AMFT11 FOOD ANALYSIS

UNIT-1 INTRODUCTION

1.1 Introduction, food regulations and standards;
1.2 Sampling methods, and sample preparation for analysis;
1.3 Statistical evaluation of analytical data.
1.4 General methods of food analysis- Moisture 48 determination by different methods;
1.5 Ash analysis-different methods; titrable acidity in foods;
1.6 Determination of crude fiber and dietary fibre.

UNIT-2 LIPIDS, PROTEINS AND CARBOHYDRATE ANALYSIS

2.1 Analysis of oils and fats for physical and chemical parameters and quality standards,
2.2 Protein analysis by different techniques;
2.3 Analysis of carbohydrates by different techniques.

UNIT-3 SPECTROSCOPIC TECHNIQUES

3.1 Basic principles;
3.2 Application of UV-Visible spectrophotometer in the analysis of food additives;
3.3 IR Spectroscopy in online determination of components of food
3.4 FT-IR tintometer in color intensity determination;
3.5 Application of Atomic Absorption Spectrophotometer and ICP-AES in analysis of mineral elements and fluorimeter in vitamin analysis.

UNIT-4 CHROMATOGRAPHIC TECHNIQUES

4.1 Basic principles; application of paper chromatography and TLC in food analysis;
4.2 Detection of adulterants in foods;
4.3 Column chromatography for purification analysis
4.4 Ion exchange and affinity chromatography; HPLC and GC in food analysis;
4.5 Significance of MS detectors in HPLC and GC; FAME analysis in oils and fats.

UNIT-5 ELECTROPHORESIS, REFRACTOMETRY AND POLARIMETRY

5.1 Basic principles; application of the electrophoresis in food analysis;
5.2 Brixs value of fruit juices; total soluble solids in fruit products;
5.3 Refractive indices of oils and fats; specific rotations of sugars;
5.4 Estimation of simple sugars and disaccharides by polarimeter.

References Books

1 Otles, Semih. “Methods of Analysis of Food Components and Additives”. CRC Press, 2005.
2 Nollet, Leo M.L. “Hand Book of Food Analysis” II Rev. Edition. Vol. I, II & III, Marcel & Dekker, 2004.
3 Nollet, Leo M.L. “Food Analysis by HPLC”. II Rev. Edition, Marcel & Dekker, 2000
4 Otles, Semih. “Handbook of Food Analysis Instruments”. CRC Press, 2009.