polymerisation method / polyvinylalcohol from polyvinylacetate / Phenol formaldehyde/ urea formaldehyde resins / thin films of polymers.

C. Thermodynamics Experiments (Any Five experiments to be carried out)

1. Determination of activities of an electrolyte and non-electrolyte by cryoscopy.
2. Determination of partial molar volumes of (a) Salts-water and (b) alcohol-water (methanol & ethanol) systems by density method.
3. Study of complex formation between mercury and potassium halides by cryoscopy.
4. Determination of specific heat of liquids and solutions by calorimetry.
5. Determination of stepwise neutralisation of acids.
6. Determination of heat of solution of KNO3 in water, integral heat of dilution of H2SO4 and heat of ionization of acetic acid and ammonium hydroxide calorimetrically.
7. Cryoscopic and ebullioscopic analysis of the given mixture of urea and glucose.
8. Determination of vant Hoff's factor for benzoic and acetic acid mixtures in benzene.
9. Viscosity of sound in liquid-ultrasonic interferometry

D. Spectroscopic Experiments (**Any Two experiments to be carried out**)

1.Kinetics of oxidation of alcohol by potassium dichromate – spectrophotometrically.
2.Simultaneous determination of Manganese and chromium in a solution of dichromate and permanganate mixture.
3.Determination of pKa of an indicator..
4.Spectroscopic investigation of partition coefficient of iodine between H_2O and $CHCl_3$.
5.Study of the effect of ionic strength on the pH of the given acid with the help of indicators using buffer solution by colorimetric method.

E. Computer related Practicals: Solution of some selected chemical engineering problems to
develop skill for computer applications, programme writing and numerical analysis.
Use of commercial software packages such as Mathcad, Matlab, Aspan Plus, Design II, Use of Chem draw and Chem sketch for construction of molecules. Use of Window excel for drawing graphs estimation of slope intercept.

CH P 559: PROJECT WORK AND DISSERTAION

COURSE OUTCOME:

Enable the students:

- To design the project by collecting required background material by referring the literature
- To understand the functioning and safety features in the industry.
- To improve the experimental and soft skills.
- To learn various analytical and instrumental techniques and interpretation of analytical data.