2021/TDC/CBCS/ODD/
BOTSEC–301T/142

TDC (CBCS) Odd Semester Exam., 2021
held in March, 2022

BOTANY

(3rd Semester)

Course No. : BOTSEC–301T

(Biofertilizers)

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* from the following : 1×15=15

1. Mention the different types of fertilizers.

2. Define biofertilizer.

3. What do you mean by diazotrophs?

4. Name one symbiotic nitrogen fixing biofertilizer.

5. Who discovered *Azospirillum*?

6. Name the family to which *Azospirillum* belongs.

7. Name the bacteria found in Azotobacterin.

8. Name the first discovered species of *Azotobacter*.

9. Name one species of *Azolla* commonly found in India.

10. Name the pigments present in blue-green algae.

11. Name two cyanobacteria used in rice cultivation.

12. Name the scientist who worked on the mass multiplication of *Azolla* in CRRI.

13. What do you mean by Hartig net?

14. Define endomycorrhiza.

15. What is arbuscular mycorrhiza?

16. Write the full form of VAM.

17. Who is considered as the father of organic farming?

18. Mention the types of vermicomposting systems.

19. Define earthworm castings.

20. Give an example of green manure.

SECTION—B

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

21. Write a note on carrier-based inoculants for *Rhizobium*.

22. Write a note on nitrogen fixing *Rhizobia*.

23. Describe the method of isolation of *Azospirillum*.

24. Write the characteristic features of *Azotobacter*.

25. Explain *Azolla* and *Anabaena azollae* association.

26. Write the economic importance of *Azolla*.

27. Describe the ectomycorrhizal association.

28. Explain the benefits of VAM.

29. Write briefly about the various types of green manures.

30. Write the advantage of vermicomposting.

SECTION—C

Answer any *five* from the following : 5×5=25

31. Describe the process of isolation and identification of *Rhizobium*.

32. Describe the method of isolation of *Frankia* in actinorhizal symbiosis.

33. How do crop plants respond to *Azotobacter* biofertilizer?

34. Describe mass multiplication of *Azospirillum*.

35. Discuss the role of *Azolla* in rice cultivation.

36. Write a detailed note on the economic importance of cyanobacteria.

37. Describe the isolation and inoculum production of VAM.

38. Discuss the various mycorrhizal associations found in plants.

39. Discuss the various methods of vermicomposting.

40. Discuss the advantages and disadvantages of using green manures.

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2021/TDC/CBCS/ODD/
BOTDSC/GE–301T/141

TDC (CBCS) Odd Semester Exam., 2021
held in March,. 2022

BOTANY

(3rd Semester)

Course No. : BOTDSC/GE–301T

(Plant Anatomy and Embryology)

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* of the following questions : 1×15=15

1. What is bast fibre?

2. Name the elements of xylem.

3. Define meristems.

4. What is aerenchyma?

5. Define cork cambium.

6. What is open vascular bundle?

7. Name the tissue from which roots originate.

8. Name a simple permanent tissue.

9. Name a xerophyte.

10. Define hydrophytes.

11. Define subsidiary cells.

12. What is cuticle?

13. What is entomophily?

14. Define chiropterophily.

15. What is autogamy?

16. What is another term for pollen grain?

17. What is the function of suspensor?

18. What is the ploidy of endosperm?

19. Define non-albuminous seed.

20. Give an example of albuminous seed.

SECTION—B

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

21. Write the features of sclerenchyma.

22. Differentiate between the anatomy of dicot stem and monocot stem.

23. Differentiate between primary xylem and secondary xylem.

24. Write the features of sapwood.

25. Write the features of epidermis.

26. Write about sunken stomata.

27. Give a brief account of double fertilization.

28. Write the components of embryo sac.

29. Write a note on embryo-endosperm relationship.

30. Write a brief account of polyembryony.

SECTION—C

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

31. Give an account of various theories regarding shoot apical meristem.

32. Differentiate between anatomical features of dicot stem and monocot stem.

33. What do you mean by dendrochronology? Differentiate between autumn wood and springwood. 2+3=5

34. Describe secondary growth in stem due to vascular cambium and cork cambium.

35. Give a detailed account of hydrophytic adaptations.

36. Describe various types of stomata with diagrams.

37. Differentiate between self-pollination and cross-pollination. Add a note on contrivances for self-pollination.

38. Describe ultra structure of a mature embryo sac with the necessary diagram.

39. Give a detailed account of embryonic development in dicotyledonous plants.

40. Define apomixis. Describe various types of apomixis. Point out its practical applications. 1+2½+1½=5

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