

Enrollment No:- _____

Exam Seat No:- _____

C.U.SHAH UNIVERSITY

Summer-2015

Subject Code: 4LS04BOT1

Subject Name: **Bioinformatics/Biostatistics**

Course Name: B.Sc. (Micro)

Date: 21/5/2015

Semester: IV

Marks: 70

Time: 10:30 TO 01:30

Instructions:

- 1) Attempt all Questions in same answer book/Supplementary.
- 2) Use of Programmable calculator & any other electronic instrument prohibited.
- 3) Instructions written on main answer book are strictly to be obeyed.
- 4) Draw neat diagrams & figures (if necessary) at right places.
- 5) Assume suitable & perfect data if needed.

SECTION-I

Q.1 Answer all following questions.

7

- (A) Define Bioinformatics
- (B) Give two examples of structural databases
- (C) Give full forms: (i) BLAST, (ii) NCBI
- (D) Give names of two viewing software
- (E) Define: Global alignment
- (F) Give name of one method for calculation of pair wise sequence alignment
- (G) Pair of sum gives the calculation of which method?

Q.2 (A) Explain AB initio method for gene prediction and HMM in detail

5

(B) Explain pattern discrimination and neural network in detail

5

(C) Write a short note on biological databases in detail

4

OR

Q.2 (A) Explain pair wise sequence alignment with method

5

(B) Explain global and local alignment and classes of MSA

5

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21-5

(C) Explain MSA 4

Q.3 (A) Give an overview about phylogenetic analysis. Explain maximum parsimony 5

(B) Explain neighbor joining method and sequence based method in detail 5

(C) Write a short note on different types of protein database 4

OR

Q.3 (A) Explain prediction of physical properties of protein 5

(B) Explain prediction of secondary structure of protein 5

(C) Explain molecular visualization of protein by Rasmol and Explain PDB. 4

SECTION-II

Q.4 Answer all following questions 7

(A) Define statistic.

(B) Define Biostatistics.

(C) What is NNPRELECT?

(D) Define homologs and orthologs

(E) Define phylogenetics analysis

(F) Give formula to find out range and mean deviation

(G) Which are the measures of central tendency?

Q.5 (A) Explain qualitative and quantitative representation of data (only graphical and diagrammatic methods) 5

(B) Give an overview about hypothesis 5

(C) Explain uses of Biostatistics 4

OR

Q.5(A) Calculate the mean height of 200 wheat plants in cms is as follows 5

Class (x)	Frequency(f)
48	8



50	32
52	25
54	52
56	28
58	5

(B) A match between age distribution of women in the sample and all women in India between the age of 20 and 44 4

Age	No in sample	Percent in Cencus
20-24	103	18
25-34	216	50
35-44	171	32
	Total=490	Total=100

Calculate chi-square test of given table

(C) A feed dealer buys 20% protein food from a feed manufacturer & resells the feed to local ranchers. The feed dealer has assumed that food does not average less than 20% protein. Carry out the hypothesis at the 5% level of significance where mean=19.87 S.D=0.178 & n=10 4

Q.6(A) Obtain Measures of central tendency (Mean, median, Mode) 5

x	f
2-6	7
6-10	9
10-14	12
14-18	15
18-22	18
22-26	6
26-30	4

(B) Obtain M.D And Coefficient of M.D from given table 4

X	F
12	2
13	9
15	12
15	11
16	10



17	2
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(C) Calculate standard deviation and coefficient of variation of given data

4

X_i
155
158
162
161
164

OR

Q.6(A) Obtain Q1 Q2 & Q3

5

X	F	c.f
0-40	2	2
40-50	13	15
50-55	17	32
55-60	12	44
60-65	10	54
65-70	5	59

(B) Find out mode

4

X	F
0-10	17
10-20	20
20-30	25
30-40	21
40-50	12
50-60	7

(C) Obtain median

4

x	f
145-150	13
150-155	27
155-160	34
160-165	32
165-170	24
170-175	10

