D5BBT2304 **Reg. No.............................**

Name: ....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

(Regular/Improvement/Supplementary)

BOTANY

GBOT5B09T: PLANT PHYSIOLOGY

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. How does drought effect the growth and development of xerophytes?
2. What is salt avoidance?
3. Differentiate between quantum requirement and quantum yield.
4. What is Blackman's law of limiting factor?
5. What is leghaemoglobin? Write its role during nitrogen fixation.
6. Describe the physiological effects of phytochrome.
7. What is matric potential? How does it affect water potential?
8. What is an absorption spectrum of photosynthesis?
9. Differentiate between endosmosis and exosmosis.
10. List out the function and deficiency symptoms of Nitrogen.
11. What is chlorosis? How is chlorosis different from necrosis?
12. What is SAR in plants? Describe the various components involved in SAR.

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)

13. Describe the mechanism of oxygen evolution in photosynthesis.
14. What is Transpiration? Describe different types of transpiration? What is the significance of transpiration?
15. Describe the soil-plant-atmosphere continuum of water.
16. Explain the tolerance mechanism of plants under heavy metal stress.
17. Enumerate the differences between nitrification and denitrification.
18. Describe various methods used for breaking seed dormancy.
19. Discuss the circadian rhythms in plants with suitable examples.

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. Explain the mechanism of water absorption in plants.
21. Explain CAM pathway. What are the advantages and disadvantages of CAM metabolism?

(1 x 10 = 10 Marks)