D5BZL2004

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Reg.No............................

Name: ....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2022
(Regular/Improvement/Supplementary)
ZOOLOGY
GZOL5B09T: METHODOLOGY IN SCIENCE, BIOSTATISTICS AND BIOINFORMATICS

Time: 2 ½ Hours   Maximum Marks: 80

SECTION A: Answer the following questions. Each carries 2 marks.
(Ceiling 25 Marks)

1. Write a note on scientific temper.
2. Differentiate between auxiliary hypothesis and ad-hoc hypothesis.
3. Explain the role and benefits of interdisciplinary approach in biology.
4. List the major steps in scientific method.
5. Substantiate the requirement of test animals in scientific research.
6. What are the importance of documentation?
7. Describe secondary source of scientific information.
8. What is null hypothesis
9. What is mode?
10. Describe graphic representation
11. What are the advantages of testing hypothesis
12. What are nucleotide sequence databases? Mention any two.
13. With the help of an example explain a sequence alignment tool.
14. What is MALDI-TOF mass spectrometry? Mention its applications.
15. Mention the principle and advantage of Sequencing by ligation (SOLiD).

SECTION B: Answer the following questions. Each carries 5 marks.
(Ceiling 35 Marks)

16. What are controlled experiments? Prepare the design a controlled experiment.
17. Describe one way ANOVA
18. Mention different database search engines with appropriate examples.
19. Explain the tools used in DNA & protein sequence analysis.
20. Write Notes on :   a) BLAST   b) FASTA
21. What is meant by a Phylogenetic tree? Explain the different forms of tree representation.
22. Differentiate between Metabolomics and Metagenomics.
23. Explain the process of EST method and SAGE method in gene expression studies.

SECTION C: Answer any 2 questions. Each carries 10 marks.

24. Write an account on Plagiarism.
25. Explain the advantages and disadvantages of sampling method.
26. Give a detailed review of this scope and limitations of statistics in life science.
27. Explain the application of bioinformatics in different fields emphasizing the genomics and proteomics aspects.

(2 x 10 = 20 Marks)