

QP Code: 212020

Reg. No.....

**Second Year B.Sc Medical Biochemistry Degree Regular/Supplementary
Examinations December 2025
Paper VII – Analytical Methods and Instrumentation
(2016 Scheme)**

Time: 3 hours

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 table/diagrams/flow charts wherever necessary*

Long Essays: (2x15=30)

1. Write the principle involved in electrophoresis. What are the various factors affecting rate of migration and explain instrumentation for electrophoresis
2. Describe the principle, components, working procedure, advantages and disadvantages of a flame photometer

Short Essays: (2x10=20)

3. Discuss the use of radioactive isotopes in biochemistry and medicine
4. Differentiate between differential centrifugation and density gradient centrifugation

Short Answers (6x5=30)

5. Principle and applications of affinity chromatography
6. Briefly explain applications of centrifugation technique
7. Instrumentation and working of fluorimeter
8. Discuss any two detectors used in gas chromatography
9. Application of flame emission and atomic absorption spectrometry
10. Capillary electrophoresis

Comment on (10x2=20)

11. Enzymes used in ELISA
12. Two applications of Ion selective electrodes
13. Selection of filters
14. Photomultiplier tube
15. Applications of radioimmunoassay
16. Pumps used in high performance liquid chromatography
17. Isopycnic centrifugation
18. Basic principle of radioactive waste disposal
19. Solubilizers in electrophoresis
20. Applications of pH meter
