

M. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023**SEMESTER 3 : BOTANY****COURSE : 21P3BOTT11 : PLANT PHYSIOLOGY AND METABOLISM***(For Regular - 2022 Admission and Supplementary - 2021 Admission)*

Duration : Three Hours

Max. Weights: 30

PART A**Answer any 8 questions****Weight: 1**

1. What is respiration? (E)
2. What is the significance of hydrostatic pressure in plants. ()
3. State any four differences between C3 cycle and C4 cycle. (U)
4. What are essential mineral elements? Give a brief account of it. (U)
5. Define and explain turgor pressure. ()
6. What are the significances of RUBISCO? (U)
7. What is the importance of ammonium assimilation in plants? ()
8. Which hormone is called as stress hormone? State its functions. (R)
9. Give an account on light compensation point and Pasteur's effect. (A)
10. What are ionophores? ()

(1 x 8 = 8)**PART B****Answer any 6 questions****Weights: 2**

11. Explain the CO₂ concentration mechanism in CAM plants. (U)
12. Write an account on the biosynthesis of brassinosteroid. (R)
13. Describe nodule formation in legumes. ()
14. Give an account on the physiological significance of cyanide resistant pathway. (E)
15. Explain the funnelling of excitation from the antenna system towards the reaction centre. (U)
16. What are various response mechanisms of plants to salinity in soil? ()
17. Explain Na⁺/K⁺ pump and its significance. ()
18. Write short note on phloem transport (U)

(2 x 6 = 12)**PART C****Answer any 2 questions****Weights: 5**

19. Describe the mechanism of aerobic respiration in plants. How are the reduced acceptors regenerated and how many molecules of ATP are formed from a glucose molecule when completely oxidised. (U)
20. Explain and illustrate the process of biological nitrogen fixation and structure of nitrogenase enzyme complex. ()
21. Give an account on the physiological actions of phytohormones. (U)
22. Give an account on various physical phenomena involved in plant water relations. ()

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
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Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;