2022/TDC(CBCS)/EVEN/SEM/
BOTDSC/GEC–401T/276

TDC (CBCS) Even Semester Exam., 2022

BOTANY

(4th Semester)

Course No. : BOTDSC/GEC–401T

(Plant Physiology and Metabolism)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *fifteen* questions of the following : 1×15=15

1. What is the amount of water lost by plant due to transpiration?

2. What is the value of water potential of pure water?

3. What is the unit of water potential?

4. Name one antitranspirant.

5. What is macro element?

6. What is companion cell?

7. What do you mean by necrosis?

8. What is ion channel?

9. What is photolysis?

10. What do you mean by red drop?

11. Which organelles are involved in photo-respiration?

12. Why is Krebs' cycle also called TCA cycle?

13. What is symbiotic nitrogen fixation?

14. Name one synthetic hormone.

15. Name the enzyme required to convert nitrite to nitrate.

16. Name the enzyme that helps in seed germination.

17. Name the process that makes plants able to withstand cold temperatures.

18. Name one example of day-neutral plant.

19. What is phytochrome?

20. What is vernalin?

SECTION—B

Answer any *five* questions of the following : 2×5=10

21. Write the importance of root pressure.

22. Write the importance of water in plants.

23. What are trace elements? Give examples.

24. What is passive transport? Give example.

25. Write the full form of CAM. Give one example of CAM plant.

26. What is oxidative phosphorylation?

27. Write the functions of nitrogenase enzyme.

28. Write two functions of ethylene.

29. Write the importance of light in photoperiodism.

30. At which wavelength of light two forms of phytochrome are interconvertible?

SECTION—C

Answer any *five* questions of the following : 5×5=25

31. Define water potential. Write about different components of water potential. 1+4=5

32. Write about the factors that influence the rate of transpiration in plants.

33. Write a short note on phloem loading and unloading.

34. Describe pressure flow model with the help of suitable diagram.

35. Write notes on the following : 2½×2=5

(a) Photosystems I and II

(b) C_4 cycle

36. Describe the mechanism of pentose phosphate pathway.

(Continued)

37. Write the reactions of assimilation of ammonia in plants.

38. Write physiological roles of the following : 2½×2=5

(a) Auxin

(b) ABA

39. Describe the roles of red and far red light in photomorphogenesis in plants.

40. Write notes on following : 2½×2=5

(a) Short day plant (SDP)

(b) Vernalisation

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