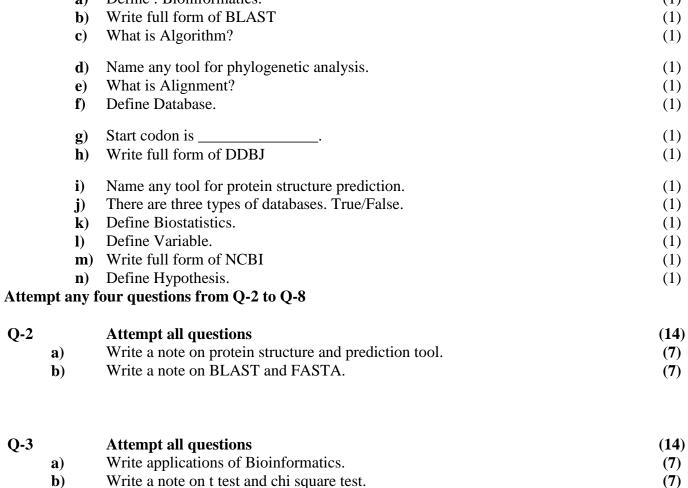# C.U.SHAH UNIVERSITY
## Summer Examination-2018

**Subject Name : Bioinformatics and Biostatistics**

**Subject Code : 4SC04BIB1**                    **Branch:** B.Sc. (Microbiology)

**Semester : 4**         **Date : 01/05/2018**         **Time : 10:30 To 01:30**         **Marks : 70**

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:** | **(14)** |
| **a)** | Define : Bioinformatics. | (1) |
| **b)** | Write full form of BLAST | (1) |
| **c)** | What is Algorithm? | (1) |
| **d)** | Name any tool for phylogenetic analysis. | (1) |
| **e)** | What is Alignment? | (1) |
| **f)** | Define Database. | (1) |
| **g)** | Start codon is _____. | (1) |
| **h)** | Write full form of DDBJ | (1) |
| **i)** | Name any tool for protein structure prediction. | (1) |
| **j)** | There are three types of databases. True/False. | (1) |
| **k)** | Define Biostatistics. | (1) |
| **l)** | Define Variable. | (1) |
| **m)** | Write full form of NCBI | (1) |
| **n)** | Define Hypothesis. | (1) |

**Attempt any four questions from Q-2 to Q-8**

| | | |
|---|---|---|
| **Q-2** | **Attempt all questions** | **(14)** |
| **a)** | Write a note on protein structure and prediction tool. | **(7)** |
| **b)** | Write a note on BLAST and FASTA. | **(7)** |

| | | |
|---|---|---|
| **Q-3** | **Attempt all questions** | **(14)** |
| **a)** | Write applications of Bioinformatics. | **(7)** |
| **b)** | Write a note on t test and chi square test. | **(7)** |

| Q-4 | | **Attempt all questions** | **(14)** |
|---|---|---|---|
| | a) | Write a note on RASMOL. | (4) |
| | b) | Write applications of Bioinformatics. | (7) |
| | c) | Explain merits and demerits of standard deviation. | (3) |

| Q-5 | | **Attempt all questions** | **(14)** |
|---|---|---|---|
| | a) | Write a brief note on Biological Databases. | (14) |

| Q-6 | | **Attempt all questions** | **(14)** |
|---|---|---|---|
| | a) | Write a brief note on Phylogenetic analysis. | (14) |

| Q-7 | | **Attempt all questions** | **(14)** |
|---|---|---|---|
| | a) | Write a note on NCBI and EMB. | (6) |
| | b) | Give merits and demerits of Mean. | (3) |
| | c) | The incubation periods of a random sample of 7 HIV infected individuals is given below (in years) : 12.0, 10.5, 9.5, 6.3, 13.5, 12.5, 7.2. Calculate Mean, Median, SD, Variance. | (5) |

| Q-8 | | **Attempt all questions** | **(14)** |
|---|---|---|---|
| | a) | Write a note on Local and Global Alignment. | (7) |
| | b) | Give merits and demerits of Mode. | (3) |
| | c) | Find the Range, Mean, Median, Mode of the data set below 3, 12, 15, 3, 15, 8, 20, 19, 3, 15, 12, 19, 9 . | (4) |