

**M.Sc. Botany - 4th Semester
(2721)**

Paper: BOTC-624 Analytical Techniques

Time Allowed: 2 hrs.

Max. Marks: 50

Note: There are EIGHT questions of equal marks. Candidates are required to attempt any FOUR questions.

Q1 Discuss in detail the principles and application of

- a) light microscopy
- b) phase contrast microscopy

Q2 Compare scanning and transmission electron microscopy

Q3 Discuss in detail the principles and application of

- a) Gel Filtration Chromatography
- b) Ion Exchange Chromatography

Q4 Compare and Contrast electrophoresis and electrofocussing

Q5 Illustrate the process of

- a) X-ray diffraction and discuss its applications
- b) NMR Spectroscopy and give its instrumentation

Q6 Outline various spectroscopic techniques known to you

Q7 Describe the principles and techniques of nucleic acid hybridisation

Q8 Write at length about principle, process, types and applications of Polymerase chain reaction

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