LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **PLANT BIOLOGY & PLANT BIO-TECH.**

FIFTH SEMESTER – NOVEMBER 2012

# PB 5515/5509/5500 - PLANT PHYSIOLOGY

Date : 01/11/2012 Dept. No. Max. : 100 Marks

Time : 9:00 - 12:00

**PART – A**

Answer the following, each with in 50 words each: (10 x 2 = 20 marks)

1. What are Antitranspirants? Give an example.
2. What is Chemical potential?
3. What are Trace elements? Give examples.
4. Mention the deficiency symptoms of iron.
5. List the Photosynthetic pigments.
6. What is Photolysis of water?
7. What is substrate level phosphorylation?
8. Define reductive amination.
9. What is bioassay?
10. Mention the most important function of ethylene.

**PART – B**

**Answer the following, each within 500 words each:**

**draw diagrams, flowcharts wherever necessary. (5 x 7 = 35 marks)**

1. a) Explain the apoplast and symplast concept.

(OR)

b) What is guttation? Bring out the differences between guttation and transpiration.

12. a) Discuss the importance of Nitrogen, Phosphorus and their deficiency symptoms.

(OR)

b) Draw and explain Donnan membrane equilibrium concept.

13. a) Schematically represent the light reaction and mention its importance.

(OR)

b) What are CAM plants? Explain the CAM pathway.

14. a) Explain the ATP synthesis through oxidative phosphorylation.

(OR)

b) Explain biological nitrogen fixation.

15. a) Explain any five physiological roles of auxins.

(OR)

b) What is seed dormancy? Explain the methods of breaking seed dormancy.

**PART – C**

**Answer any THREE of the following, each within 1200 words.**

**Draw diagrams and flowcharts wherever necessary. (3 x 15 = 45 marks)**

16. Explain the mechanism of stomatal movement and the various factors affecting it.

17. Explain the various concepts that will describe the absorption of mineral ions.

18. Explain the pathway of carbon fixation in C4 plants. Bring out the differences between C3

and C4 plants.

19. Draw and explain the Kreb cycle.

20. Write an essay on the physiology of flowering.

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