

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

FIFTH SEMESTER – NOVEMBER 2017

PB 5521 / PB 5515 – PLANT PHYSIOLOGY

Date: 01-11-2017

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PART-A

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS.

(10 x 2 = 20 Marks)

1. Define plasmolysis
2. What are antitranspirants?
3. Define mineral nutrition
4. Define hydroponics
5. What is phosphorescence?
6. What is photophosphorylation?
7. Mention cellular respiration
8. Define nitrification
9. Define auxins
10. Define vernalization

PART- B

ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS. DRAW DIAGRAMS AND FLOWCHARTS WHENEVER NECESSARY

(5 x 7 = 35 Marks)

- 11(a) Explain the mechanism of opening and closing of stomata.
(OR)
(b) Explain how is transpiration different from guttation.
- 12(a) Briefly explain macronutrients and their functions in plants.
(OR)
(b) Explain the active method of translocation of solutes.
- 13(a) Write a brief account of the importance of chloroplast pigments in light reaction.
(OR)
(b) Describe the CAM pathway.
- 14(a) Explain the steps involved in Glycolysis. Add a note on significance of R.Q.
(OR)
(b) Enumerate the process of symbiotic nitrogen fixation.
- 15(a) Explain seed dormancy and list out the various methods of breaking seed dormancy.
(OR)
(b) Explain the phenomenon of photoperiodism.

PART-C

ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS, DRAW DIAGRAMS AND FLOWCHARTS WHENEVER NECESSARY. (3 X 15 = 45 MARKS)

16. Discuss the theories related to translocation of water.
17. Explain the Donnan equilibrium and Mass flow hypothesis.
18. Describe the path of CO₂ fixation in C₃ plants.
19. Explain the process of Krebs cycle. Add a note on energy budget.
20. Explain the physiological effect of any three growth regulators in growth and development of plants.
