



**JBG-003-1191004** Seat No. \_\_\_\_\_

**M. Sc. (Microbiology) (Sem. I) (CBCS)  
(W.E.F.-2016) Examination**

**December - 2019**

**Micro - 104 : Biostatistics & Bioinformatics**

**Faculty Code : 003**

**Subject Code : 1191004**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- 1** Answer any **seven** : (2 marks each) **14**
- (i) What is the difference between primary and secondary data?
  - (ii) What are cumulative and relative frequencies?
  - (iii) Define the terms 'sample' and 'population'.
  - (iv) Distinguish between variables and parameters.
  - (v) What is standard deviation?
  - (vi) What is annotation?
  - (vii) State the difference between local and global alignments.
  - (viii) Give the full forms of NCBI, hml, hmdb, and BLAST.
  - (ix) State the difference between identity and similarity.
  - (x) Name tools for multiple sequence alignments.
- 2** Answer any **two** of the following : (7 marks each) **14**
- (i) Discuss various measures of central tendency.
  - (ii) Write a short note on frequency distribution and types of graph.
  - (iii) Comment on confidence limit and confidence interval.
- 3** Answer the following : (7 marks each) **14**
- (i) Discuss unpaired student's t-test.
  - (ii) Write a short note on correlation analysis.

**OR**

- 3** Answer the following : (7 marks each) **14**
- (i) Exemplify analysis of variance.
  - (ii) What is Chi-square test? Discuss.
- 4** Answer the following : (7 marks each) **14**
- (i) Give an account of structure databases.
  - (ii) Discuss applications of bioinformatics.
- 5** Write a short note on any **two** of the following : **14**  
(7 marks each)
- (i) Transcriptomics and Metabolomics
  - (ii) Gene prediction & Tools
  - (iii) Molecular signatures
  - (iv) Genomics
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