

Roll No.

Exam Code : J-21

Subject Code—53681

M.Sc. EXAMINATION

(Main) (Batch 2020 Onwards)

(Second Semester)

ZOOLOGY

M-Z203

Population Genetics and Evolution

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any *Five* questions. Q. No. **1** is compulsory. All questions carry equal marks.

1. Answer the following questions : **2×7=14**

- (i) Mutation
- (ii) Genetic drift
- (iii) Phenotype
- (iv) Allopatric speciation

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(v) Metapopulation

(vi) Heterosis

(vii) Genotype.

2. Explain the following : **7×2=14**

(i) Neo-Darwinism

(ii) Natural selection.

3. Explain the following : **7×2=14**

(i) Hardy-Weinberg law of genetic equilibrium

(ii) Neutral hypothesis.

4. Explain different models which explain the change in the genetic structure of population.

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5. Explain the following : **5+5+4**

(i) Inbreeding depression

(ii) Estimation of heritability

(iii) Phenotypic plasticity.

6. Explain the concept of species. How is reproductive isolation helpful in speciation ?

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7. Write short notes on the following : **7×2=14**

(i) Sympatric speciation

(ii) Microevolution.

8. What is Metapopulation ? Explain methods of monitoring of natural population. **14**

9. What is Phylogenetic Tree ? Explain various methods of constructing phylogenetic tree. **14**