

Roll No. : .....

Total No. of Questions : 11 ]

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# **BPP-1085**

**M.Sc. (Previous) Examination, 2022**

## **MICROBIOLOGY**

Paper - IV

**(Biostatistics and Computer Applications and Bioinformatics)**

*Time : 3 Hours ]*

*[ Maximum Marks : 75*

### **Section-A**

**(Marks : 2 × 10 = 20)**

**Note :-** Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

### **Section-B**

**(Marks : 5 × 5 = 25)**

**Note :-** Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

### **Section-C**

**(Marks : 10 × 3 = 30)**

**Note :-** Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

### **Section-A**

1. (i) Define Random Sampling.
- (ii) What are Secondary Data ?
- (iii) What is Mean Deviation ?

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- (iv) What is Binomial Distribution ?
- (v) What is Null Hypothesis ?
- (vi) What is Statistical Design ?
- (vii) What is WIMP ?
- (viii) What is Spreadsheet ?
- (ix) What is Database ?
- (x) What do you mean by Proteomics ?

**Section-B**

2. Discuss about the methods of presentation of statistical data.

*Or*

Explain two stage stratified sampling with suitable examples.

3. Discuss Quartiles, Quintiles, Deciles and Percentiles.

*Or*

What do you mean by Normal Distribution ? Discuss its properties and applications.

4. Discuss Test of significance method used in statistics.

*Or*

Explain Processing of data to write a report.

5. Discuss the various hardwares used in computers.

*Or*

Write a short note on Command Line Tool.

6. Write a short note on Gene Banks Sites.

*Or*

Discuss about Nucleic Acid Sequence Database.

### Section-C

7. Describe various types of graphical representation of data with suitable example.
8. Calculate the Mode for the following data :

No. of Plates	1-5	6-10	11-15	16-20	21-25
No. of Cells	7	10	16	32	24

9. Test whether the prevalence of carrier of Covid-19 virus is associated with sex :

Sex	No. of carriers	No. of Non - carriers	Total
Male	56	31	87
Female	18	6	24
Total	74	37	111

(The tabulated value of  $\chi^2$  at  $\alpha = 0.05$  and one degree of freedom is = 3.411).

10. Discuss the use of computers in various fields of microbiology.
11. Write short notes on the following :
  - (i) FASTA
  - (ii) Genome Sequencing