TDC (CBCS) Odd Semester Exam., 2023

BOTANY

(Honours)

(5th Semester)

Course No. : BOTHCC-502T

(Plant Physiology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer *ten* questions, selecting any *two* from each Unit : 2×10=20

UNIT—I

1. What is water potential? What is the unit of water potential?

2. What is antitranspirant? Give one example of antitranspirants.

3. What is guttation? In which type of plant can this kind of phenomenon be seen?

UNIT—II

4. What do you mean by facilitated diffusion? Give one example.

5. Write the importance of Mg in plants.

6. Differentiate between active and passive transport.

UNIT—III

7. Define 'source' and 'sink' in plant.

8. Why is translocation in phloem important?

9. What are the components of phloem sap?

UNIT—IV

10. Give examples of two synthetic hormones.

11. Who discovered gibberellin? Write one function of gibberellin.

12. Write two functions of ethylene in plants.

UNIT—V

13. What is florigen? Write its function.

14. What is vernalization? Write its importance.

15. Write two methods of breakdown of seed dormancy.

SECTION—B

Answer *five* questions, selecting *one* from each Unit : 10×5=50

UNIT—I

16. With the help of suitable diagram, describe the mechanism of transport of water in plants. What is symplast? 5+1=6

17. Write short notes on the following : 3+3=6

(a) Root Pressure Theory

(b) Aquaporins

UNIT—II

18. What do you mean by electrochemical gradient? Write, in detail, about the mechanism of transfer of ions across the cell membrane. 1+5=6

19. Write the role and deficiency symptoms of Zn, S and Mn in plants. What is necrosis? 6

UNIT—III

20. With the help of suitable model, describe the mechanism of transport of photosynthate from source to sink. 6

21. Describe the mechanism of phloem loading and unloading with suitable diagram. 6

UNIT—IV

22. Write about the cellular and physiological role of gibberellin in plants. 6

23. Write the role of the following hormones in plants : 3+3=6

(a) Abscisic acid

(b) Cytokinin

UNIT—V

24. Write notes on the following : 3+3=6

(a) Photoperiodism

(b) Cryptochromes

25. What is phytochromes? What are the different forms of phytochromes? With the help of suitable diagram, discuss the mode of action of phytochromes. 1+1+4=6

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