Sr. No. 7059

Exam. Code: 210004
Subject Code : 4851

M.Sc. Botany - 4th Sem.

(2517)

Paper-BOTC-624: Analytical Techniques

Time Allowed: 3 hrs. Max. Marks: 50

Note: Attempt All the Sections.

Section-A: Attempt All parts. Answer to any part should not exceed 4 lines. (8x1=8 marks)

Section-B: Attempt any SEVEN questions. Answer to any part should not exceed 2 pages. (7x3=21 marks).

Section-C: Attempt any THREE questions. Answer to any part should not exceed 4 pages. (3x7=21 marks)

Support your Answer with neat and labelled diagrams wherever necessary.

Section-A

1. a) What is meant by flow cytometry?

   b) Give two major differences between the working of light and phase contrast microscopes.

   c) What is PCR? Enlist its types.

   d) Cite briefly the importance of Western blotting technique.

   e) Define Chromatography.

   f) Cite a major difference between NMR and ESR spectroscopy.

   g) What is thin layer chromatography? How does it differ from HPLC?

   h) What is electrofocussing?

Section-B

2. Write short note on the application of SEM.

3. Compare the principles of gel filtration and affinity chromatography.

4 Distinguish between atomic absorption and plasma emission spectroscopy.

5. Briefly describe fluorescence microscopy.

6. What do you understand by cytophotometry?

PTO

7. What is a Cot Curve? Why is it important?

8. What is electrophoresis? Enlist its various types briefly giving the application of each.

9. What do you understand by X-ray diffraction? Describe one important finding in biology which this technique has helped in discovering.

10. Write a short note on the principles of uV-vis spectroscopy.

11. Discuss the applications of Southern dotting.

Section-C

12. Write a detailed account on the working and use of phase contrast microscopes.

13. Enlist various hydrodynamic methods and discuss their utility in analytical techniques.

14. Describe in detail the methodology underlying the sequencing of proteins.

15. What do you mean by ultra centrifugation? Bring out a detailed comparison between velocity gradient and density gradient ultracentrifugation.

16. Give a detailed account of the principle and applications of HPLC.

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