

PD-388-S.E.-CV-19
M.Sc. ZOOLOGY (3rd Semester)
Examination, Dec.-2020
Paper-IV
POPULATION GENETICS & EVOLUTION

Time : Three Hours]

[Maximum Marks : 80
[Minimum Pass Marks : 29

Note : Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

Section-A

1. Answer the following very short note type questions:- **1x10=10**

- (a) Name the contemporary scientist who gave the idea of organic evolution with Darwin.
- (b) To which destabilizing forces of evolution sampling error is associated with?
- (c) Name the two species that contribute to from mule.
- (d) By which formula genotypic frequency of a population is calculated.
- (e) What is the raw material of organic evolution.
- (f) Name the type of species which is morphologically similar but a distinct species.
- (g) Name the Golden Era of Reptiles.
- (h) Which ape is regarded as the closest relatives of human being.
- (i) Who proposed the punctuated Equilibria Hypothesis of organic revolution.
- (j) Who is the author of the book "Evolution: the modern synthesis."

2. Answer the following questions:- **2x5=10**

- (a) What do you mean by polygenic Inheritance?
- (b) What are the assumptions of Hardy Weinberg law of genetic equilibrium?
- (c) Define Gene pool and Gene Frequency.
- (d) What is cladogenesis and Anagenesis?
- (e) Define Adaptive Radiation.

Section-B

15x4=60

Answer all questions.

3. A sample of 426 individuals of human population typed for MN blood groups has following results: MM=238, NN=36, MN=152, Calculate the Gene frequency of M and N in the population..

OR

Describe the role of Natural selection in Evolution.

4. What do you mean by Quantitative traits? Analyze it with proper example one each from plant and animal world.

OR

Differentiate the term sympatric and Allopatric speciation with Suitable illustrations.

5. What are mechanisms that are involved in formation of higher taxa? Explain it various views and models of evolutionary biologists.

OR

Define ontogeny and phylogeny. Describe various ways to construct phylogenetic tree.

6. Describe about the genetical basis of population and evolution.

OR

Write short notes on:-

- (a) Ecological Aspects of evolution.
- (b) Molecular clock