

C.U.SHAH UNIVERSITY
Summer Examination-2019

Subject Name: Basics of Bioinformatics and Biostatistics

Subject Code: 4SC04BBB1

Branch: B.Sc. (Microbiology)

Semester: 4

Date: 22/04/2019

Time: 02:30 To 04:00

Marks: 35

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1 Attempt the following questions: (7)

- a) Define primary data
- b) Define frequency
- c) Expand OMIM
- d) Expand BLAST
- e) Name two primary DNA Database
- f) Expand NCBI
- g) Expand Tr-EMBL

Attempt any two questions from Q-2 to Q-5

Q-2 Attempt all questions (14)

- a) The marks obtained by 30 students of Class X of a certain school in a Mathematics paper consisting of 100 marks are presented in table below. Find the mean of the marks obtained by the students (7)

Marks obtained (x_i)	10	20	36	40	50	56	60	70	72	80	88	92	95
Number of Students (f_i)	1	1	3	4	3	2	4	4	1	1	2	3	1

Find the mean marks.

- b) Discuss Needleman -Wunsch Algorithm (4)
- c) Find the mode of 14, 25, 14, 28, 18, 17, 18, 14, 23, 22, 14, and 18. (3)

Q-3 Attempt all questions (14)

- a) Define biological database. Give the classification of primary databases and discuss anyone primary DNA database (7)
- b) Discuss the general features of Biological Databases (4)
- c) Consider the marks obtained by 10 students in a mathematics test as given below: (3)



55, 36, 95, 73, 60, 42, 25, 78, 75, and 62.

Calculate range of the given data

Q-4 **Attempt all questions** **(14)**

- a) Explain Multiple Sequence Alignment **(7)**
b) Find the mean deviation about the mean for the following data : **(4)**
12, 3, 18, 17, 4, 9, 17, 19, 20, 15, 8, 17, 2, 3, 16, 11, 3, 1, 0, 5
c) Define classification. Write the objectives and characteristics of classification **(3)**

Q-5 **Attempt all questions** **(14)**

- a) Find the median of the following data, which gives the marks, out of 50, obtained by 100 students in a test: **(7)**

Marks Obtained	20	29	28	33	42	38	43	25
Number of Students	6	28	24	15	2	4	1	20

- b) Compare primary and secondary database **(4)**
c) Find the variance of the following data: **(3)**
6, 8, 10, 12, 14, 16, 18, 20, 22, 24

