23U521 (Pages: 2) Name: .....

Reg.No: .....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19UZOL5B09 - METHODOLOGY IN SCIENCE BIOSTATISTICS AND BIOINFORMATICS

(Zoology - Core Course)

(2019 Admission onwards)

Time : 2.5 Hours Maximum : 80 Marks

Credit : 4

Part A (Short answer questions)

Answer ***all*** questions. Each question carries 2 marks.

1. Differentiate between simulations and virtual testing.
2. Explain hypothesis formulation.
3. Differentiate between plagiarism and patents.
4. Define the term Biostatistics. What are its applications?
5. Describe the methods to construct a frequency table.
6. Compare line diagram and pie diagram.
7. Explain mean and median with a note on its merits and limitations.
8. Explain mean deviation and Range.
9. Narrate the procedure for the hypothesis testing in Biostatistics.
10. Explain ANOVA.
11. Explain EMBL and DDBJ.
12. What is BLAST?
13. Explain UPGMA.
14. What are separate microarrays and single microarrays?
15. EMBL.

(Ceiling: 25 Marks)

Part B (Paragraph questions)

Answer ***all*** questions. Each question carries 5 marks.

16. Briefly describe disciplines of science.

17. Describe the ways to document experimental details.

18. Describe the concept of three ‘R’.

19. What is meant by sampling error? Explain its relation to the sample size.

20. What is standard error? Calculate standard error of the mean for the given data 8, 7, 10, 7, 13, 8, 10.

21. Explain key biosequences in biology.

22. Write notes on FASTA output.

23. Disscus in detail about different methods in proteomics.

(Ceiling: 35 Marks)

Part C (Essay questions)

Answer any ***two*** questions. Each question carries 10 marks.

24. Compare graphs of time series and graphs of frequency distribution with the help of examples.

25. Describe major databases in bioinformatics.

26. Write an essay multiple sequence alignments.

27. Discuss in detail about Sanger’s method of DNA sequencing.

(2 × 10 = 20 Marks)

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