B.Sc. Semester-VI Examination, 2022-23

ZOOLOGY [Honours]

Course ID : 62612 Course Code : SH/ZOO/602/C-14

Course Title : Evolutionary Biology

Time : 1 Hour 15 Minutes Full Marks : 25

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

UNIT-I

1. Answer any **five** of the following questions: 1×5=5

   a) Define coacervates?

   b) What is founder effect?

   c What is the 'Endosymbiotic hypotheses of mitochondrial origin?

   d) Which is the largest unit of Geological time scale?

   e) What do you mean by anagenesis ?

   f) What do you mean by stasis?

   g) Why is persimony important in Phylogenetic tree?

   h) What is allele frequency?

UNIT-II

2. Answer any **two** questions: 5×2=10

   a) Define selection coefficient. Describe K-T extinction with example. 2+3=5

   b) What are the main sources of evolutionary variation? Write a short note on 'heterozygote superiority' of selection. 2+3=5

   c) What are essential conditions for maintaining Hardy-Weinberg equilibrium in a population? ln a population the genotype frequency of taster for phenyl thiocarbamide is *TT*=0.45, *Tt* =0.30 and *tt* = 0.25. Calculate the gene frequency of *T* and *t* gene population according to Hardy-Weinberg equilibrium. l+4=5

   d) Define adaptive radiation. Explain it with the example of Finch speciation on the Galapagos (Darwin's) Finches. l+4=5

UNIT-III

3. Answer any **one** question: 10×1=10

   a) Describe the Miller-Urey experiment with suitable diagram. Why was the experiment important? 4+2+4

b) What is isolating mechanism of speciation? Describe briefly about different pre-zygotic and post-zygotic isolating mechanisms of speciation. 2+4+4

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