MANGALORE UNIVERSITY

Department of Industrial Chemistry

ICS 505: CHEMICAL ANALYSIS IN AGRO, FOOD AND PHARMACEUTICAL INDUSTRIES

Course Outcomes:

Students gain knowledge about the analysis of soil and fuel, determination calorific values of fuels, drug, food analysis and clinical chemistry.

Unit I **10 Hrs**

Analysis of soil: Moister, pH, total nitrogen, phosphorous, silica, lime, Magnesia, Manganese, sulfur and alkali salts.

Fuel analysis: Solid, liquid and Gas , ultimate and proximate analysis heating values , grading of cool , liquid fuels , flasks points , aniline point , octane number and carbon residue , gaseous fuels – producer gas and water gas – calorific value.

Unit II **10 Hrs**

Clinical Chemistry: Composition of blood collection, andpreparation of samples, clinical analysis – serum electrolytes, blood glucose, bloodurea nitrogen, uric acid, albumin, globulin, barbiturates, acidic and alkaline phosphates,Immunoassay , principals of radiimmunoassy and applications. The blood- gas analysis –trace elements in the body.

Unit III **10 Hrs**

Drug analysis: Narcotics and dangerous drugs, classification of drugs, screening by gas m thin layer chromatography and spectrophotometric analysis.

Introduction to Fluorescence, instrumentation and its application in Biological, Medical and Drug Development.

Unit IV **12Hrs**

Food analysis : Moister, ash, crude protein, fat, crud fiber, carbohydrate, calcium,potassium, sodium, and phosphates, food adulteration – common adulteration in food,contamination of food stuffs, microscopic examination of foods for adulterants,Pesticide analysis in food products, Extraction and purification of sample, HPLC, gas chromatography for organo – phosphates, thin layer chromatography for identification ofchlorinated pesticides in food products

Reference Books

1. Fundamentals of analytical chemistry by D. A. Skoog , D. M. West and F. J. Honer, W. B. Saunders.
2. Chromic phenomenon , The Technological application of color chemistry Peter,Bamfield

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