Total number of printed pages–4

14 (SEM–1) ZOO 1014

2024

ZOOLOGY

Paper : ZOO 1014

(Biosystematics and Biostatistics)

Full Marks : 20+20=40

Time : Two hours

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

UNIT–I

(Biosystematics)

1. Answer ***any five*** questions from the following : 2×5=10

   (a) Define species and explain why it is important in taxonomy.

   (b) What is a temporal subspecies ? Give one example.

Contd.

(c) Explain the morphological speci concept.

(d) Differentiate between genetic and non genetic intrapopulation variations.

(e) What is speciation ? Provide a brie outline of different modes of specification.

(f) Describe the significance of taxonomic characters in animal classification.

(g) What is the role of taxonomic rules in species classification ?

2. Answer the following questions : 5×2=10

(a) Analyze the difference among sympatric, parapatric, and allopatric speciation with examples.

Or

Apply the concept of population taxonomy to explain the significance of new systematics.

Explain subspecies classification within infraspecific categories, analyzing how hat differ from species-level categories.

Or

Create an argument for the importance of recognizing polytypic species in taxonomy, assessing its value in biodiversity conservation, evolutionary studies and ecological management.

UNIT–II

(Biostatistics)

uestion No. 1 is compulsory. Write any three questions from the rest.

. Write in brief *(any five)* : 1×5=5

(a) Variance

(b) Attribute

(c) Errors in hypothesis testing

(d) Simple random sampling

(e) Probable error of correlation coefficient

(f) Chi-square distribution

2. Define quartile. Determine the quartiles for the following distribution : 1+4=5

Class Interval :	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50
Frequencies :	4	12	16	22	10	8	6	4

3. Two types of batteries are tested for their length of life and the following data are obtained :

	Sample size	Mean life (in hours)	Variance
Type A :	9	600	121
Type B :	8	640	144

Is there a significant difference in two means : (Given $t_{0.05,\ 15} = 2.131$) 5

4. *(a)* What is confidence interval ? Write the formula used for 90% and 95% confidence limit for population. 2

(b) Differentiate between correlation and regression. Write about different properties of regression coefficient.

$1\frac{1}{2} \times 2 = 3$

5. Distinguish between ones-way and two-way classifications of ANOVA and describe the technique of calculation of ANOVA for two-way classification. 2+3=5
