LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **APRIL 2024**

UPB 5501 – PLANT PHYSIOLOGY

Date: 02-04-2024 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

Section A

Answer the following, each within 50 words (10 x 2 =20 marks)

1. Define osmosis.
2. Distinghish between transpiration and guttation.
3. What is soilless culture technique?
4. Comment on Donnan Equilibirium.
5. Mention the CO_2 acceptor in C_3 and C_4 plants.
6. What is Kranz anatomy?
7. Define oxidative phosphorylation.
8. Mention the importance of Nitrogenase.
9. Define photoperiodism.
10. Mention any one natural and synthetic auxin and cytokinin.

Section B

Answer ANY 4, each within 500 words. Draw diagrams and flowcharts wherever necessary. (4 x 10 = 40 marks)

11. Write in detail about active and passive absorption of water by plants.
12. Critically comment on vital and transpiration cohesion adhesion theory.
13. Explain the types of hydroponics. Add a note on its merits and demerits.
14. Comment on Munch mass flow hyphothesis.
15. Write in detail about light reaction.
16. Give a brief account on steps involved in glycolysis. Add a note on its energy budget.
17. Explain the factors responsible for seed dormancy. Add a note on methods to break dormancy.
18. Write short notes on mechanism involved in photoperiodism.

Section C

Answer ANY 2 of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary. (2 x20 = 40 marks)

19. Explain the theories involved in opening and closing of stomata.
20. Enlist the importance of any five macronutrients in plants. Add a note on symptoms caused due to its deficiency.
21. Compare the dark reaction in C_3 and C_4 plants.
22. Explain the physiological effect of auxin, cytokinin and gibberalin.

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