

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPF-2241

M.Sc. (Final) Examination, 2022

BIOTECHNOLOGY

Paper - VII

(Biostatistics, Bioinformatics and Computer Applications)

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

2 each

1. (i) What is meant by Computer Assisted Learning ?
- (ii) Define Database.
- (iii) Differentiate between liveware and firmware.

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- (iv) What is *t*-test ?
- (v) What is meant by Sampling ?
- (vi) What is indirect assay ?
- (vii) What is Bioinformatics data analysis ?
- (viii) What is BLAST algorithm ?
- (ix) What is meant by Statistical modelling ?
- (x) Define Correlation.

Section-B

5 each

2. Write a note on Computer aided learning.

Or

What is Mathematical modelling and simulation ?

3. What do you mean by Statistical inference ? Describe the types of importance of Statistical inference.

Or

Describe the properties of Binomial distribution.

4. Explain the difference between Probit and Logit model.

Or

What are Biological assays ? Explain the types of bioassays and their importance.

5. Write a note on biodiversity information database.

Or

Explain the different steps of genome sequencing.

6. Write a note on Annotations of genes.

Or

What are Bioinformatics Algorithms ? Explain the different types of algorithms for protein and nucleic acid.

Section–C

10 each

7. Discuss the significance of computer in statistics analysis.
8. (a) What is Chi-square test for independence ?
(b) What is Chi-square test for homogeneity ?
(c) Describe the conditions in which Chi-square test is applicable.
9. Explain ordination techniques and their uses.
10. Write a note on protein and nucleic acid sequence database.
11. Explain the importance of mass spectroscopy in the field of proteomics.