

**2021/TDC/CBCS/ODD/
BOTDSE-501T/145**

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

BOTANY

(5th Semester)

Course No. : BOTDSE-501T

(Analytical Techniques in Plant Sciences)

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 magnification?
2. What is fluorescence microscopy?
3. What is whole chromosome painting?
4. Name the chemicals required for cryofixation.

(2)

5. Write one importance of differential centrifugation.
6. Give example of one marker enzyme.
7. Write one advantage of auto-radiography.
8. What did freeze fracture reveal?
9. What are the types of ultracentrifugation?
10. What is the basis of separation in centrifugation?
11. What is stationary phase?
12. What type of paper is used in paper chromatography?
13. What is normal phase chromatography?
14. Why is R_f calculated in chromatography?
15. Name one technique used for identification of protein.
16. Name the elements of nucleic acid.
17. What is the full form of SDS in SDS-PAGE?

(3)

18. At what temperature can SDS-PAGE gel be kept for next use?
19. What is AGE?
20. Define sample.

SECTION—B

Answer any *five* of the following questions : $2 \times 5 = 10$

21. What is SEM? Write one application of SEM.
22. Write about chromosome painting.
23. Write the uses of marker enzyme.
24. Write application of auto-radiography.
25. Write principles of TLC.
26. Write applications of GLC.
27. What is the basic principles of mass spectrometry?
28. Why are X-rays used for diffraction?
29. Write a note on standard deviation.
30. How is sampling done in statistical analysis?

SECTION—C

Answer any *five* of the following questions : $5 \times 5 = 25$

31. Write about applications of—

(a) FACS;

(b) confocal microscopy. $2\frac{1}{2} + 2\frac{1}{2} = 5$

32. What is the importance of negative staining?
How is it done?

33. Write a note on analytical centrifugation.

34. Explain the process of pulse chase experiment.

35. Write a note on column chromatography.

36. Describe the methods of ion-exchange chromatography.

37. Describe the advantages and disadvantages of AGE.

38. Write the principles and applications of SDS-PAGE.

39. How are data collected in statistical analysis?

40. Write notes on the following : $2\frac{1}{2} + 2\frac{1}{2} = 5$

(a) Variation

(b) Population

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**2021/TDC/CBCS/ODD/
BOTSEC-501T(A/B)/146**

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

BOTANY

(5th Semester)

Course No. : BOTSEC-501T

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Candidates have to answer *either* Option—I
or Option—II

OPTION—I

Course No. : BOTSEC-501T (A)

(Ethnobotany)

SECTION—A

Answer any *fifteen* of the following questions :

1×15=15

1. Define ethnobotany.
2. Name two major tribes of Assam.

(2)

3. Name the major festival of Dimasa tribe.
4. What do you mean by ethnic group?
5. What is herbarium?
6. Name one sacred grove of Meghalaya.
7. What is ancient literature?
8. What is the study of archaeology?
9. Name the family of *Ocimum sanctum*.
10. Write the scientific name of Neem plant.
11. What is verticillaster?
12. What type of fruit is found in Leguminosae family?
13. What is the main alkaloid of *Rauvolfia serpentina*?
14. What is plant genetic resource?
15. What do you mean by conservation of plant species?
16. Name the family of *Rauvolfia*.

(3)

17. What do you mean by traditional knowledge?
18. What is vernacular name?
19. What is intellectual property right?
20. Who coined the term 'ethnobotany'?

SECTION—B

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

21. Name the scientific name and family of one wild edible plant used as vegetable.
22. What is the scope of ethnobotany?
23. What are the methodologies of ethnobotanical studies?
24. Write a short note on herbarium methodology.
25. What do you mean by ethnomedico plants?
26. What are the medicinal uses of *Azadirachta indica*?
27. Write a note on forest management.
28. Name two endangered taxa.
29. Distinguish between indigenous knowledge and modern system of medicine.
30. What are different legal aspects on ethnobotany?

(4)

SECTION—C

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

31. Write a note on five major ethnic groups of North-East India and their lifestyles.
32. Write a note on different branches of plant science related with ethnobotany.
33. Write a note on field study and herbarium for ethnobotanical studies.
34. How are temples and sacred groves important in ethnobotanical studies?
35. Write a note on morphology and ethnobotany of Tulsi plant.
36. Name five important ethnomedicinal plants with their families.
37. Discuss the role of ethnic groups in conservation of plant genetic resources.
38. How are modern medicines associated with traditional system of medicine?
39. Write a note on biopiracy.
40. How does ethnic groups protect the wealth of traditional knowledge system?

(5)

OPTION—II

Course No. : BOTSEC-501T (B)

(Medicinal Botany)

SECTION—A

Answer any *fifteen* of the following questions :

1×15=15

1. What do you mean by Siddha medicine?
2. What is herbal medicine?
3. What is Ayurveda?
4. Name one medicinal herb.
5. What is *in situ* conservation?
6. Define biosphere reserve.
7. Name one famous national park of Assam.
8. Name one important botanical garden of India.
9. What is grafting?
10. What is greenhouse?

(6)

11. Which type of crop is grown in nursery?
12. Why monocot plants cannot be grafted?
13. What is ethnobotany?
14. What is ethnoecology?
15. Define folk medicine.
16. Name two main ethnic communities of Assam.
17. What is natural product?
18. Name one herb which has natural insulin.
19. What is alkaloid?
20. What is phenolic compound?

SECTION—B

Answer any *five* of the following questions : $2 \times 5 = 10$

21. Write the importance of medicinal botany.
22. Name two plants with scientific name used in Ayurvedic treatment.

(7)

23. Write a short note on sacred groves.
24. Write a short note on red list criteria.
25. Write a note on sowing.
26. Write a note on important components of nursery.
27. Write a note on folk medicines of ethnobotany.
28. Write a short note on palaeoethnobotany.
29. What are the importances of natural products?
30. Name two natural products used in skin diseases.

SECTION—C

Answer any *five* of the following questions : $5 \times 5 = 25$

31. Write in detail about the origin and basis of Siddha system of medicine.
32. Write the history and concept of Unani medicine.

- 33.** What do you mean by endemism? Make a list of two endemic plants of N-E India by mentioning their scientific names and families. 1+4=5
- 34.** What do you mean by ethnomedicine? Write in detail about the objectives of botanical garden. 1+4=5
- 35.** Write a detailed note on objectives of nursery in agriculture and gardening.
- 36.** Describe the different methods of propagation.
- 37.** Describe the various methods of ethnobotanical studies.
- 38.** Describe the application of ethnobotany and folk medicines.
- 39.** Write a note on the application of natural products to cure jaundice diseases.
- 40.** Describe the importance of natural products in drug development.

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