



MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No.:.....

Name:.....

Sixth Semester B.Sc. Degree Examination, April 2018

First Degree Programme under CBCSS

Core Course: Botany – VII

AUBO641: Plant Physiology and Biochemistry

(Common for **Regular** – 2015 and **Reappearance** – 2014 Admn.)

Time: 3 Hours

Max. Marks: 80

SECTION – A

Write short notes on ALL the following.

1. Define Donnan equilibrium.
2. What are Nif genes?
3. Name a growth retardant.
4. What is Zwitter ion?
5. Define mutarotation.
6. What is circadian rhythm?
7. Name a non protein amino acid.
8. Define rancidity.
9. Name a toxic plant protein.
10. What are elicitors?

(10 × 1 = 10 Marks)

SECTION – B

Answer any EIGHT questions, not exceeding one paragraph.

11. What is Emerson effect?
12. What is hydroponics?
13. What is crop rotation? What is its importance?
14. Explain the mechanism of biological nitrogen fixation.
15. Explain senescence.
16. Write a short note on nastic movements.

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17. Differentiate fluorescence and phosphorescence.
18. Write a short note on cholesterol.
19. What is the importance of proteins for living organisms?
20. What are the main biological functions of polysaccharides?
21. Explain vernalisation.
22. State the practical application of auxins.

(8 × 2 = 16 Marks)

SECTION – C

*Short essay type: Answer any **SIX** questions.*

23. Explain the mechanism of enzyme action.
24. Give a brief account of photorespiration.
25. List out the different types of waxes. Explain their importance.
26. Explain the properties of proteins.
27. Explain the structure and function of a chloroplast with the help of a diagram.
28. Differentiate cyclic and non cyclic photophosphorylation.
29. Explain the mechanism of phloem transport.
30. Transpiration is a necessary evil. Substantiate.
31. Explain active and passive absorption.

(6 × 4 = 24 Marks)

SECTION – D

*Long essay type: Answer any **Two** questions.*

32. Define and classify carbohydrates with suitable examples. Add a note on the function of carbohydrates.
33. Give an account of mineral nutrition in plants with emphasis on the deficiency symptoms.
34. Describe the organization of protein structure. Give an account of the determination of the primary structure of protein.
35. Write an essay on aerobic respiration.

(2 × 15 = 30 Marks)