

Reg. No .....

Name .....

26U607

**B.Sc. DEGREE END SEMESTER EXAMINATION- MARCH 2026**

**SEMESTER 6 : BOTANY**

**COURSE : 19U6CRBOT09 : PLANT PHYSIOLOGY AND BIOCHEMISTRY**

*(For Regular - 2023 Admission and Supplementary 2022/2021/2020/2019 Admissions )*

Time : Three Hours

Max. Marks: 60

**PART A**

**Answer All (1 mark each)**

1. What is a buffer? Give an example.
2. Define active absorption of minerals.
3. What are pneumatophores?
4. Define allelopathy.
5. How many ATP molecules are produced from NADH<sub>2</sub> and FADH<sub>2</sub> molecules.
6. Name the sugar translocated through the phloem.
7. Who proposed the lock and key model?
8. The linear sequence of amino acid residues in a protein is called .....

**(1 x 8 = 8)**

**PART B**

**Answer any 6 (2 marks each)**

9. Draw the general structure of a triglyceride.
10. What are epimers?
11. What are the adaptations in plants to heat stress?
12. What are cytokinins? State any two major physiological roles in plants.
13. Comment on photorespiration.
14. Differentiate between homopolysaccharides and heteropolysaccharides.
15. Define aerobic respiration. State its significance.
16. Write a note on allelochemicals with examples.
17. What are the radial pathways of water movement in plants?
18. Differentiate between wax and oil.

**(2 x 6 = 12)**

**PART C**

**Answer any 4 (5 marks each)**

19. What is meant by a stomatal complex? What are the anatomical peculiarities of guard cells?
20. Explain chemiosmotic hypothesis in aerobic respiration with diagram.
21. Comment on models which explain enzyme-substrate complex formation.
22. Comment on the forces of interaction that stabilize the tertiary structure of proteins.
23. Discuss CAM pathway with a suitable schematic diagram.
24. What are the physiological effects of Gibberellins.

**(5 x 4 = 20)**

**PART D**

**Answer any 2 (10 marks each)**

25. Explain enzyme regulation strategies.
26. Briefly discuss the processes involved in the breakdown of glucose to yield ATP in plants?
27. Explain CO<sub>2</sub> concentrating mechanisms in carbon assimilation process.
28. Define Transpiration. Explain the mechanism of transpiration. Add a note on different theories regarding transpiration.

**(10 x 2 = 20)**