

QP Code: 213019

Reg. No.....

**Second Year B.Sc Medical Microbiology Degree Regular/Supplementary
Examinations December 2025**

Paper VIII – Methodology and Instrumentation

(2016 Scheme)

Time: 3 hrs

Max Marks: 100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw Diagrams wherever necessary*

Long Essays

(2x15=30)

1. Discuss the principle, types, applications, and significance of Enzyme Linked Immunosorbent Assay (ELISA) in clinical diagnostics.
2. Elaborate on the role of High Performance Liquid Chromatography (HPLC) in medical diagnostics and therapeutics. Discuss its applications in drug analysis, clinical diagnostics, and biomarker detection, highlighting its impact on patient care.

Short Essays

(2x10=20)

3. Confocal Microscopy
4. Explain the function, operating principle, and application of autoclave in hospital setting. Describe the various sterilisation control measures

Short Answers

(6x5=30)

5. Describe the applications of gel electrophoresis
6. Ultra centrifugation
7. Freeze etching
8. Explain the principle of Reverse Phase Chromatography (RPC) and its' application in separating non polar compounds
9. Factors influencing efficiency of centrifugation
10. Principle and significance of Radio Immuno Assay

Comment on

(10x2=20)

11. Examples for gel tracking dyes
12. Enumerate the difference between Class I and class II biological safety cabinets
13. How does a colorimeter work to quantify the colour intensity of a solution
14. Sedimentation coefficient
15. Sterilization control of Hot air oven
16. How cold rooms are maintained at controlled temperatures
17. Describe the role of the stationary phase and the mobile phase in HPLC separation
18. Significance of calibration of pH meters
19. Application of Nephelometry in diagnostics
20. Revolution per Minute (RPM)
