2.2 Pharmaceutical Analysis I

Theory

1. Accuracy and Precision, classification of errors,minimization of errors, rejection of doubtful values,significant figures& computations, mean (average) deviation, standard deviation, calibration of analytical equipments**.**
2. Titrimetric Analysis**:** Theoretical considerations, classification of reactions in titrimetric analysis, standard solutions, primary and secondary standards.
3. Aqueous Acid Base titrations: Neutralization, indicators, mixed indicators,universal indicators, Assay of Sodium bicarbonate, Sodium carbonate, Ammonia solution, Boric acid, Ammonium chloride, Ammoniated Mercury.
4. Non aqueous Acid Base Titrations: Non aqueous acid- base chemistry, solvents for non- aqueous titrations, indicatore for non- aqueous titrations, determination of organic acid and bases in non- aqueous media. Assay of phenobarbitone and sulphathiazole.
5. Complexation Titrations: Introduction, stability of complexes, factors influencing ther stability of complexes, types of D.T.A. titrations, Assay of calcium gluconate, Magnesium sulphate, Zinc sulphate.
6. Precipitation titrations: Introduction, precipitation reactions, determination of end point in Precipitation reactions,Assay of Sodium chloride injection, yellow mercuric oxide.
7. Oxidation- reduction titrations including iodometry and iodimetry: Introduction, determination of end point in oxidation reduction reactions.
   (a) Internal oxidation – reduction
   (b) Self indicators
   (c) External indicators.
   Assay of ferrous sulphate, hydrogen peroxide solution, iodine solution,chlorinated lime, copper – sulphate.
8. Gravimetric Analysis: Introduction, precipitation methods, conditions of precipitation, filtration and washing of precipitate,drying and ignition of the precipitate, Assay of Sodium sulphate, Magnesium sulphate.
9. Miscellaneous methods: Sodium nitrate titrations, assay of Benzocaine, Dapsone,Sodium Amino Salicylate, sulphamethoxazole.

Practicals

1. introduction to the use and care of apparatus & equipments simple chemical analysis.
2. Selected experiments on titrimetric and gravimetric analysis based on theory.

Books recommended:

1. Pharmacopoeia of India, Govt. of India, Ministry of Health, Delhi

2. G.H. Jeffery, J. Bassett, J. Mendham, R.C. Denny, Vogel's Text book of quantitative chemical analysis, E.L.B.S. London
3. A,H, Beckett and J.B. Stanlake, "Practical Pharmaceutical Chemistry" Part I The Athelene Press, University of London.
4. K.A. Connors, A text book of Pharmaceutical Analysis, Juhu Wiley & Sons
5. L.G. Chatter," Pharmacetical Chemistry Vol !& II Marcel Dekker, U.S.A.