Exam. Code: 0910
Sub. Code: 6316

2023

B.E. (Biotechnology) Sixth Semester

BIO-612: Bioinformatics

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Write short notes on the following:-

a) Applications of Bioinformatics

b) Uni-Prot

c) TIGR

d) T-coffee

e) Phylogenetic tree

f) Grail

g) Poly A site

h) Ab-initio protein structure prediction

i) S PDB viewer

j) QSAR

(10x1)

UNIT - I

II. What are nucleotide sequence databases? Explain using suitable examples. (10)

III. Explain step by step the method of submitting nucleotide sequences to GenBank database using Sequin tool. (10)

IV. a) Explain methods and applications of homology analysis using PSI-BLAST and PHI-BLAST

b) Describe character based approaches for investigating phylogenetic relationships among biological sequences. (10)

P.T.O.

UNIT - II

V. Enlist important criteria for the identification of protein coding genes. Explain principle and methodology of gene prediction using Glimmer. (10)

VI. Discuss the importance of protein structure prediction. Explain method of 3D protein structure prediction using homology modeling technique. (10)

VII. What do you understand by computer aided drug designing? Explain working of QSAR. (10)

x-x-x