



K23U 2386

Reg. No. :

Name :

V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/
Improvement) Examination, November 2023

(2019-2021 Admissions)

CORE COURSE IN ZOOLOGY

5B 05 ZLG : 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) Elaborate various evidence of organic evolution.
 - 2) Explain different types of learned behaviours.
- II. Short essay. (**Each** question carries **4** marks) Answer **any 1**. (1×4=4)
- 3) Explain major postulates and criticisms of Lamarckism.
 - 4) Discuss Oparin theory and Miller-Urey experiment.
- III. Short answer questions. (**Each** question carries **2** marks) Answer **any 3**. (3×2=6)
- 5) Differentiate Batesian mimicry and Mullerian mimicry.
 - 6) Write notes on sympatric speciation.
 - 7) Comment on the characteristics of Neanderthal man.
 - 8) What is mitochondrial eve hypothesis ?
- IV. Multiple choice questions. (**Each** question carries **0.5** mark) Answer **all**. (4×0.5=2)
- 9) What, according to Darwin is the primary driving force behind speciation ?
 - a) Successful, continuous and minor variations
 - b) Successful, discontinuous and major variations
 - c) Sudden mutations
 - d) Variations due to constant use or disuse

P.T.O.



- 10) _____ is the random evolutionary fluctuations in the allelic frequencies of a small population.
- Adaptive radiation
 - Genetic drift
 - Kin selection
 - None of these
- 11) The mimicking Monarch butterfly by Viceroy butterfly is an example for
- Concealing mimicry
 - Warning mimicry
 - Aggressive mimicry
 - Alluring mimicry
- 12) Workers of honeybees are
- Fertile females
 - Sterile females
 - Sterile males
 - Sterile males and females

SECTION – B
(Research Methodology)

- I. Essay questions. (**Each** question carries **8** marks.) Answer **any 1**. (1×8=8)
- 13) What are the different sampling methods used in biostatistics?
 - 14) Explain the major steps in scientific method.
- II. Short essay. (**Each** question carries **4** marks.) Answer **any 1**. (1×4=4)
- 15) Explain the different types of diagrammatic representations.
 - 16) Write notes on the structure of a scientific paper.
- III. Short answer questions. (**Each** question carries **2** marks.) Answer **any 3**. (3×2=6)
- 17) What is repeatability and replication ?
 - 18) What is tabulation ?
 - 19) What is peer review ?
 - 20) What is null hypothesis ?



IV. Multiple choice questions. (**Each** question carries **0.5** mark.) Answer **all**. (**4×0.5=2**)

- 21) Which measure of central tendency is least affected by outliers in a dataset ?
a) Mean b) Median c) Mode d) Standard deviation
- 22) Which section of a scientific paper provides a detailed explanation of how the research was conducted and the procedures followed ?
a) Abstract b) Introduction c) Methods d) Conclusion
- 23) Which measure of dispersion provides a measure of how much individual data points deviate, on average, from the mean of a dataset ?
a) Range b) Median
c) Quartile deviation d) Standard deviation
- 24) Which step in the scientific method involves proposing a possible explanation for an observed phenomenon ?
a) Collecting data
b) Formulating a hypothesis
c) Analysing results
d) Drawing conclusions

