AMFT16 FOOD ADDITIVES

UNIT-1 INTRODUCTION

1.1 Definition, role of food additives, classification of food additives based on their role,
1.2 Dual role of certain additives, INS numbering system of food additives,
1.3 Safety requirements of food additives,
1.4 Acceptable daily intake of food additives,
1.5 JECFA and Food Chemical Codex standards for food additives,
1.6 Status of food additives with respect to Indian laws,
1.7 GMP and permissible upper levels of food additives under Indian food laws.

UNIT-2 ACIDITY REGULATORS AND PRESERVATIVES

2.1 Acidity Regulators- definition, chemical structure,
2.2 Role and importance, pH modulation and taste, acidity profile, permitted acidity regulators,
2.3 Levels of usage and food applications.
2.4 Preservatives of chemical and microbial origin;
2.5 Mode of action on spoilage organisms and pathogens,
2.6 Factors affecting the performance of preservatives,
2.7 Active forms of preservatives, necessity in a food and levels of usage;
2.8 Permitted preservatives and food applications. Case studies / illustrations

UNIT-3 EMULSIFIERS, STABILIZERS AND THICKENERS

3.1 Emulsion, surface tension, oil in water and water in oil emulsion,
3.2 Hydrophilic and Lipophilic balance (HLB),
3.3 Role of emulsifiers, different classes of emulsifiers and their chemical structure, their HLB values and role in emulsion stabilization;
3.4 Role of different stabilizers and other substances in emulsion stability;
3.5 Emulsion formation process and equipment; measurement of emulsion stability; permitted emulsifiers and stabilizers and food applications.
3.6 Thickeners- definition, chemical structure, role in food processing and product end characteristics, list of permitted thickeners and food applications.

UNIT-4 ANTIOXIDANTS AND ANTI-CAKING AGENTS

4.1 Antioxidants - Chemistry of oxidative deterioration of food and its constituents and its effect on the quality;
4.2 Defining antioxidant; water soluble and oil soluble antioxidants and their chemical structure, permitted antioxidants; mechanism of action,
4.3 Permitted levels and food application.
4.4 Anti-foaming and propellants, Anti caking agents- definition, role in preventing spoilage, mode of action, permitted list of anti-caking agents and food application.

UNIT-5 COLOR AND ARTIFICIAL SWEETENERS

5.1 Color- Natural and synthetic food colors, their chemical structure,

5.2 Shades imparted, stability, permitted list of colors, usage levels and food application.

5.3 Artificial Sweeteners- list, structure, taste profile, permitted list, usage levels and food applications.

References Books

1 Emerton, V. "Food Colors", Blackwell, 2008

2 Peter A Williams and Glyn O Philips, "Gums and stabilizers for the Food Industry", RSC, 2006.

3 Branen, A. L. "Food Additives" 2nd Edition, CRC press, 2002