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Reg. No. : .....

Name : .....

**Fifth Semester B.Sc. Degree Examination, December 2022**

**Career Related First Degree Programme under CBCSS**

**Group 2 (a) : Botany and Biotechnology**

**Core Course**

**BB 1541 : PLANT PHYSIOLOGY**

**(2018 Admission)**

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in **one** word or sentence.

1. Define quantum yield.
2. Give an example for a plant showing thigmonastic movement.
3. What is phytochrome?
4. Name a gaseous hormone.
5. Define sand culture.
6. What is IUB System?
7. Explain permanent wilting point.
8. Define imbibition.

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9. What is Matrix potential?
10. Explain lenticular transpiration.

**(10 × 1 = 10 Marks)**

SECTION – B

Answer any **eight** questions, Short answer (Not to exceed **one** paragraph).

11. What is water potential?
12. What is solution culture?
13. Explain apoplastic pathway.
14. What is the structure of Chlorophyll a?
15. What is action spectrum?
16. Explain the significance of PEP carboxylase.
17. What is active absorption?
18. What is DPD?
19. Explain cuticular transpiration.
20. Discuss any two factors affecting transpiration.
21. What is Donnan equilibrium?
22. Add a note on Symplastic pathway.
23. List the enzymes involved in Kreb's cycle.
24. What is Competitive inhibition?
25. What is Photoperiodism?
26. Brief a note on enzyme denaturation.

**(8 × 2 = 16 Marks)**

## SECTION – C

Answer any **six** questions. **Each** question carries **4** marks. (Answer not to exceed **120** words).

27. Discuss how root hairs help in absorption of water.
28. Elaborate the structure of membranes.
29. Discuss the advantages of C4 over C3.
30. What are minor elements? Discuss its specific role and deficiency symptoms.
31. What is aeroponics? Discuss its process and applications.
32. Discuss the methods and advantages of foliar nutrition.
33. Explain the mechanisms of passive absorption.
34. What are cofactors? Explain with examples.
35. Explain induced fit mechanism of enzyme action.
36. Elaborate water stress response by plants.
37. Explain water oxidation clock.
38. Write a short note on raw materials of photosynthesis.

**(6 × 4 = 24 Marks)**

## SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **three** pages)

39. With suitable diagrams, describe the events in C4 cycle and compare it with CAM.
40. Discuss the events in light reaction of Photosynthesis.

41. Elaborate oxidative Pentose Phosphate pathway and describe its significance.
42. Differentiate between aerobic and anaerobic respiration.
43. Explain the events in translocation of solutes.
44. Discuss various growth hormones and add a note on its specific role.

**(2 × 15 = 30 Marks)**

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