JBG-003-1141004   Seat No. _____

M. Sc. (Botany) (Sem. I) (CBCS) Examination

December - 2019

Biostatistics and bioinformatics : Paper - 104

Faculty Code : 003

Subject Code : 1141004

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

Instruction :   All questions are compulsory and carry equal marks.

1   Answer any **seven** questions from the following :   **14**

   (a)   Write the steps to search a nucleotide/protein sequence in NCBI.

   (b)   What is FASTA? Give an example

   (c)   What is Identity in sequence analysis ?

   (d)   Distinguish between Motif and Domain.

   (e)   Distinguish between Orthologous genes and Paralogous genes.

   (f)   What are the 5 stages in a statistical investigation?

   (g)   What is Bivariate Regression Analysis?

   (h)   What is paired t-test?

   (i)   What are primary data and secondary data?

   (j)   What is the difference between mathematical and positional averages ?

2   Answer any **two** of the following :   **14**

   (a)   What are measures of Central Tendency? Describe with suitable examples.

   (b)   What are different measures of dispersion? Describe with suitable examples.

   (c)   What is classification? Describe different types of classification with suitable examples.

3 Answer the following : **14**

  (a) What is the difference between cumulative frequency and relative frequency? Describe briefly Frequency distribution.

  (b) What is t-Test? Explain with suitable examples.

OR

3 Answer the following : **14**

  (a) What is ANOVA? Explain.

  (b) What is the need of Coefficient of Variation? Discuss briefly with suitable examples.

4 Answer the following questions : **14**

  (a) Write applications of bioinformatics in molecular biology.

  (b) What is multiple sequence alignment? Discuss its significance.

5 Write notes on any **two** of the following : **14**

  (a) Gene prediction

  (b) PDB

  (c) Genomics

  (d) Phylogeny analysis.

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