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D6BBT1802 (S3) (PAGES 2) **Reg. No.....**

Name: .....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2024

(Supplementary-2018 Admission)

BOTANY

ABOT6B11T: PLANT PHYSIOLOGY AND METABOLISM

Time 3 Hours **Maximum marks: 80**

PART A: Answer *all* the questions. Each carries *one* mark

1. What is phosphorylation?
2. What is nyctinasty?
3. What is redox potential?
4. Name two plant micronutrients.
5. What is a lipid?
6. Name a CAM plant.
7. Name two amino acids involved with citric acid cycle.
8. Give an example of an anapleurotic reaction.
9. Who proposed the cohesion tension theory?
10. What is protein hydrolysis?

(10 x 1 = 10 Marks)

PART B: Answer *all* questions. Each carries 2 marks

11. What is water potential? Explain its components.
12. Differentiate between action spectrum and absorption spectrum.
13. What is the chemical composition of phloem exudates?
14. List the criteria for essentiality of elements in plant nutrition.
15. What is red drop and Emerson enhancement effect?
16. What is ammonification?
17. How are enzymes classified?
18. What are the photosynthetic pigment systems in plants?
19. List out the symptoms related to magnesium deficiency in plants.
20. What is catabolism? Give an example.

(10 x 2 = 20 Marks)

(PTO)

PART C: Answer any *six* questions. Each carries *five* marks.

21. Explain β-oxidation of fatty acids.
22. Elaborate the mechanisms of phloem transport.
23. Explain electron transport reactions in mitochondria.
24. Discuss the mechanism of stomatal movement.
25. Explain citric acid cycle.
26. Discuss the process of symbiotic nitrogen fixation in leguminous plants.
27. How are saturated fatty acids synthesized in plants?
28. Explain the theories of mineral absorption in plants.

(6 x 5 = 30 Marks)

PART D: Answer any *two* questions. Each carries *ten* marks.

29. Schematically explain non-cyclic photophosphorylation in plants.
30. Explain the mechanism of water absorption in plants.
31. Write an essay on major plant hormones and their physiological roles.

(2 x 10 = 20 Marks)