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 : 1×4=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)*** 5×2=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)*** 10×1=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)*** 2×2=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)*** 5×2=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

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