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Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, August 2022

First Degree Programme under CBCSS

BOTANY

Complementary Course

BO 1431 : PLANT PHYSIOLOGY, PLANT ECOLOGY, HORTICULTURE AND PLANT BIOTECHNOLOGY

(2014–2018 Admission)

Time : 3 Hours Max. Marks : 80

PART A

Answer in **one** word to maximum of **two** sentences

Answer **all** questions

1. Ascent of sap.
2. Callus.
3. T-budding.
4. Food web.
5. Protoplasmic streaming theory.
6. Oxidative phosphorylation.
7. Symplast pathway.

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8. Edaphic factors.

9. Sphagnum moss.

10. Nursery spade. **(10 × 1 = 10 Marks)**

PART B

Short Answer (Not to exceed **one** paragraph)

Answer any **8** questions. Each question carries **2** marks.

11. Write a note on estuarine productivity.

12. What are the physiological adaptations of CAM plants?

13. Explain osmosis with the mechanisms involved.

14. Compare dedifferentiation and redifferentiation.

15. Write a short note on vermiculture.

16. State any four functions of Abscisic acid.

17. Explain the adaptations of epiphytic plants.

18. Explain somatic embryogenesis.

19. What is photorespiration?

20. Differentiate between primary and secondary succession.

21. Define Munch hypothesis.

22. Explain logistic growth model. **(8 × 2 = 16 Marks)**

PART C

Short Essay (Not to exceed 120 words)

Answer any **6** questions. Each question carries **4** marks.

23. What is a sigmoid growth curve? List out the phases.

24. Write a brief note on various tissue culture media.

25. Differentiate between passive and active absorption.

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26. What are micronutrients? Explain their role in plants.

27. Write a note on various horticultural tools and implements.

28. Give a comparative account of the morphological adaptations of Hydrophytes and Xerophytes.

29. Explain Potassium-ion theory

30. Write a note on auxin, with special emphasis on its role in plant metabolism

31. Differentiate between cyclic and non-cyclic photophosphorylation.

(6 × 4 = 24 Marks)

PART D

Long essay, Answer any **2** questions.

Each question carries **15** marks.

32. Write an essay on plant tissue culture. Comment on various types of culture techniques.

33. What are macronutrients? Discuss their role in plant metabolism. Add a note on deficiency symptoms.

34. Give an account of glycolysis, with special emphasis on the site and mode of action.

35. Give a detailed account on the types of ecological pyramids. Comment of their significance.

(2 × 15 = 30 Marks)

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