Enrollment No: _____   Exam Seat No:_____

C.U.SHAH UNIVERSITY
Summer Examination-2019

Subject Name: Biostatistics and Bioinformatics

Subject Code: 5SC04BIB1   **Branch: M.Sc. (Microbiology)**

Semester: 4   **Date: 15/04/2019**   **Time : 02:30 To 05:30**   **Marks : 70**

<u>**Instructions:**</u>
   (1) Use of Programmable calculator and 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.

SECTION – I

Q-1   **Attempt the Following questions (**   **7**

   a. BLAST is an algorithm for comparing primary biological sequence information. True/False

   b.   Write full form of NCBI.
   c. Gaussian distribution is used in gene editing. True/False
   d. Define biostatistics.
   e. Write full form PDB.
   f. The median is the value separating the higher half from the lower half of a data sample. True/False
   g. Z-test is any statistical hypothesis based on SD. True/False

Q-2   **Write short notes on-**
   a   Composite Database   **7**
   b   Phylogenetic tree   **7**

OR
Q-2 **a**   Protein Database   **7**
      b   The viral incubation periods of random sample of 7 AIDS individuals is given below (in years): 12.0, 10.5, 9.5, 6.3, 13.5, 12.5, and 7.2.
Calculate Mean, Median and SD.   **2+2+3**

Q-3   **Attempt all questions**
   a   Explain briefly about nucleotide sequence analysis.   **7**
   b   Explain briefly the application of BRENDA, AMENDA and FRENDA   **7**
OR

Q-3   What do you mean by normal distribution? Explain the normal distribution curve with suitable examples.   **14**

SECTION – II

Q-4   Attempt the Following questions   7

    a. Write full form BLAST.
    b. Write full form EMBL.
    c. What is pubmed?
    d. A branching diagram or "tree" showing the evolutionary relationships among various biological species is called as………….
    e. RasMol is a DNA data base. True/False
    f. DDBJ is a molecular biology research institution supported by 25 member states. True/False
    g. PHYLIP program is used for inferring evolutionary trees. True/False

Q-5   Write short notes on-
  a   Parametric tests and non parametric tests   **7**
  b   CAZy   **7**

OR

Q-5 a   Applications of Bioinformatics   **7**
    b   Hypothesis testing   **7**

Q-6   Write short notes on-
  a   Nucleotide Database   **7**
  b   Protein sequence analysis tools   **7**

OR

Q-6   What do you mean by Databases? Explain the characteristic of bioinformatics databases.   **14**