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30

Class – M.Sc. IV Sem. (Botany)  
Subject – Analytical Techniques  
Paper – BOT 624

Time Allowed : 3 Hours

Maximum Marks : 50

**Section A**

First question has eight parts. Each part is compulsory.  
Each part carries 1 mark.

1. (a) Define SEM.
- (b) Define Staining.
- (c) What is fixation?
- (d) What are applications of electrofocussing?
- (e) What is principle of gas chromatography?
- (f) What is NMR spectroscopy?
- (g) What is buoyant density ultracentrifugation?
- (h) What is X- diffraction?

1 × 8 = 8

**Section-B**

Attempt any seven out of 10. Each carries 7 marks

2. Discuss Instrumentation & applications of ESR spectroscopy.
3. Describe flow cytometry.
4. What is South Western Blotting?
5. Discuss plasma emission spectroscopy.
6. Describe fluorescence Spectroscopy.

7. Discuss sequencing of nucleic acids.
8. Describe cytophotometry.
9. Elaborate phase contrast Microscopy. (3×7 = 21)

**Section-C**

Attempt any 3 out of 5 . Each carries 7 marks.

10. Describe Cot curves & hybridization.
11. Describe Ion exchange chromatography.
12. Discuss TLC.
13. Elaborate AAS.
14. Describe fluorescence microscopy. (7 × 3 = 21)

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