

Mode of Examination: Online

Unique Paper Code	: 32231602
Name of the Paper	: Evolutionary Biology
Name of the Course	: B.Sc. (H) Zoology (CBCS)
Semester	: VI
Duration	: 3 Hours
Maximum Marks	: 75

### Instructions for Students

Write your Roll No., Name of the paper, Course, Semester, and Date of examination on the first page of the answer sheet.

Attempt **ANY FOUR** questions. All questions carry equal marks.

Q1. Describe the environmental conditions that would have allowed origin of life on Earth. Explain how simple chemical compounds in the early environment gave rise to basic biomolecules. Discuss the chemical reactions that resulted in formation of macromolecules from simple organic molecules. Give evidence to support the RNA World hypothesis. **18.75**

Q2. Describe Darwin's concept of Natural Selection and its modification during subsequent years in the light of modern knowledge of genetics. **18.75**

Q3. Describe Geological time scale and the major evolutionary events associated with different periods. Add a note on K-T mass extinction event. **18.75**

Q4. A population evolves into two separate species while living in the same geographic region. How do you explain it? How is it different from evolution of populations separated by geographical barriers, into new species? Explain with examples. Describe other modes of speciation you are familiar with. **18.75**

Q5. What explanations have been propounded to explain the increase in ground-dwelling apes during the Miocene epoch? Describe the major fossil lineages of the Hominins. Explain how mitochondrial DNA can be used to track the origins and migrations of *Homo sapiens*? **18.75**

Q6. Describe the various features of a phylogenetic tree. Distinguish between rooted and unrooted phylogenetic tree. Describe any phenetic method of construction of a phylogenetic tree. **18.75**