

Exam. Code : 210004

Subject Code : 8449

M.Sc. (Botany) Semester—IV

BOTC-624 : ANALYTICAL TECHNIQUES

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Attempt **ALL** the Sections.

SECTION—A

Note :— Attempt all the parts. Answer to any part should not exceed 4 lines.

1. (a) What is the technique used for *in vivo* replication of genomic DNA ?
- (b) Define spectroscopy.
- (c) Write down the applications of fluorescence scanning.
- (d) Define cytophotometry
- (e) Explain how immersion oil improve resolution.
- (f) Define atomic absorption.
- (g) Write down the principle of High pressure liquid chromatography.
- (h) What are cot curves ? 8×1=8

SECTION—B

Note :— Attempt any **SEVEN** questions. Answer to any question should not exceed **2** pages.

2. What are the applications of PCR ?
3. Give a principle of affinity chromatography.

4. Write short note on fixation and scanning.
5. Describe briefly the ion exchange chromatography.
6. Write applications of PCR.
7. Briefly describe phase contrast microscope.
8. Define ESR spectroscopy. Write its applications.
9. Discuss the hydrodynamic methods used in analytical techniques.
10. Differentiate between electrophoresis and electrofocussing.
11. Write down the principle of plasma emission spectroscopy.

7×3=21

SECTION—C

Note :— Attempt any **THREE** questions. Answer to any question should not exceed 4 pages.

12. Describe in detail the sequencing of proteins.
13. Name biophysical methods used for analysis of biopolymeric structure and discuss their principles.
14. Write in detail about NMR and its applications.
15. What is HPLC system ? Discuss in detail its principle and functioning.
16. Discuss in detail the applications of flow cytometry.

3×7=21