

BZYCT-137

ASSIGNMENT BOOKLET

**Bachelor's Degree Programme
(BSCG)
GENETICS AND EVOLUTIONARY BIOLOGY**

Valid from 1st January, 2021 to 31st December, 2021



**School of Sciences
Indira Gandhi National Open University
Maidan Garhi
New Delhi-110068
(2021)**

Dear Student,

Please read the section on assignments in the Programme Guide for Core Courses that we sent you after your enrolment. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation, **which would consist of one tutor-marked assignment** for this course. The assignment is in this booklet, and it consists of two parts, Part A, and B. The total marks of all the parts are 100, of which 35% are needed to pass it.

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully:

- 1) On top of the first page of your answer sheet, please write the details exactly in the following format:

ROLL NO.:

NAME:

ADDRESS:

.....

.....

COURSE CODE:

COURSE TITLE:

ASSIGNMENT NO.:

STUDY CENTRE: **DATE:**

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

- 2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.
- 3) Leave 4 cm margin on the left, top and bottom of your answer sheet.
- 4) Your answers should be precise.
- 5) Complete each of Part A and Part B of this assignment separately, and **submit them together**.
- 6) The assignment answer sheets are to be submitted to your Study Centre as per the schedule made by the study centre. **Answer sheets received after the due date shall not be accepted.**

We strongly suggest that you retain a copy of your answer sheets.

- 7) This assignment is **valid from 1st January, 2021 to 31st December, 2021**. If you have failed in this assignment or fail to submit it by December, 2021, then you need to get the assignment for the year 2022, and submit it as per the instructions given in the Programme Guide.
- 8) **You cannot fill the exam form for this course** till you have submitted this assignment.

We wish you good luck.

ASSIGNMENT
GENETICS AND EVOLUTIONARY BIOLOGY

Course Code: BZYCT-137
Assignment Code: BZYCT-137/TMA/2021
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

Part-A

Maximum Marks: 50

1. Define the following terms: (2×5=10)
 - a) Phenotype
 - b) Translocation
 - c) Barr Body
 - d) Test cross
 - e) Pleiotropic gene
2. Differentiate between the following pairs: ($2\frac{1}{2} \times 4=10$)
 - i) DNA and RNA
 - ii) Down's syndrome and Edward's syndrome
 - iii) Law of segregation and Law of independent assortment
 - iv) Deletion and Duplication
3. Write short notes on the following: (2×5=10)
 - i) Dosage compensation in humans
 - ii) Systems of Extra Nuclear Inheritance
4.
 - i) Explain the cytological mechanism of crossing over. (5)
 - ii) Describe the role of multiple alleles in self incompatibility in plants. (5)
5. What is mutation? Explain mutagenesis and significance of mutation in detail. (10)

Part-B

Maximum Marks: 50

6. Define the following terms: (2×5=10)
 - i) Genetic drift
 - ii) Homologous organ
 - iii) Species
 - iv) Coacervate
 - v) Vestigial organ
7. Differentiate between the following pairs: ($2\frac{1}{2} \times 4=10$)
 - i) Allopatric and Sympatric Speciation

- ii) Ring species and Biological species
 - iii) Group selection and Kin selection
 - iv) Pre-mating and Post mating isolation
8. Define extinction of species. Discuss the role of extinction in evolution. (10)
9. Write short notes on the following: (2×5=10)
- i) Neo Darwinism
 - ii) Neo Lamarckism
10. Discuss “struggle of existence” and “survival of fittest” with reference to evolution. (10)