

B.Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2025**SEMESTER 6 : BOTANY****COURSE : 19U6CRBOT09 : PLANT PHYSIOLOGY AND BIOCHEMISTRY***(For Regular 2022 Admission and Supplementary 2021/2020/2019 Admissions)*

Time : Three Hours

Max. Marks: 60

PART A**Answer All (1 mark each)**

1. What is the total ATP produced from one molecule of glucose during aerobic respiration?
2. Define active absorption of minerals.
3. Name any two allelochemicals.
4. Who put forward the pressure flow hypothesis of organic solute translocation?
5. Give an example of a motor protein.
6. Name an unsaturated fatty acid that contains 20 carbon atoms.
7. Define SAR.
8. What are pH indicators? Give an example.

(1 x 8 = 8)**PART B****Answer any 6 (2 marks each)**

9. What are disaccharides? Give an example.
10. Draw the open chain structure of any two triose sugars.
11. Write any two importance of allelochemicals.
12. Explain the classification of plants based on salt stress response.
13. Differentiate between wax and oil.
14. What is Kranz anatomy? Explain its significance.
15. Explain anaerobic respiration. What are its end products?
16. Draw the structure of a dipeptide.
17. What are cytokinins? State any two major physiological roles in plants.
18. Differentiate between endosmosis and exosmosis.

(2 x 6 = 12)**PART C****Answer any 4 (5 marks each)**

19. Briefly discuss the hypothesis and theory associated with the stomatal movement.
20. Discuss the physiology of flowering in plants.
21. Write any five functions of proteins with suitable examples.
22. What is meant by limiting factors? How do they affect the rate of photosynthesis?
23. Write a note on factors affecting respiration.
24. Explain the secondary structure of proteins.

(5 x 4 = 20)**PART D****Answer any 2 (10 marks each)**

25. Briefly discuss the processes involved in the breakdown of glucose to yield ATP in plants?

26. Write an essay on the functions of proteins.
27. "Transpiration is a necessary evil". Justify.
28. Illustrate and explain photorespiration in plants. What is its significance?

(10 x 2 = 20)