

Syllabus for B. Sc. Semester – VI
CHE - 310 (Analytical Chemistry)

UNIT – I

- [A] **Errors and treatment of Analytical data** [08 Marks]
Significant figures, Accuracy and precision, Types of errors and minimization of errors. Ways of expressing accuracy and precision. Rejection of a result, Test of significance (Q-Test, Student t-Test and F-Test) correlation coefficient. Literature of Analytical Chemistry.
- [B] **Organic reagents used in quantitative Analysis** [06 Marks]
Separation of methods with 8-Hydroxy Quinoline, Cupferron and DMG

UNIT – II

- [A] **Chromatographic methods** [08 Marks]
General principle, classification of chromatographic separation. Ion exchange chromatography (Ion Exchange equilibria, Types of Ion Exchange capacity, Application of Ion Exchange resins). Gas Chromatography, Instrumentation and evolution of data. High Performance Liquid Chromatography (HPLC) Principle and Instrumentation.
- [B] **Solvent Extraction Separation** [06 Marks]
Principles of solvent extraction, choice of solvent, distribution coefficient, distribution ratio, percentage (%) extraction. The extraction process, solvent extraction of metals, selective extraction and separation efficiency.

UNIT – III Electro analytical Techniques

- [A] **Polarography** [07 Marks]
Introduction, Principle, electrode, Types of currents, Determination of half wave potential, Ilkovic equation, methods of determining concentration (Standard addition method and Calibration method)
- [B] **Potentiometry** [07 Marks]
The scope of potentiometric titrations, Precipitation and neutralization titrations, Graphical method including Gran's plot for selecting end point, Differential titration, Dead stop titration, Ion selective Electrode, various types of Ion selective Electrodes and use of Calcium ion selective electrode.

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Semester – VI

Nirav College
Chemistry Paper – 310

(Analytical Chemistry)

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