Exam.Code:5011
Sub. Code: 11744

2124

Bachelor of Science (FYUP) First Semester
BIFM-1: Bioinformatics - I

Time allowed: 3 Hours **Max. Marks: 60**

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

x-x-x

I. Attempt the following:

a) What are Dihedral Angles?

b) Explain snoRNA.

c) Draw structure of two Basic amino acids.

d) Compare A-DNA, B-DNA and Z-DNA

e) Name any two specialized Databases.

f) Expand the term INSDC.

g) What is FASTA Format?

h) Define Affine Gap Penalty. (8x1½)

UNIT - I

II. (a) Explain the Watson and Crick double helix model of DNA.

(b)Differentiate between Nucleotides and Nucleosides with suitable diagrams. (6+6)

III. (a)Explain secondary structure of proteins.

(b)Explain various interactions that stabilizethe structure of proteins. (6+6)

IV. (a)Explain the roles of mRNA, tRNA and rRNA.

(b)Write the general properties of amino acids. (6+6)

UNIT – II

V. (a) Write note onprimary nucleotide sequence databases.

(b)Write applications of Bioinformatics in genomic era. (6+6)

VI. (a) Write a note PubMed and Uniprot.

(b)Explain Global Alignment Method of pairwise sequence alignment with suitable example. (6+6)

VII. (a) Write applications of sequence alignment.

(b)Explain Dot matrix and write its advantages and disadvantage. (6+6)

x-x-x