

Reg. No. :

Name :

**V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/
Improvement) Examination, November 2025
(2019 to 2023 Admissions)
CORE COURSE IN ZOOLOGY
5B05ZLG : Evolution, Ethology and Research Methodology**

Time : 3 Hours

Max. Marks : 40

Instruction : Give illustrations and figures wherever necessary.

**SECTION – A
Evolution and Ethology**

- I. **Essay questions. Each question carries 8 marks. Answer any 1.** (1×8=8)
- 1) What is isolation ? Explain different types of isolating mechanisms.
 - 2) Explain pheromones and their role in animal behaviour.
- II. **Short essay. Each question carries 4 marks. Answer any 1.** (1×4=4)
- 3) Briefly explain Darwin's theory.
 - 4) Explain social organisation in honey bee colony.
- III. **Short answer questions. Each question carries 2 marks. Answer any 3.** (3×2=6)
- 5) Define Hardy-Weinberg Equilibrium.
 - 6) What is Mitochondrial eve hypothesis ?
 - 7) Write notes on geological timescale.
 - 8) Differentiate between Hibernation and Aestivation.
- IV. **Multiple choice questions. Each question carries 0.5 marks. Answer all.** (4×0.5=2)
- 9) Mutation theory was proposed by
a) Oparin b) Darwin c) Hugo de Vries d) Lamarck

P.T.O.

- 10) The earliest hominid known to make stone tools was
a) Australopithecus africanus
b) Homo habilis
c) Homo erectus
d) Cro-Magnon man
- 11) Which hormone is secreted by the pineal gland and regulates circadian rhythms ?
a) Cortisol
b) Melatonin
c) Oxytocin
d) Thyroxine
- 12) Type of mimicry in which two or more harmful or unpalatable species evolve similar warning signals to reinforce predator avoidance is
a) Mullerian mimicry
b) Wasmannian mimicry
c) Alluring mimicry
d) Batesian mimicry

**SECTION – B
Research Methodology**

- I. **Essay questions. Each question carries 8 marks. Answer any 1.** (1×8=8)
- 13) Write an essay on basic concepts of research with special reference to objectives, approaches and steps of research process.
 - 14) Describe different methods of graphical and diagrammatic representation of data.
- II. **Short essay. Each question carries 4 marks. Answer any 1.** (1×4=4)
- 15) Describe the structure of a scientific paper.
 - 16) Explain the concept of hypothesis and its types.

- III. **Short answer questions. Each question carries 2 marks. Answer any 3.** (3×2=6)
- 17) What is pseudoscience ?
 - 18) Define pilot study and mention its importance in research.
 - 19) Give an account on common sampling methods.
 - 20) Mention commonly used data analysis packages and their use.
- IV. **Multiple choice questions. Each question carries 0.5 marks. Answer all.** (4×0.5=2)
- 21) Inductive reasoning involves
a) Deriving general principles from specific observations
b) Applying a general rule to specific cases
c) Randomization
d) Hypothesis testing
 - 22) Plagiarism is
a) Using someone else's work without acknowledgment
b) Random sampling
c) Performing multiple trials
d) Statistical analysis
 - 23) A chi-square test is mainly used for
a) Comparing means of continuous data
b) Testing independence in categorical data
c) Regression analysis
d) Calculating standard deviation
 - 24) Which measure describes how uniformly individuals are distributed among the species in a community ?
a) Species richness
b) Species evenness
c) Dominance indices
d) Goodness of fit