



**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?

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(Continued)

(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?

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(Turn Over)



(4)

SECTION—C
Answer any *five* of the following questions :

31. Write about applications of—
(a) FACS;
(b) confocal microscopy.
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 :
(a) Variation
(b) Population
