

BOARD OF INTERMEDIATE EDUCATION: ANDHRA PRADESH: HYDERABAD

INTERMEDIATE- II YEAR CHEMISTRY PRACTICALS SYLLABUS

(Effective from 2013-14)

Practical work is designed with a view to impart hands on skills to the young students and create awareness about scientific thinking scientific methods of analysis.

PRACTICALS SYLLABUS

A. Surface Chemistry(Periods 5)

(a) Preparation of one lyophilic and one lyophobic sol.

Lyophilic sol - starch, egg albumin and gum

Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.

(b) Study of the role of emulsifying agents in stabilizing the emulsions of different oils.

B. Chemical Kinetics(Periods 4)

(a) Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.

(b) Study of reaction rates of any one of the following:

(i) Reaction of iodide ion with hydrogen peroxide at room temperature using different concentration of iodide ions.

(ii) Reaction between $S_2O_8^{2-}$ and I^- using starch solution as indicator (clock reaction).

C. Thermochemistry (Periods 4)

Any one of the following experiments

i) Enthalpy of dissolution of copper sulphate or potassium nitrate.

ii) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH)

iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone and chloroform

D. Electrochemistry(Period 2)

Variation of cell potential in $Zn/Zn^{2+} || Cu^{2+}/Cu$ with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.

E. Chromatography (Periods 2)

i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values.

ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R_f values to be provided).

F. Preparation of Inorganic Compounds (Periods 4)

i) Preparation of double salt of ferrous ammonium sulphate or potash alum.

ii) Preparation of potassium ferric oxalate.

G. Preparation of Organic Compounds (Periods 2)

Preparation of any two of the following compounds

- i) Acetanilide
- ii) Di-benzal acetone
- . iii) β -Naphthol aniline azo dye

H. Tests for the functional groups present in organic compounds (Periods 6)

Alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary) groups.

I. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs. (Periods 4)

J. Determination of concentration/molarity of KMnO_4 solution by titrating it against a standard solution of: (Periods 8)

- i) Oxalic acid,
- ii) Ferrous ammonium sulphate

K. Qualitative analysis (Periods 14)

Identification of one cation and one anion in the given salt

Anions : CO_3^{2-} , CH_3COO^- , Cl^- , Br^- , I^- , NO_3^- , SO_4^{2-}

. Cations : Pb^{2+} , Cu^{2+} , Al^{3+} , Fe^{2+} , Mn^{2+} , Ni^{2+} , Zn^{2+} , Ca^{2+} , Ba^{2+} , Sr^{2+} , Mg^{2+} , NH_4^+

(Note: Insoluble salts excluded)

PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects.

- Study of presence of oxalate ions in guava fruit at different stages of ripening.
- Study of quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.

- Study of the effect of potassium bisulphate as food preservative under various conditions (temperature, concentration, time etc.) :
- Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
 - Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice etc.
 - Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.