

Roll No. 2100182508

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Total Pages : 3

**325504**

**December 2023**

**B.Sc. (Life Sciences) – V SEMESTER**

**Evolution Biology (DEC-01)**

Time : 3 Hours]

[Maximum Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any **four** questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) What is ribozyme? (1.5)  
(b) What is punctuated equilibrium? (1.5)  
(c) What are continuous quantitative characters? Give an example also. (1.5)  
(d) What do you understand by speciation? (1.5)  
(e) Define quantitative trait loci. (1.5)  
(f) What is cambrian explosion in terms of macroevolution? (1.5)

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- (g) What is selection coefficient in evolution and how it is calculated? (1.5)
- (h) What is Haldane's rule? (1.5)
- (i) Define endosymbiotic theory. (1.5)
- (j) What is the effect of migration on Hardy Weinberg equilibrium? (1)

### PART-B

2. (a) Describe the evolution of photosynthetic pathways. (8)
- (b) Explain Miller-Urey experiment along with diagram. (7)
3. (a) Write a note on biogeny. (8)
- (b) Discuss the major postulates of Neo-Darwinism. (7)
4. (a) Explain Lamarckism theory of evolution and also state the various objections raised against it. (9)
- (b) Briefly discuss Darwin's theory of evolution. (6)
5. (a) Consider a single locus with two alleles which are as H-W equilibrium. If the frequency of one of the homozygous genotypes is 0.64. What is the frequency of heterozygosity in the population? (5)
- (b) Describe the significance of genetic drift mechanism on the basis of founder's effect and bottleneck phenomenon. (10)

6. (a) Explain Dobzhansky-Muller theory of speciation. (5)
- (b) Discuss the rules that must be followed for a population to be in Hardy Weinberg equilibrium. (5)
- (c) Discuss phenetic species concept. (5)
7. Discuss the following:
- (i) Biological species concept.
- (ii) Parapatric speciation.
- (iii) Clines and Ring species. (5×3=15)