

BBYCT-137

ASSIGNMENT BOOKLET

Bachelor's Degree Programme

(BSCG)

(Plant Physiology and Metabolism)

Valid from 1st January, 2025 to 31st December, 2025



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

(2025)

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 is of 100 marks, 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 2025 to 31st December, 2025.** If you have failed in this assignment or fail to submit it by December, 2025, then you need to get the assignment for the year 2026, 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

(Tutor Marked Assignment)

Course Code: **BBYCT-137**
Assignment Code: **BBYCT-137/TMA/2025**
Maximum Marks: **100**

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

1. Define the following terms: (2×5=10)
 - i) Matric potential
 - ii) Holochrome
 - iii) Holozyme
 - iv) Heterocyst
 - v) Fluorescence
2. How enzyme activity gets altered by inhibitors? Explain. (10)
3. Describe the biochemistry of ammonia assimilation in plants. (10)
4. What are photosynthetic and non-photosynthetic pigments? Discuss their distribution and role in plant kingdom. (10)
5. Describe the role that macro and micro nutrients play in the growth and development of plants. Describe the deficiency symptoms of various elements in plants. (10)
6. Describe the role of auxin and cytokinin in plant development. (10)
7.
 - a) Describe the Munch Mass Flow model of translocation of solutes. (5)
 - b) Discuss the 'sink' to 'source' transition during phloem unloading. (5)
8.
 - a) Distinguish between short day and long day plants giving two examples of each. What is the role of phytochrome in flowering? (5)
 - b) What are allosteric enzymes? Discuss with the help of an example. (5)
9.
 - a) What are the different biochemical and morphological changes recorded in plants in response to stress conditions? Discuss. (5)
 - b) How does ABA act as a stress hormone? (5)
10.
 - a) Describe the structure of mycorrhiza. Comment on the role of mycorrhizal root association in mineral nutrition. (5)
 - b) Describe the process of glycolysis with the help of a labelled diagram. (5)