

Total number of printed pages - 4

63 (FY)SEM-3/MIN/ZOOMIN2014

2025

ZOOLOGY

Paper : ZOOMIN2014

(Evolutionary Biology and Genetics)

Full Marks : 50

Pass Marks : 20

Time : Two hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer : 1×5=5

(a) Who introduced the theory of evolution through natural selection ?

- (i) Charles Darwin
- (ii) Jean Baptiste Lamark
- (iii) Gregor Mendel
- (iv) Carl Linnaeus

(b) The movement of genes from one population to another is termed as

- (i) Genetic drift
- (ii) Genotype
- (iii) Gene flow
- (iv) Mutation

(c) Name the location where bacterial genome is located in bacteria

- (i) Mitochondria
- (ii) Nucleoid
- (iii) Nucleus
- (iv) Cytoplasm

(d) The constitution of an organism that is inherited from parents is termed as

- (i) Phenotype
- (ii) Dominant allele
- (iii) Genotype
- (iv) Recessive allele

(e) Which mechanism describes the sex-determination in *Drosophila*?

- (i) XX-XY type
- (ii) Haplodiploidy
- (iii) ZZ-ZW type
- (iv) XX-XO type

2. Answer the following questions : **(any five)**
2×5=10

- (a) What is speciation?
- (b) What is the main idea of the theory of evolution
- (c) Define Epistasis.
- (d) What is adaptation in evolution?
- (e) Write about crossing over.
- (f) What is heterozygous superiority?
- (g) Write about the role of chromosome in inheritance.

3. Answer the following questions : **(any five)**
5×5=25

- (a) Write a note on macroevolution.
- (b) What is the main idea of Lamarckism?

- (c) Write the key differences between co-dominance and Incomplete dominance.
- (d) Explain the concept of Extra-chromosomal inheritance.
- (e) What is linkage and how it affects the inheritance of traits?
- (f) What is somatic cell hybridization?
- (g) Write about the Neo-Darwinism.
- (h) Describe the chromosomal mechanism of sex-determination in Man.

4. Answer the following questions : **(any one)**

10×1=10

- (a) What do you mean by Mendelian Genetics? Explain Mendel's laws of inheritance and their significance in understanding genetic traits. 2+8=10
- (b) What is Transposons? Describe different types of viral recombinations with suitable diagrams. 2+8=10