MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No. :..... Name :.....

Sixth Semester Career Related B.Sc. Degree Examination, April 2018

First Degree Programme under CBCSS

Core Course – IX: (for Botany and Biotechnology)

AUBB641: Plant Physiology

(*for* ***Regular*** *– 2015 Admn. only*)

Time: 3 Hours Max. Marks: 80

SECTION – A

*Answer **ALL** the following in a word or one or two sentences.*

1. Turnover number
2. Red drop
3. RQ
4. Nif genes
5. Phytochrome
6. Antitranspirants
7. DPD
8. Name a saturated and an unsaturated fatty acid.
9. Circadian rhythm
10. General equation for photosynthesis

(10 × 1 = 10 Marks)

SECTION – B

*Answer any **EIGHT** questions, not exceeding a paragraph.*

11. Differentiate osmotic pressure and turgor pressure.
12. Comment on soilless culture of plants.
13. Briefly mention the components of holoenzyme.
14. Write short notes on RUBISCO.
15. Give a brief explanatory note on phloem loading and unloading.
16. What is 2, 4- D? Comment on its applications.

17. Discuss how the law of limiting factors applies in photosynthesis.
18. Mention how critical photoperiod controls flowering in short day plants.
19. Enumerate any four factors affecting enzyme activity.
20. Point out the factors causing seed dormancy.
21. How anaerobic respiration differs from aerobic in terms of ATP yield?
22. What is meant by crop rotation? Mention its significance.

(8 × 2 = 16 Marks)

SECTION – C

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

23. Explain symbiotic nitrogen fixation.
24. Write notes on β oxidation of fatty acids.
25. Give an account of inhibition of enzyme action.
26. Explain the types of tropic growth movements in plants.
27. Discuss the mechanism of carbon dioxide fixation in CAM plants.
28. Describe the vital and physical theories explaining ascent of sap.
29. Point out the physiological consequences of water stress and mention any four adaptations of plants against water stress.
30. Comment on vernalization and its practical applications.
31. Mention the mechanism of mineral absorption in plants.

(6 × 4 = 24 Marks)

SECTION – D

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

32. Give an account on mechanisms of water absorption in plants.
33. Explain the types of plant growth hormones, their physiological role and commercial applications.
34. Give a comparative account of photosynthetic mechanism of C3 and C4 plants.
35. What is terminal oxidation? Illustrate schematically the electron transport chain.

(2 × 15 = 30 Marks)