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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

(2019 Admission Onwards)

Time : Three Hours Max. Marks : 80

SECTION – A

Answer **all** questions in **a word** or **one or two** sentences. **Each** question carries **1** mark.

1. What is Donnan equillibrium?
2. Name the plant hormone inducing apical dominance.
3. What is thigmotropism?
4. Define water potential.
5. What is oxidative phosphorylation?
6. Define glycolysis.
7. What is symplast?
8. Define action spectrum.
9. What is RUBISCO?
10. Name a nitrifying bacteria.

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer **any eight** questions. Each questions carries **2** marks. (Answer not to exceed **one paragraph**.

11. What are nastic movements?
12. Differentiate between phloem loading and unloading.
13. What is leghemoglobin? What is its function?
14. Write a short note on circadian rhythm.
15. Discuss the significance of guttation in plants.
16. What is Emerson's enhancement effect?
17. Define R. Q. What is its importance?
18. What is vernalisation? What is its significance?
19. What is Aeroponics?
20. State Blackman's law of limiting factor.
21. What is rotation of crops? What is its importance?
22. What is senescence in plants?
23. List any four factors affecting respiration.
24. What are antitranspirants? Give two examples.
25. Mention the deficiency symptoms of Phosphorus in plants.
26. What is biological nitrogen fixation?

(8 × 2 = 16 Marks)

SECTION – C

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

27. Give a short note on plant response to water stress.

28. Discuss the carrier concept of mineral absorption in plants.

29. What is Photoperiodism? Classify plants based on their photoperiodic response.

30. Explain the K+ ion exchange theory of stomatal opening of stomata

31. Differentiate between alcoholic and lactic acid fermentation.

32. What are the factors affecting photosynthesis?

33. Explain the theory of ascent of sap.

34. Discuss the role of *Rhizobium* in nitrogen fixation in leguminous plants.

35. Briefly explain Pentose Phosphate Pathway.

36. What is plasmolysis? Add a note on its significance.

37. Draw the schematic representation of photorespiration.

38. Discuss the physiological changes during germination of seeds.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. **Each** question carries **15** marks. (Answer not to exceed **3 pages**)

39. Give an account on the physiological role of various plant growth hormones.

40. Explain the mechanism of water absorption in plants.

41. With the help of a schematic diagram explain the various reactions involved in Kreb's cycle.

42. What is Nitrogen Cycle? Explain in detail its various steps and importance.

43. Compare the carbon dioxide fixation in C3 and C4 plants. Mention their significance.

44. What is translocation? Discuss the mechanism of translocation of solute in plants.

(2 × 15 = 30 Marks)

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