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10712 (Pages : 3) Name.....

Reg. No.....

FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Zoology

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

(2019 Admissions)

ne : Two Hours and a Half Maximum : 80 Marks

**Section A (Short Answer Questions)**

*Answer at least* **ten** *questions.*
*Each question carries 3 marks.*
*All questions can be attended.*
*Overall Ceiling* 30.

1. Comment on CLUSTAL W.
2. What is cheminformatics ?
3. Define Microarray. Mention any *two* of its applications.
4. Give a short account on structure databases with examples.
5. Distinguish between cladistics and ontology.
6. What is Empiricism in science ?
7. Explain the importance of controls in an experiment.
8. What is peer review ? Comment on its importance in publication.
9. Write notes on secondary depository of scientific information.
0. Comment on Plagiarism.
1. Comment on interdisciplinary approach in science.
2. Expand CPCSEA and comment on it.
3. Write down the characteristic features of normal distribution curve.
4. Distinguish between Skewness and Kurtosis.
5. Explain probability sampling.

(10 × 3 = 30 marks)

**Turn over**

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## Section B (Paragraph Questions)

*Answer at least* **five** *questions.*
*Each question carries* 6 *marks.*
*All questions can be attended.*
*Overall Ceiling* 30.

16. Briefly explain database search engines with examples.

17. What is a metabolic database ? Explain with examples and comment on its applicatio

18. Briefly explain any two primary protein sequence databases.

19. Explain pair wise sequence alignment with examples.

20. Explain the importance of units and dimensions in experimentation.

21. What is virtual testing ? Comment on its importance in experiments.

22. Define an Ogive. Draw a cumulative frequency curve for the following data :

| Interval | Frequency |
|---|---|
| 10–19 | 4 |
| 20–29 | 1 |
| 30–39 | 1 |
| 40–49 | 3 |
| 50–59 | 14 |
| 60–69 | 20 |
| 70–79 | 22 |
| 80–89 | 2 |
| 90–99 | 2 |

23. Define mean, median and mode. Calculate mean for the following data :

28, 32, 45, 54, 60, 61, 70, 63, 70, 72, 76, 54, 63, 76, 32, 54, 60, 45, 72, 98

(5 × 6 =

## Section C (Essay Questions)

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

. What are primary and secondary databases ? Explain in detail.

. Explain Sanger's DNA sequencing method in detail. Add a note on the applications of DNA sequencing.

. Explain the major steps in scientific methods.

. Explain in detail about the different methods in presentation of data.

(2 × 10 = 20 marks)