

Second Year M.Sc. MLT Degree Supplementary Examinations
January 2026
(Biochemistry)

Paper VI - Diagnostic Biochemistry, Recent Advances in Clinical Chemistry and Biostatistics

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*

Essays:

(10x10=100)

1. Describe the significance of liver enzymes (ALT, AST, ALP, GGT) in liver function tests.
2. What are the differences between metabolic alkalosis and respiratory alkalosis in terms of causes, arterial blood gas values and compensatory responses. (5+5)
3. Describe the role of the placenta in fetal development and how the feto-placental function can be assessed. Discuss the different types of tests used to evaluate placental function. (5+5)
4. Describe the diagnostic approach to chronic kidney disease (CKD). How do laboratory tests like serum creatinine, glomerular filtration rate (GFR), and urinalysis aid in the diagnosis and staging of CKD. (3+7)
5. Explain the importance of sampling methods in biostatistics. Discuss different sampling techniques (4+6)
6. Describe the pathophysiology of Type 1 and Type 2 diabetes mellitus and its related disorders and diagnostic tests
7. Define Quality Control (QC) in clinical chemistry. Discuss its importance in ensuring the accuracy and reliability of laboratory results. (2+8)
8. Define tumour suppressor genes and explain their role in preventing cancer. (2+8)
9. What are the different types of automation used in clinical biochemistry. Compare Total Laboratory Automation (TLA) and Modular Automation. (4+6)
10. Explain the role of pancreatic enzyme tests in the diagnosis of acute and chronic pancreatitis.
