

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.**

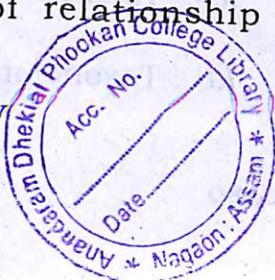
### Part-A

**(Animal Taxonomy, Systematics)**

1. Choose the correct answer :  $1 \times 4 = 4$
- (i) The study of relationship among organism is

(a) Taxonomy

B06FN 0180



Contd.

- (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

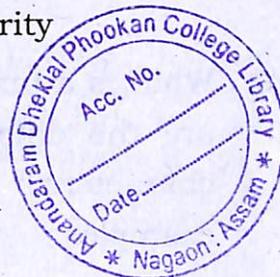
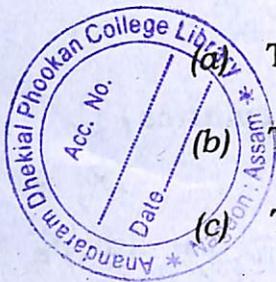
(iv) \_\_\_\_\_ is one of the several specimens used to describe a new species when no single holotype was designated.

- (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

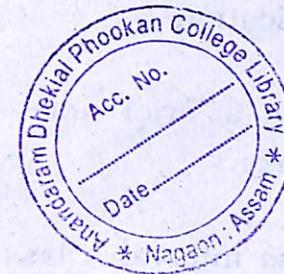
(c) Quartile

(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

$1+4=5$

