TDC (CBCS) Odd Semester Exam., 2023

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 *fifteen* questions, selecting any *three* from each Unit : 1×15=15

UNIT—I

1. Define magnification.
2. What is cryofixation?
3. What is negative staining?
4. Define flow cytometry.

UNIT—II

5. What is cell fractionation?

6. What is autoradiography?

7. Define marker enzyme.

8. What is sedimentation?

UNIT—III

9. Define chromatography.

10. What is R_f?

11. What do you mean by spectrophotometry?

12. What is the full form of HPLC?

UNIT—IV

13. What is the full form of PAGE?

14. What is the other term of X-ray crystallography?

15. What is Northern blotting?

16. What is mass spectrometry?

UNIT—V

17. Define sample.

18. What do you mean by data?

19. What is population?

20. What is arithmetic mean?

SECTION—B

Answer *five* questions, selecting *one* from each Unit : 2×5=10

UNIT—I

21. Write the applications of fluorescence microscope.

22. Write the differences between SEM and TEM.

UNIT—II

23. Write a note on tracer technique.

24. Write a note on radioisotopes.

UNIT—III

25. Define ion-exchange chromatography.

26. What is column chromatography?

UNIT—IV

27. State briefly about Southern blot technique.

28. Write about the components of nucleic acids.

UNIT—V

29. Write a note on variance.

30. Briefly explain the measures of dispersion.

SECTION—C

Answer *five* questions, selecting *one* from each Unit : 5×5=25

UNIT—I

31. Write an illustrated account on chromosome banding.

32. Write a detailed account on scanning electron microscope.

UNIT—II

33. Write an account on different types of centrifugation techniques.

34. Write briefly on the following : 2½×2=5

(a) Pulse-chase experiment

(b) Application of marker enzymes in biological researches

UNIT—III

35. Write an explanatory note on GLC.

36. Write the applications of spectrophotometry and chromatography in biological researches. 2½+2½=5

UNIT—IV

37. Give a detailed account on electrophoresis.

38. Differentiate between DNA and RNA.

UNIT—V

39. Write a note on median and mode.

40. Give an account of chi-square test for goodness of fit.

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