

BZYCT-137

ASSIGNMENT BOOKLET

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

Valid from 1st January, 2022 to 31st December, 2022



**School of Sciences
Indira Gandhi National Open University
Maidan Garhi
New Delhi-110068
(2022)**

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, 2022 to 31st December, 2022.** 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/2022
Maximum Marks: 100

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

Part-A

1. Define the following terms: (2×5=10)
 - i) Heterozygous
 - ii) Chromosome mapping
 - iii) Genetic Drift
 - iv) Frame shift mutation
 - v) Dosage compensation

2. Define the following terms: ($2\frac{1}{2} \times 4=10$)
 - i) Codominance
 - ii) Analogous organ
 - iii) DNA barcoding
 - iv) Mutation

3. Differentiate between the following pairs: ($2\frac{1}{2} \times 8=20$)
 - i) Sex-limited traits and Sex-influenced traits
 - ii) Somatic mutations and Germinal mutations
 - iii) Sympatric speciation and Allopatric speciation
 - iv) X-Linked traits and Y-Linked traits in Humans
 - v) Monoploidy and Polyploidy
 - vi) Dominant Epistasis and Recessive Epistasis
 - vii) Dihybrid crosses and Trihybrid crosses
 - viii) Inversions and Translocations

Part-B

4. What is speciation? Explain the mode of speciation. (10)

5.
 - i) Write a note on the applications of Polyploidy. (5×2=10)
 - ii) Explain the natural causes of extinction of a species.

6. Explain the Trisomy 13 – Patau syndrome in detail. (10)

7. Explain in detail the technique used for determining the age of rocks. (10)
8. Write short notes on the following: (5×4=20)
- i) The Down Syndrome
 - ii) Neo-Darwinism
 - iii) Crossing over
 - iv) Possible origin of organelles