

Syllabus

M.Sc. (Chemistry) Programme

(SEMESTER – III)

Lab Course (Physical /Inorganic Chemistry Lab

Programme Code- (MSCCH -21)

Course Code – (MSCCH -605L)

Block I Physical Chemistry Practical

Unit 1 Thermodynamics

Determination of the order of reaction by isolation method

Determination of the order of reaction by half life period method

Determination of the order of the reaction by Integration method.

Determination of the entropy of activation of a reaction.

Determination of free energy change of a reaction.

Determination of the equilibrium constant of a reaction.

Unit 2 Electrochemistry

Determination of pH by electrical conductivity method.

Hydrolysis of the salts by electrical conductivity method

Hydrolysis of the salts by EMF.

Determination of the dissociation constant of a weak acid by conductivity method.

Determination of the equivalent conductivity of a strong electrolyte conductrometrically.

Determination of the equivalent conductivity at infinite dilution of weak electrolyte

Conductrometrically.

Validity of Ostwald's dilution law.

Determination of the degree of dissociation/ association conductrometrically.

Determination of solubility and solubility product of sparingly soluble salts (e.g., PbSO_4 , BaSO_4) conductrometrically.

Note: The candidates shall have to do a minimum of 05 experiments

Block II Inorganic Chemistry

Unit 3 Quantitative analysis

Quantitative analysis of binary mixture of metal ions involving volumetric (by complexometric titration using masking and demasking agents) and gravimetric analysis.

Unit 4 Chromatography

Separation of cations and anions by paper/TLC/Ion Exchange chromatography

Note: Inorganic exercise 30; Physical 30; Record (including test) 15; attendance 10; viva 15