Unit I: Buffer, solution and pH
1. Preparation of normal and molar solution
2. Buffer preparation
3. Determination of pKa, pH

Unit II: Nucleic Acids
1. Isolation and Purification of DNA
2. Isolation and Purification of RNA
3. Purification of Nucleic Acid
4. Quantitative estimation of Nucleic acid
5. Agarose gel electrophoresis for separation of nucleic acid

Unit III: Carbohydrate and Lipids
1. Qualitative test for carbohydrate (Benedict, Molisch etc)
2. Qualitative test for Lipids
3. Thin liquid chromatography (TLC for separation and identification of carbohydrate and lipids

Unit III: Proteins
1. Isolation of Protein
2. Qualitative test of Protein (Biuret test, Xanthoproteic test, Ninhydrin test etc)
3. Estimation of Protein (Bradford, Lowry etc)
4. Paper Chromatography for separation and identification of amino acid
5. Ion exchange chromatography for separation of amino acid
6. Protein purification
7. SDS PAGE analysis of proteins
8. Western blotting for protein analysis
9. Isoelectric pH determination

Unit IV: Enzymes
1. Enzyme kinetics
2. Study of the activity of salivary amylase and the effect of pH, temperature, salts on its activity
3. Enzymatic activity of Trypsin and Lipase
4. Enzyme purification
5. Determination of Km, Vmax and Ki

Unit V: Clinical test
1. Acid and Alkaline phosphatase activity
2. SGPT and SGOT test
3. Estimation of Urea, Uric acid and Creatinine
4. Estimation of Glucose
5. Estimation of Cholesterol
6. Estimation of Vitamins
7. Glucose tolerance test
8. Estimation of Ca2+ and T4 in serum
9. Pregnancy test by HCG hormone
10. Estimation of Glycosylated haemoglobin