LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2019**

16/17UPB5MC01 / PB 5521 / PB 5515 / PB 5509 / PB 5500– PLANT PHYSIOLOGY

Date: 29-10-2019 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART – A

Answer the following, each in about 50 words. (10 × 2 = 20 marks)

1. Define osmosis.
2. State the laws of thermodynamics.
3. What is hydroponics?
4. Comment on Donnan's equilibrium.
5. Write a note on Red drop and Emmersons enhancement effect.
6. Differentiate fluorescence from phosphorescence.
7. Mention the factors responsible for seed dormancy
8. Explain transamination.
9. State the physiological effect of abscissic acid.
10. What is vernalization?

PART – B

Answer the following, each answer not exceeding 500 words. Draw diagrams wherever necessary.

(5 × 7 = 35 marks)

11. a. Explain the relation between OP, TP and DPD.

(or)

b. Write an account on ascent of sap in plants.

12. a. Differentiate active absorption of water from that of passive absorption mechanism.

(or)

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

13. a. Explain briefly about the light reaction in photosynthesis.

(or)

b. Give an account on photorespiration.

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

(or)

b. Describe the symbiotic nitrogen fixation in legumes.

15. a. What are growth hormones? Describe the physiological effect of auxin.

(or)

b. Explain the methods to break the seed dormancy.

PART – C

Answer any three of the following, each answer not exceeding 1200 words. Draw diagrams wherever necessary. (3 × 15 = 45 marks)

16. Write an essay on the physiological mechanisms of stomatal opening and their role in transpiration.
17. Explain the mechanism of absorption and translocation of minerals in plants.
18. Draw and explain the reactions in Calvin cycle. Mention the differences between C_3 and C_4 pathway.
19. Give an account on glycolysis. Add a note on the energy budget.
20. What are phytochrome? How does it mediate photomorphogenetic responses? Describe its role in flowering.

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