

BBYET-141

ASSIGNMENT BOOKLET

Bachelor's Degree Programme

(BSCG)

(Cell and Molecular Biology)

Valid from 1st January, 2024 to 31st December, 2024



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

(2024)

Dear Student,

Please read the section on assignments in the Programme Guide for B. Sc. 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) Solve this assignment, and **submit the complete assignment answer sheets within the due date.**
- 6) The assignment answer sheets are to be submitted to your Study Centre within the due date. **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, 2024 to 31st December, 2024.** If you have failed in this assignment or fail to submit it by December, 2024, then you need to get the assignment for the year 2025, and submit it as per the instructions given in the Programme Guide.
- 8) **You cannot fill the examination form for this course** until you have submitted this assignment.

We wish you good luck.

ASSIGNMENT

Course Code: BBYET-141
Assignment Code: BBYET-141/TMA/2024
Maximum Marks: 100

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

1. Describe the structure, composition and functions of mitochondria along with suitable diagram. (10)
2. Explain the concept of Operon. Describe their role in gene regulation along with suitable diagram. (10)
3.
 - a) Discuss the factors that determine the resolving power of a microscope. (5×2=10)
 - b) Differentiate between transmission and scanning electron microscopes.
4.
 - a) Discuss the mechanisms involved in gene silencing by RNA interference. (5×2=10)
 - b) Compare the process of DNA replication in prokaryotes and eukaryotes.
5.
 - a) Discuss the common features of chloroplast and mitochondrial DNA with labelled diagram. (5×2=10)
 - b) Discuss the role of Cdk's during cell cycle progression.
6. List various components of nucleus. Describe the structure of 'nuclear pore complex' with the help of neat labelled diagram. (5×2=10)
7. Describe various stage of *Meiosis* I and II with the help of suitable diagram. (10)
8.
 - a) Discuss the ErvinChargaff's Rule. (5×2=10)
 - b) Give an outline of polypeptide synthesis in bacteria.
9. Describe Griffith's experiment for demonstration of DNA as a genetic material with suitable diagram. (10)
10. Write short notes on the following: (2½×4=10)
 - i) Peroxixomes
 - ii) Golgi apparatus
 - iii) *Telomerase* enzyme
 - iv) Endosymbiotic Theory