

**SF-17012**

(553) M.Sc. Zoology (Third Semester)  
Examination, Dec.-2023

**Compulsory /Optional**

POPULATION GENETICS & EVOLUTION

Paper - IV

*Time : Three Hours ] [Maximum Marks : 080*

**Note :** Answer From both the Section as  
Directed. The figures in the right-  
hand margin indicate marks.

**Section- A**

1. Answer the following very short not type  
questions:  $1 \times 10 = 10$
- (a) Mutation by radiation was first  
experimentally demonstrated by ...
- (b) Species diversification represents ...

**(2)**

- (c) First man originated in ..... age.
- (d) Genetic Improvement of human  
race is called ....
- (e) What is Analogous organ?
- (f) The Term gene was given by ....
- (g) What is vestigial organ?
- (h) Allopatric species are .....
- (i) What is genetic drift?
- (j) Give example of any two Migratory  
bird?
2. Answer the following questions:  $2 \times 5 = 10$
- (a) Write two mendel's Law?
- (b) Explain Metapopulation?
- (c) Define Nucleotide?
- (d) What is parapatric speciation?
- (e) What is gene Mutation?

(3)

**Section- B**

Answer the following questions:  $15 \times 4 = 60$

3. Explain Hardy-Weinberg Law of genetic equilibrium?

**OR**

Write short notes on :

- (a) Meiotic drive  
(b) Mutation
4. What is Isolation, Explain pattern and mechanisms of reproductive Isolation?

**OR**

Write short notes on :

- (a) Inbreeding depression.  
(b) Difference between Allopatric and sympatric.
5. What is phylogenetic trees and explain How to construct phylogenetic trees?

(4)

**OR**

Write short notes on :

- (a) Molecular clock.  
(b) Gene evolution.
6. Short notes on :
- (a) Phenotypic variation.  
(b) Metapopulation.

**OR**

Explain Genetic structures of Natural population?