explain artificial neural network for a machine learning process.
- 6. Attempt any one part of the following. 10x1=10**
- a. Describe QSAR modeling for given protein.
 - b. What are ORFs? Explain about the identification of ORFs in detail.
- 7. Attempt any one part of the following. 10x1=10**
- a. Explain Lipinski’s rule of five in detail.
 - b. Write down the major steps in drug designing in detail.