



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – NOVEMBER 2022

UPB 5501 – 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 Plasmolysis.
2. State the laws of thermodynamics.
3. What are aeroponics?
4. Differentiate between apoplast and symplast.
5. Comment on Emmerson's enhancement effect.
6. What are quantosomes?
7. Explain reductive amination.
8. What are oxysomes?
9. State the physiological effect of abscissic acid.
10. What is vernalization?

PART-B

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

(5 × 7 = 35 marks)

11. a. State the physical properties of water. Add a note on its biological importance.

(or)

- b. Explain the relation between OP, TP and DPD.

12. a. Write briefly about hydroponics.

(or)

- b. List out the specific role and deficiency symptoms of any three mineral elements.

13. a. Draw and explain the reactions in Calvin cycle.

(or)

- b. Give an account on CAM pathway.

14. a. Write an account on Krebs's cycle.

(or)

- b. Explain the transamination reactions.

15. a. Discuss the forms of phytochrome and their role in flowering.

(or)

- b. Describe the effect of salinity on the growth of plants.

PART- C

Answer any three of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary (3 × 15 =45 marks)

16. Write an essay on the stomata and their role in transpiration.
17. Explain the mechanism of absorption and translocation of minerals in plants.
18. What is photophosphorylation? Write in detail about the light reactions in photosynthesis.
19. Give an account on glycolysis. Add a note on the energy budget.
20. What are growth hormones? Write a note on auxin and their physiological roles in plants.

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