

(i) Printed Pages: 3

Roll No.

(ii) Questions : 9

Sub. Code :

3	4	7	3
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Exam. Code :

0	4	3	6
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**M.Sc. Bio-Technology 2nd Semester
(2054)**

BIOPHYSICAL AND BIOCHEMICAL TECHNIQUES

Paper : MBIO-202

Time Allowed : Three Hours]

[Maximum Marks : 80

Note :—Attempt **FIVE** questions in all, including Q. No. 1 which is compulsory and selecting **ONE** question from each Unit.

1. Answer briefly :—

(a) Void Volume

(b) Quenching in Fluorescence

(c) Tracking dye

(d) Reverse Phase Chromatography

(e) Hydrophobic interactions

(f) Miller Indices

(g) Raman effect

(h) Pulse Field Gradient Electrophoresis (PFGE). 8×2

UNIT—I

2. (a) Explain working of Gas Chromatography. 12
(b) Discuss various types of ionization methods used in mass spectroscopy. 4

OR

3. (a) Discuss principle and applications of size exclusion chromatography. 8
(b) Discuss chromatofocussing. 8

UNIT—II

4. (a) Discuss principle and applications of LASER. 8
(b) Discuss applications of UV-Visible spectroscopy. 8

OR

5. (a) Discuss principle and instrumentation of NMR spectroscopy. 12
(b) State Bragg's Law for X-ray crystallography. 4

UNIT—III

6. (a) Explain procedure for Agarose Gel electrophoresis. 10
(b) What are various types of Polyacrylamide Gel Electrophoresis (PAGE) ? 6

OR

7. (a) Discuss instrumentation and working of analytical ultracentrifugation. 12
(b) Discuss the principle of density gradient centrifugation. 4

UNIT—IV

8. (a) Explain the Maxam-Gilbert sequencing method for DNA. 12

(b) Differentiate between Western and Northern Blotting. 4

OR

9. (a) How radioactivity is measured using GM counters ? 8

(b) Enumerate applications of radiotracers in medical diagnostics. 8