



**DCV-003-1141004**

Seat No. \_\_\_\_\_

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

**August - 2022**

**BOT-104 : Biostatistics and Bioinformatics**

**Faculty Code : 003**

**Subject Code : 1141004**

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

[Total Marks : 70

**Instructions :** Answer any five from the following.

**1** Answer the following : **2×7=14**

- (a) What is range?
- (b) Briefly describe types of error.
- (c) Define the term Population and Parameter.
- (d) Distinguish the term ranked variable and derived variable.
- (e) What is the difference one tailed test and two tailed test?
- (f) Enlist the types of graphical representations.
- (g) Distinguish the term primary data and secondary data.

**2** Answer the following : **2×7=14**

- (a) What is annotation?
- (b) Briefly describe local and global alignment.
- (c) What is the difference between primary database and secondary database.
- (d) Distinguish the terms motif and domain.
- (e) What is algorithm?
- (f) Define the term gene and genome.
- (g) Write full forms: NCBI, HMBD, BLAST, PDB

- 3 Answer the following : **2×7=14**  
(a) Write a short note on various measures of dispersion.  
(b) Give a brief account on population mean, confidence limit and confidence interval.
- 4 Answer the following : **2×7=14**  
(a) Give a detailed account on transcriptomics.  
(b) Define multiple sequence alignment and phylogenetic relationship.
- 5 Answer the following : **2×7=14**  
(a) Give a detailed account on Hypothesis, types of hypothesis and level of significance.  
(b) Write a short note on X<sup>2</sup>-test.
- 6 Answer the following : **2×7=14**  
(a) Describe the gene prediction in prokaryotes & tools.  
(b) Write a short note on metabolomics.
- 7 Answer the following : **2×7=14**  
(a) What is F-test? Write the procedure for F-test.  
(b) Give a brief account on Karl Pearson correlation coefficient.
- 8 Answer the following : **2×7=14**  
(a) Write a detailed note on proteomics.  
(b) Give a brief account on database.
- 9 Answer the following : **2×7=14**  
(a) Write a short note on unpaired t-test.  
(b) Exemplify paired t-test.
- 10 Answer the following : **2×7=14**  
(a) Write the importance of bioinformatics in molecular biology.  
(b) Briefly describe genomics.
-