

1778

5. (a) Describe the various pre-zygotic and post-zygotic isolating mechanisms using suitable examples. 12
- (b) Mass extinction events can facilitate species diversity, Yes or No? Justify your answer. 3
6. Write short notes on any **three** of the following : 5×3=15
- (a) Neo-Darwinism
- (b) Endosymbiotic theory
- (c) Geological time scale
- (d) Kin selection

This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **1778** **I**

Unique Paper Code : 2232013603

Name of the Paper : DSC Evolutionary
Biology NEP-UGCF

Name of the Course : **B.Sc.(Hons.) Zoology**

Semester : VI

Time : 2 Hours **Maximum Marks : 60**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt **four** questions in all.
- (c) Question No. **1** is compulsory.

1. All parts of this question are **compulsory**: 15

- (a) Define the following : 4
- (i) Hominins
- (ii) Inbreeding depression
- (iii) Genetic load
- (iv) Cline

- (b) Differentiate between the following : 6
- (i) Back ground extinction and Mass extinction
 - (ii) Microevolution and Macroevolution
 - (iii) Lamarckism and Darwinism
- (c) Write one contribution of the following scientists : 2
- (i) Raymond Dart
 - (ii) H.B.D. Kettlewell
- (d) Fill in the blanks : 3
- (i) Australopithecus showed evidence of locomotion.
 - (ii) A species consists of a series of neighboring populations that can interbreed with adjacent populations but not with those at the ends.
 - (iii) refers to the reduction in the average fitness of a population due to the presence of deleterious alleles.

- 2.** (a) Explain the process of evolution through natural selection. Discuss the different types of natural selection with suitable examples. 3+9=12
- (b) Discuss the role of adaptive resemblance as a driver of frequency dependent selection. 3
- 3.** (a) Explain the biochemical theory of origin of life. Describe in detail the experimental evidence provided by Stanley Miller and Harold Urey in support of this theory. 2+4=6
- (b) Describe the trends leading to the evolution of modern horse with reference to important fossil records. 9
- 4.** (a) Explain the different ways in which heritable variations contribute to evolution. 9
- (b) Define biological species concept. Outline its scope and limitations. 3+3=6