

**BBYCT-137**

# **ASSIGNMENT BOOKLET**

**Bachelor's Degree Programme**

**(BSCG)**

**(Plant Physiology and metabolism)**

**Valid from 1<sup>st</sup> January, 2021 to 31<sup>st</sup> 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 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:

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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 Part A and Part B of 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 2021 to 31<sup>st</sup> 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 examination form for this course** until you have submitted this assignment.

We wish you good luck.

## ASSIGNMENT

Course Code: BBYCT-137

Assignment Code: BBYCT-137/TMA/2021

Maximum Marks: 100

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

1. Define the following: (10)
  - i) Symplastic pathway
  - ii) Diffusion
  - iii) Imbibition
  - iv) Osmosis
  - v) Hypertonic solution
  - vi) Semipermeable membrane
  - vii) Aquaporins
  - viii) Embolism
  - ix) Lenticular transpiration
  - x) Stomatal frequency
2.
  - a) Discuss the criteria of essentiality of a mineral nutrient. (5)
  - b) Describe the process of transport of ions across plasma membrane. (5)
3.
  - a) Describe the structure of photosynthetic pigment Chl<sub>a</sub>. (5)
  - b) Describe the Non-Cyclic and Cyclic Photophosphorylation – Z- Scheme with the help of an outline diagram. (5)
4.
  - a) Discuss passive symplastic phloem loading. (5)
  - b) Differentiate between photorespiration and dark respiration. (10)
5.
  - a) Describe Krebs Cycle (TCA Cycle) with labelled diagram. (10)
  - b) Describe Pentose Phosphate Pathway with diagram. (5)
6. Discuss genetic regulation of nitrogen fixation. (5)
7. List various plant hormones and describe their functions. (10)
8. Discuss structure of phytochrome, its properties and describe phytochrome-mediated responses. (5)
9. Discuss the ways the plants adapt to stress. (5)

10. Write short notes on:

(2 × 5= 10)

- i) Allosteric enzymes
- ii) Respiratory quotient (RQ)
- iii) Gifted species
- iv) Synthetic growth hormones
- v) Flowering hormones