

QP Code: 212020

Reg. No.....

**Second Year B.Sc Medical Biochemistry Degree Regular/Supplementary
Examinations December 2024**

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. Define pH. What are the different methods of determining pH. Describe in detail the working of pH meter.
2. Explain colorimetry. Discuss the parts of a colorimeter with the help of a diagram. What is test, standard and blank in quantitative estimation. Add a note on applications of colorimetric assay.

Short Essays: (2x10=20)

3. Explain in detail the different types of enzyme linked immunosorbent assay (ELISA)
4. Discuss the principle and applications of SDS-PAGE electrophoresis. How is this technique used in determination of molecular weight of a protein

Short Answers (6x5=30)

5. Explain the principle and applications of gel filtration chromatography
6. How is molecular weight determined by centrifugation
7. Reverse phase high performance liquid chromatography and its applications
8. Geiger-Muller counters
9. Instrumentation of Nephelometry
10. Biological effects of radiation

Comment on (10x2=20)

11. Monochromators
12. Partition chromatography
13. Deviations of Beer-Lambert's law
14. Radioactive iodine
15. Single beam spectrophotometer
16. Isoelectric focusing
17. Give the expression for the dissociation of water
18. Turbidimetry.
19. Analytical ultracentrifuge
20. Transmittance and absorbance
