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Name.......................................

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

FIFTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2023

Zoology

ZOL 5B 09 T—METHODOLOGY IN SCIENCE, BIOSTATISTICS AND BIOINFORMATICS

(2019 Admission onwards)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

I. Short Answer Questions. Each question carries 2 marks :

1 Briefly explain the characteristics of a good database.

2 Expand the abbreviation DDBJ and comment on it.

3. Briefly explain PDB.

4 Define metabolomics. Name any *two* metabolic databases.

5 Give a short account on special databases with examples.

6 What is a Pilot study ? Comment on its relevance.

7 Differentiate between auxiliary and adhoc hypothesis.

8 What is peer-review ? Comment on its importance in scientific methods.

9 Write notes on primary depository of scientific information.

10 Write a note on intuition.

11 Differentiate between primary and secondary data.

12 Comment on Empiricism.

13 Briefly explain deductive reasoning with an example.

14 Define null hypothesis ?

15 Briefly explain level of significance.

(Ceiling : 25 marks)

Turn over

Section B

II. Paragraph Questions. Each question carries 5 marks :

16 What is Metagenomics ? Comment on its applications.

17 Explain briefly about multiple sequence alignment.

18 Explain the methods in testing a hypothesis.

19 Define range and co-efficient of range. Haemoglobin percentage per 100 is as follows. Calculate range and coefficient of range :

11.5, 13.8, 14.3, 11.7, 13.1, 14.5, 11.8, 14, 14.7, 12.5, 14.1, 14.8, 12.9, 1

20 Briefly explain Sanger's method of DNA sequencing. Mention any two app sequencing.

21 What is molecular docking ? Comment on its applications.

22 Define mode. The following distribution shows marks of 87 students in a the modal class and mode :

Marks :	20–25	25–30	30–35	35–40	40–45	45–50	50
No. of students :	5	7	8	18	25	12	

23 Define Standard Error (SE). Sizes of five fishes in inches are 2, 5, 3, 4, 1 resp standard error of the mean

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Section C

III. Essay Questions. Answer any *two* questions :

24 Explain different steps in hypothesis testing. Describe t-test and F-test. Add significance of statistical tools in data interpretation.

25 Explain primary and secondary databases in detail. Give suitable examples.

26 Write an essay on experimentation in science

27 Write an essay on measures of central tendency. Write down the equations demerits.

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