Exam.Code:0910
Sub. Code: 33376

2055
B.E. (Biotechnology) Sixth Semester
BIO-612: Bio-Informatics

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 Section.

x-x-x

Q1. Answer the following briefly:-

i.) What is difference in rooted and unrooted trees.
ii.) What is BLOSSUM matrix.
iii.) Write a short note on polyA sites.
iv.) What is the principle of PSIPRED program.
v.) What is application of T-Cofee program.
vi.) Give diagram representation of a cladogram.
vii.) Write a short note on spdbviewer program application.
viii.) Write a short note on GenScan program.
ix.) Write a short note on Maize GDB database.
x.) What are informative and non-informative sites in a phylogenetic tree. **(1x10)**

Section-A

Q.2a) Briefly describe the objectives and applications of Bioinformatics.
b) Write a short note on PAM scoring matrices. **(7+3)**

Q.3 a) Discuss the procedure for searching homologous sequences to a query nucleotide sequence.
b) Write a short note on tree presentation formats. **(7+3)**

Q.4 Briefly describe features and applications of following databases
a) Gen Bank **b)** PROSITE **c)** SCOP **(4+4+2)**

Section-B

Q.5a) Briefly discuss the procedure for gene and promoter prediction in prokaryotic genome.
b) Write a short note on Grail program. **(7+3)**

Q.6a) Discuss the procedure to predict secondary structure foe a sequence of amino acids by Chou-Fasman method.
b) Write a short note on regulatory regions in eukaryotic genomes. **(6+4)**

Q.7a) Briefly describe the molecular dynamic simulations procedure and its applications.
b) Write a short on molecular graphics packages. **(6+4)**

x-x-x