



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – APRIL 2023

18UPB5MC01 – PLANT PHYSIOLOGY

Date: 29-04-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

PART A

(10 × 2 = 20 Marks)

Answer the following, each within 50 words.

01. Define osmosis.
02. Distinguish between transpiration and guttation.
03. What is ascent of sap??
04. What is hydroponics?
05. Distinguish between photo and oxidative phosphorylation.
06. What is Kranz Anatomy?
07. Mention the Importance of Leghaemoglobin and Nitrogenase.
08. What is RQ? Mention the RQ value for carbohydrate.
09. Mention the factors responsible for seed dormancy.
10. Define Vernalization

PART B

(5 × 7 = 35 Marks)

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

- 11 a) Explain the mechanism of water movement from soil to plants.

OR

- b) Elaborate on the theories of ascent of sap.

- 12 a) Give a brief note on hydroponics. Add a note on its merits and demerits.

OR

- b) Briefly explain the lecithin and cytochrome pump carrier concept theory.

- 13 a) Distinguish between C₃ and C₄ cycle.

OR

- b). Describe photosynthesis in CAM plants

- 14 a) Give a brief account on Nitrogen assimilation.

OR

- b) Explain the energy budget of Glycolysis.

- 15 a) Write notes on photoperiodism.

OR

- b) Explain the various methods to break seed dormancy.

PART C

(3 × 15 = 45 Marks)

Answer **any three** of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary.

16. Explain the mechanism involved in Transpiration. Add a note on the theories on opening and closing of stomata.
17. Mention the importance of any five macro nutrients in plants. Add a note on their Deficiency symptoms in plants.
18. Explain the steps involved in cyclic and non-cyclic phosphorylation.
19. Elaborate on the physiology of nitrogen fixation.
20. Explain the physiological effects of Auxin, Cytokinin and Gibberellin.

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