2024
B.A./B.Sc.
Sixth Semester
CORE – 14
ZOOLOGY
Course Code: ZOC 6.21
(Evolutionary Biology)

Total Mark: 70   *Pass Mark: 28*
Time: 3 hours

Answer <u>five</u> *questions, taking* <u>one</u> *from each unit.*

UNIT–I

1. Give an account on the theory of Lamarckism and explain its evidence. Add a note on its criticism.   12+2=14

2. Write note on the following: 7×2=14
   (a) Geological time scale
   (b) Heritable variations

UNIT–II

3. What is Hardy-Weinberg law? Explain the factors influencing Hardy-Weinberg equilibrium.   3+11=14

4. Write notes on the following: 7×2=14
   (a) Density-dependent selection
   (b) Role of migration and mutation in changing allele frequencies

UNIT–III

5. Define isolating mechanism? Explain the types of isolating mechanism. 14

6. What are some of the key differences in beak morphology between different species of Darwin finches, and how do these differences aid in their ecological niche specialization? Discuss the effects of clines on gradual changes in traits across geographical gradients in population of organism.   7+7=14

7. Give a detailed account on the primate phylogeny from *Dryopithecus* leading to *Homo sapiens*. 14

8. What distinct traits set the hominin unique apart from other primates? Write a note on the molecular analysis of human origin. 7+7=14

UNIT–V

9. Define phylogenetic tree and write the difference between ancestral trait and derived trait, branch and node, cladogram, and phylogram.

2+4+4+4=14

10. Build a phylogenetic tree using the information the given below table. The table shows presence (+) or absence (0) of various features. 14

Feature	Lamprey	Antelope	Bald Eagle	Alligator	Sea bass
Lungs	0	+	+	+	0
Jaws	0	+	+	+	+
Feathers	0	0	+	0	0
Gizzard	0	0	+	+	0
Fur	0	+	0	0	0

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