

**BBYCT-137**

# **ASSIGNMENT BOOKLET**

**Bachelor's Degree Programme**

**(BSCG)**

**(Plant Physiology and Metabolism)**

**Valid from 1<sup>st</sup> January, 2024 to 31<sup>st</sup> 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 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:

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**ROLL NO.:** .....

**NAME:** .....

**ADDRESS:** .....

.....

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**COURSE CODE:** .....

**COURSE TITLE:** .....

**ASSIGNMENT NO.:** .....

**STUDY CENTRE:** ..... **DATE:** .....

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**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 1<sup>st</sup> January 2024 to 31<sup>st</sup> 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**  
**PLANT PHYSIOLOGY AND METABOLISM**

Course Code: **BBYCT-137**  
Assignment Code: **BBYCT-137/TMA/2024**

**Maximum Marks: 100**

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

1. a) Discuss the components of water potential. (7)  
b) How is the inward to outward flow of water from cell to cell calculated? (3)
2. a) Describe the mechanism of stomatal opening. (6)  
b) Write a note on ABA signaling model to explain stomatal movements. (4)
3. a) Discuss the techniques to study the role of mineral nutrients. (5)  
b) What are the roles of Fe and Zn in mineral nutrition in plants? (5)
4. a) Describe active transport and role of pumps in nutrient transport in plants. (7)  
b) What is the structure of chlorophyll? (3)
5. a) Discuss the photosynthetic unit and Light Harvesting Complexes. (7)  
b) What is Emerson enhancement effect? (3)
6. Discuss the Crassulacean acid metabolism (CAM) and significance of CAM plants. (10)
7. a) Describe the experiments on translocation of organic substances through phloem. (6)  
b) What is Munch mass flow model for translocation? (4)
8. Discuss the following: (2×5=10)  
a) Mechanism of enzyme action  
b) Regulation of glycolysis
9. a) Describe ammonium assimilation and its regulation. (8)  
b) What are bacteroides? (2)
10. Write short notes: (2½×4=10)  
a) Bioassay of gibberellin  
b) Brassinosteroids  
c) Heat shock proteins  
d) Properties of phytochrome