

SEMESTER – IV
PLANT PHYSIOLOGY, PLANT ECOLOGY, HORTICULTURE AND PLANT
BIOTECHNOLOGY
Course Code: BO1431

I. Write a short note on the following. All questions compulsory. (10 x 01 = 10)

1. Cytokinins
2. Growth Curve
3. Incipient Plasmolysis
4. Nursery Spade
5. Reaction center
6. RQ
7. Water Potential
8. Secondary Succession
9. Callus
10. Vermi culture
11. Totipotency
12. Olericulture
13. Food Chain
14. Anti transpirants
15. Diffusion
16. Warburg effect
17. Scion
18. Hills reaction
19. Quantasomes
20. Imbibition
21. Name the initial acceptor of CO₂ in CAM pathway.
22. Root pressure theory related to ascent of sap was proposed by
23. The exudation of liquid water through the margin of leaves in herbaceous plants is called
24. Name the respiratory substrate with RQ value less than 1.
25. Photoperiodism

II. Answer any eight (8 x 2 = 16 marks)

1. What are the applications of anther culture?
2. Write an account on organic manures.
3. Explain CAM cycle with examples.
4. What are the advantages of somatic embryogenesis?
5. What is phloem loading and phloem unloading?
6. What is the role of auxin in plant tissue culture?
7. Write an account on xerose.
8. Explain transpiration pull theory of ascent of sap

9. What are the differences between cyclic and non cyclic photophosphorylation?
10. Mention the applications of synthetic plant hormones.
11. Compare PS I and PS II
12. Explain law of limiting factor.
13. Write an account on organic manures.
14. What is photoperiodism?
15. Briefly describe culture media.
16. Differentiate action spectrum from absorption spectrum.
17. Give an account on pyramid of energy.
18. What are anti-transpirants? Give example.
19. Mention the structural adaptations of C4 plants.
20. Briefly describe physical force theory of ascent of sap.
21. Explain the advantages of haploid production.

III. Answer any six (6 x 4 = 24 marks)

1. Explain Starch – Sugar inter conversion theory.
2. Write an account on factors affecting photosynthesis.
3. Describe Kerbs cycle.
4. Compare C3 and C4.
5. Explain anther culture. Mention its advantages.
6. Mention the characteristic feature of desert ecosystem.
7. Role of ABA in plant body.
8. Outline Non – cyclic photophosphorylation and explain.
9. Briefly describe plant introduction.
10. What is the role of auxin in plant tissue culture?
11. Write an account on xerosere.
12. Explain transpiration pull theory of ascent of sap
13. What are the differences between cyclic and non cyclic photophosphorylation?
14. Briefly explain Munch hypothesis.

IV. Write essay on any two of the following. (2 x 15 = 30 marks)

1. Explain the process of breakdown of glucose.
2. Explain the morphological, anatomical and physiological applications of Xerophytes.
3. Write an essay on various methods of vegetative propagation.
4. Describe the mechanisms involved in mineral absorption.
5. Describe the composition of a culture medium.
6. Explain citric acid cycle with its importance.
7. Explain the steps in the light independent reaction of photosynthesis.
8. Describe morphological and physiological adaptations of hydrophytes?