12. (a) Explain similarities and differences between BLAST and FASTA tools for sequence alignment.

(b) Layout and analysis of Latin Square Design.

13. Write short notes on any **four** of the following: 2½ each

(a) Cumulative frequency curves

(b) Coefficient of variation

(c) Randomized block design

(d) Role of internet in Bio-informatics

(c) NCBI

NP-3332/4

D   (Printed Pages 4)

(21224)   Roll No. 940686354005.

M.Sc. (Bio-Tech.) - I Sem.

NP-3332
M.Sc. (Bio-Tech.)
Examination, Dec.-2024

Statistical Methods and Bioinformatics

in Biology

(H-103)

M.Sc. (Bio-Tech.)

Time : Three Hours]   *[Maximum Marks : 50*

Note : Attempt questions from **all** sections as per instructions. Use of calculator is allowed.

Section - A

(Very Short Answer Questions)

Note : Answer all **five** questions. Each question carries 2 marks. Very short answer is required.   2x5=10

P.T.O.

1. Explain Histogram and frequency polygon.

2. Explain Mean Deviation.

3. Explain paired t-test.

4. What are the basic principles of experimental design and explain one of them.

5. What are the components of Bio-informatics.

Section - B

(Short Answer Questions)

Note : Answer any **two** questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words.   2x5=10

6. Define Mean, Median and mode with their simple properties.

7. Define the following terms:

   (a) Type I and Type II errors.

   (b) Large sample test

8. Explain Database accession and searching.

Section - C

(Detailed Answer Questions)

Note : Answer any **three** questions from this section. Each question carries 10 marks. Answer is required in detail.

3x10=30

9. What is dispersion? What are various measures of dispersion? Explain them.

10. Discuss the scope and applications of Bio-informatics in molecular biology and computers.

11. (a) How will you test the independence of two attributes in 2×2 contingency table.

    (b) Explain the meaning of "Test for goodness of fit".