



K23U 1107

Reg. No. : .....

Name : .....

IV Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/  
Improvement) Examination, April 2023  
(2019 Admission Onwards)

COMPLEMENTARY ELECTIVE COURSE IN BOTANY  
4C04BOT : Plant Physiology, Ecology and Applied Botany

Time : 3 Hours

Max. Marks : 40

*Instruction : Draw diagrams wherever specified.*

PART – A

Objective type questions. Answer **all**.

(4×1=4)

1. Select an essential element for the plant growth
  - a) N
  - b) Zn
  - c) Mn
  - d) Fe
2. The reaction centre in cyclic photophosphorylation is
  - a) P680
  - b) P750
  - c) P700
  - d) P690
3. Velamen roots are seen in
  - a) Hydrophytes
  - b) Halophytes
  - c) Epiphytes
  - d) Xerophytes
4. The hormone helps in fruit ripening
  - a) Auxin
  - b) Gibberellins
  - c) IAA
  - d) Ethylene

PART – B

Short essay questions. Answer **any eight**.

(8×2=16)

5. What is genetically modified crop ?
6. Differentiate diffusion from osmosis.
7. Define antagonism in plants.
8. Write a note on T-budding.

P.T.O.

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9. What is pressure-flow hypothesis ?
10. Write two functions of auxin.
11. Write short notes on anti-transpirants.
12. What is water potential ?
13. What are hydathodes ?
14. What is Emerson's enhancement effect ?
15. What are CAM plants ?
16. Differentiate hypertonic and isotonic solution.

**PART – C**

Essay questions. Answer **any four**.

**(4×3=12)**

17. Describe the processes of abscission.
18. What are synthetic hormones ? Write two examples.
19. Describe K<sup>+</sup> ion theory.
20. Transpiration is necessary evil. Explain briefly.
21. Briefly describe C4 cycle and its significance.
22. Explain the factors affecting photosynthesis.

**PART – D**

Long essay questions. Answer **any one**.

**(1×8=8)**

23. Explain the morphological, physiological and anatomical adaptations of xerophytes.
  24. Explain the role of micro and macro nutrients in plants.
  25. Explain the process of dark reaction in photosynthesis.
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**PART – A**

Objective type questions. Answer all.

**(4×1=4)**

1. When one organism is benefitted without affecting the other is called

- |                 |                 |
|-----------------|-----------------|
| a) Parasitism   | b) Commensalism |
| c) Saprophytism | d) Symbiosis    |

2. The quickest method of plant breeding is

- |                  |                      |
|------------------|----------------------|
| a) Introduction  | b) Selection         |
| c) Hybridization | d) Mutation breeding |

3. Some strains of *Bacillus thuringiensis* can kill certain insects such as

- |                  |              |
|------------------|--------------|
| a) Lepidopterans | b) Scorpion  |
| c) Fruit fly     | d) Dragonfly |

4. Edaphic factors are due to

- |         |                        |
|---------|------------------------|
| a) Man  | b) Temperature         |
| c) Soil | d) Herbivorous animals |

**PART – B**

Short Essay Questions. Answer any eight.

**(8×2=16)**

5. Write a brief account on myrmecophily.

6. State the differences between cutting and layering.

P.T.O.



7. What is Donnan equilibrium ?
8. Discuss the factors affecting transpiration.
9. Briefly explain plant quarantine.
10. Explain the water potential.
11. Discuss Emerson's enhancement effect.
12. Briefly explain the source-sink relationship.
13. What is vermiculate ?
14. What are the adaptations of halophytes ?
15. Briefly explain photorespiration.
16. Discuss about red drop.

PART – C

Essay questions. Answer **any four**.

(4×3=12)

17. Explain the ascent of sap with root pressure and transpiration pull theories.
18. Distinguish between Passive and active absorption.
19. Factors affecting the rate of Photosynthesis.
20. Explain the structure of photosynthetic apparatus with diagram.
21. Discuss the importance of micro and macro nutrients.
22. Briefly explain the synergistic phytohormones.

PART – D

Long essay questions. Answer **any one**.

(1×8=8)

23. Write an essay on cyclic and noncyclic photophosphorylation.
  24. Explain translocation of organic solutes in plants and its pathway of movements.
  25. Describe the concept of Ecosystem with its structure and function.
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