

Total number of printed pages-7

1 (Sem-4) ZLG 1

2025

ZOOLOGY

Paper : ZLG0400104

**(Animal Taxonomy, Systematics and
Biostatistics)**

Full Marks : 45

Time : 2 hours

***The figures in the margin indicate
full marks for the questions.***

***Write the answer to the two Parts in
separate books.***

**Q. No 1 is compulsory in both Part-A
and Part-B.**

Part-A

(Animal Taxonomy, Systematics)

1. Choose the correct answer : $1 \times 4 = 4$

(i) The study of relationship among
organism is

(a) Taxonomy

- (b) Taxidermy
 - (c) Classification
 - (d) Systematics
- (ii) Which of the following is an example of homoplasy?
- (a) Presence or absence of hair
 - (b) Wings of birds and bats
 - (c) Forelimbs of mammals
 - (d) All of the above
- (iii) An observable attribute used to classify and group organisms is called—
- (a) Taxonomic rank
 - (b) Taxonomic character
 - (c) Taxonomic hierarchy
 - (d) Taxonomic category

- (iv) _____ is one of the several specimens used to describe a new species when no single holotype was designated.

- (a) Lectotype
- (b) Allotype
- (c) Syntype
- (d) Paratype

2. Write short notes on : **(any three)**

2×3=6

- (a) Taxonomic category
- (b) Biological species concept
- (c) Principle of priority
- (d) Parallelism
- (e) Chemotaxonomy

3. Answer briefly : **(any two)** $5 \times 2 = 10$

(a) Discuss about the contribution of systematics to biology with appropriate examples.

(b) What is a taxonomic key? Explain the different types of keys? $1 + 4 = 5$

(c) What is the full form of ICZN? Discuss the importance of the code in Zoological nomenclature. $1 + 4 = 5$

(d) What is phylogenetic tree? Discuss the concept of rooted and unrooted phylogenetic trees. $1 + 2 + 2 = 5$

4. Answer elaborately : **(any one)** $10 \times 1 = 10$

(a) What is a taxonomic character? What are the different types of taxonomic characters? Explain with appropriate examples. $1 + 9 = 10$

(b) Explain the different types of concepts of species.

Part-B

(Biostatistics)

1. Which of the following as a 'Measure of Partition'? *(Choose the correct answer)*

1

(a) Mean

(b) Median

(c) Quartile

(d) Mode

2. Write short notes on : **(any two)** $2 \times 2 = 4$

(a) Standard deviation and variance

(b) Chi-square test

(c) Analysis of variance

(d) Importance of biostatistics in biological research

3. Answer briefly : (*any two*) $5 \times 2 = 10$

(a) Discuss student *t*-test with its application.

(b) Write a brief note on the following terms :

Class interval, Class boundary, Class width, Relative frequency and Frequency density

(c) Differentiate mathematical average and positional average. Calculate median of weekly expenditure of 100 families from the following data : $1 + 4 = 5$

Expenditure : 0-10 10-20 20-30 30-40 40-50

Frequency : 14 23 27 21 15

(d) Define correlation. Find out the relationship between the inflorescence length and number of flowers in eight random samples of *Salvia* plant as per following data :

Length of inflorescence :	19	17	16	18	19	14	15	13
No. of flowers :	12	11	12	13	15	9	10	8

$1 + 4 = 5$