

C 21261

(Pages : 2)

Name.....

Reg. No.....

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2022

Botany

BOT4C04—PLANT PHYSIOLOGY, ECOLOGY AND GENETICS

(2014—2018 Admissions)

Maximum : 64 Marks

Time : Three Hours

Section A

Answer all questions in a word or phrase.
1 mark each.

1. The ratio of monohybrid test cross.
2. The character that is not expressed in the first filial generation.
3. Negatively geotropic breathing roots in halophytes.
4. Name of a plant with succulent, flat and fleshy leaves for storing water.
5. The site of Calvin cycle.
6. The cell organelle associated with protein synthesis.
7. The pressure developed in solution due to the presence of dissolved salts in it.
8. The enzyme for carboxylation in C_3 plants.
9. Name the plant hormone responsible for apical dominance in plants.
10. Name the flowering hormone.

(10 × 1 = 10 marks)

Section B (Short Answer Questions)

Answer any seven questions.
2 marks each .

11. State the law of segregation.
12. Distinguish back cross and test cross.
13. Write short notes on diffusion.
14. What are antitranspirants ? Give an example.
15. Distinguish action spectrum and absorption spectrum.
16. State the law of limiting factors.
17. What are the anatomical peculiarities of C_4 plants ?

Turn over

18. Which are the major events during the light phase of photosynthesis?
19. Write a brief note on senescence.
20. Write any four important physiological role of cytokinins in plants.

Section C (Short Essay Questions)

Answer any **six** questions.
4 marks each.

(7 × 4 = 28)

21. What is incomplete dominance? Illustrate your answer with an example.
22. Write notes on Mendel's monohybrid experiments.
23. Comment on the morphological adaptations exhibited by xerophytes.
24. 'Transpiration is a necessary evil'. Comment on the statement.
25. Explain cyclic photophosphorylation. Add a note on its significance.
26. Describe the mechanism of anaerobic respiration.
27. Define seed dormancy. Explain the methods to overcome seed dormancy.
28. Discuss the importance of vernalization in flowering plants.

Section D (Essay Questions)

Answer any **two** questions.
8 marks each.

(6 × 4 = 24)

29. Explain Calvin cycle in detail.
30. Describe the mechanism of opening and closing of stomata and the role of potassium ions in its movement.
31. Explain the concept of ecosystem and its biotic components.

(2 × 8 = 16)