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P – 2533

Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2022

First Degree Programme Under CBCSS

Botany

Core Course – VII

BO 1543 : PLANT PHYSIOLOGY AND BIOCHEMISTRY

(2013 Admission)

Time : 3 Hours

Max. Marks : 80

I. Write **all** questions in **one** or **two** sentences. All questions are compulsory.

1. What is photolysis of water?
2. Define light reaction.
3. Which are the two common secondary structures of protein?
4. What are Quantasomes?
5. Define osmosis.
6. What is photoperiodism?
7. What are Cofactors?
8. Explain root pressure.
9. Give the type of reaction that invertase catalyze.
10. Write any two non-covalent bonds that stabilize protein structure.

(10 × 1 = 10 Marks)

P.T.O.

II. Answer **any eight** of the following.

11. Explain the chemical structure of wax.
12. What are the unique features of allosteric enzymes when compared to other enzymes?
13. What is transamination? Describe the transamination reactions involved in the synthesis of nonessential amino acids.
14. What are sphingolipids? Describe their functions.
15. Explain what circadian rhythm is
16. What is photophosphorylation?
17. Describe the general structure of an amino acid.
18. What are the essential macronutrients for plants?
19. What is transpiration pull?
20. What are cytokinins? Describe the role of cytokinins
21. Explain Lundegardh hypothesis
22. What is Emerson enhancement effect? What is its significance?

(8 × 2 = 16 Marks)

III. Answer **any six** of the following.

23. What are isozymes? Give two examples.
24. Write an account on different classes of carbohydrates giving suitable examples in each class.
25. Describe the mechanism of water absorption by plants.
26. Describe and compare the structure of starch and cellulose.
27. What is allosteric modulation?
28. Compare and contrast the structure of DNA and RNA.
29. What is plasmolysis? What is its significance?

30. Describe the process of bacterial photosynthesis.

31. Explain anaerobic respiration.

(6 × 4 = 24 Marks)

IV. Write essay on **any two** of the following.

32. Describe the classification and naming of enzymes based on IUB system.

33. Compare and contrast C3 and C4 photosynthesis.

34. Describe the different stages in the oxidation of glucose so as to produce cellular energy in the form of ATP.

35. Describe in detail, the four levels in the structure of proteins.

(2 × 15 = 30 Marks)
