



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

FIFTH SEMESTER – NOVEMBER 2022

17/18UPB5MC01 – PLANT PHYSIOLOGY

Date: 23-11-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART - A

Answer the following, each within 50 words.

(10 × 2 = 20 Marks)

1. Define Diffusion.
2. Distinguish between anabolism and catabolism.
3. What is Ascent of sap?
4. Define hydroponics?
5. Mention the CO₂ acceptor in C₃ and C₄ plants.
6. Comment on Kranz Anatomy.
7. Mention the energy budget of glycolysis and Krebs's cycle.
8. What is transamination?
9. Define Phytohormones.
10. What is vernalization?

PART - B

Answer the following, each within 500 words. Draw diagrams and flowcharts wherever necessary.

(5 × 7 = 35 marks)

- 11a. Write notes on Transpiration pull and Cohesion-Tension theory.
or
b. Explain the mechanism of stomatal transpiration.
- 12a. Explain the theories on absorption of solutes from the soil.
or
b. Explain the types of hydroponics. Add a note on its merits and demerits.
- 13a. Tabulate the differences between C₃ and C₄ pathways.
or
b. Briefly explain the photosynthesis in CAM plants.
- 14a. Describe the Nitrogen cycle in plants.
or
b. Explain the steps involved in Krebs cycle.
- 15a. Explain the factors responsible for seed dormancy.
or
b. Write notes on photoperiodism.

PART - C

Answer **ANY THREE** of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary. **(3 x15 = 45 marks)**

16. Write notes on absorption of water by roots.
17. Mention the importance of any five macronutrients in plants. Add a note on its deficiency symptoms.
18. Describe in detail about the process of cyclic and non-cyclic phosphorylation.
19. Explain the physiology of nitrogen fixation in plants.
20. Enlist the physiological effects of auxin, cytokinin and gibberellins.

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