

15064(OR)

M.Sc., DEGREE EXAMINATION, OCTOBER/NOVEMBER 2015  
FIRST SEMESTER

Microbiology

Paper IV – BIOPHYSICAL AND ANALYTICAL TECHNIQUES  
(2014-16 Batch)

Time: Three hours

Max. Marks: 75

(No additional sheet will be supplied)

PART A- (5 x 3 =15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page

1. Biosensor
2. Henderson - Hasselbalch equation
3. Gel permeation chromatography
4. Applications of analytical centrifugation
5. Applications of spectrophotometry
6. Beer - Lamberts Law
7. SDS - PAGE
8. Immuno electrophoresis

PART B - (4 x 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages

9. Write an essay on applications of salting out, dialysis and lyophilization.  
(OR)
10. Describe the following and mention their applications :  
(a) Membrane Filtration (b) Cell disruption methods
11. Describe the analysis of sub-cellular fractions by isodensity centrifugation.  
(OR)
12. Write briefly the principle and applications of:  
(a) Ion -exchange chromatography (b) TLC
13. Explain the basic principle and applications of ESR and NMR Spectroscopy  
(OR)
14. Write briefly about the instrumentation and biological applications of  
(a) IR Spectroscopy (b) Mass spectrometry
15. What is Southern blotting? Explain its procedure and applications  
(OR)
16. Describe the detection and measurement of radioactivity by GM and liquid scintillation counter