

Code 18 : MAJOR SUBJECT GROUP – DAIRY TECHNOLOGY

(Subjects : 18.1 : Dairy Technology, 18.2 : Dairy Engineering)

UNIT – I : Principles and processes of food preservation, non – conventional sources, processing of fluid milk, Computerization and Automatic Process Controls in Milk Processing. HACCP Concepts in Fluid Milk Processing. Advances in Centrifugal Separation and Bactofugation. Manufacture of various types of dairy products and changes occurring during manufacture and storage and their defects. Sensory evaluation and judging of milk and milk products, types of packaging materials and their properties, packing forms and operations, problems in food packaging, recent advances in packaging dairy and food products. Intelligent Food Packaging. Nutritional Labeling of Food Products. Application of Membrane Processing in Milk Processing.

UNIT – II : Materials and sanitary features of the dairy equipments. Homogenizer- Theory of Homogenization. Triplex pump, Lubrication of the Homogenizer, care and Management of homogenizer, Homogenizer Accessories and Standards for Homogenizer. Pasteurizer- Pasteurizer construction & Principle Materials used in Construction of Pasteurizers. High temperature short time Pasteurizer, care of Pasteurizer, Reaction Kinetics, Sterilizer, Mixing & agitation equipments, principles of evaporation, drying. Atmosphere concentration, Vacuum Pan, Fluidization. Care of Vacuum Pan, Atmospheric Drum Dryer. Spray Dryer principles of dairy plant layout and design, Functional Design, space requirement of Milk Plant, problem through computers, centralized dispersal of data processing, d – BASE – III, Lotus 1 – 2 – 3 to graphics, Fortran.

UNIT – III : Fluid mechanics – properties of fluids, Bernoulli's equation and its applications, hydraulic systems Types of Pumps, Sanitary pumps, Standards for Centrifugal and Positive Rotatory Type of pumps, Selection of Pumps. Care and Upkeep of Pumps dimensional analysis, refrigeration and air-conditioning. Artificial Refrigeration, Compression Refrigeration System, Refrigeration Accessories. Calculation of size of Refrigeration Machine Requirements. Heat-transfer and thermodynamics; mechanical separations, Rittinger's and Kick's laws, Engineering of mechanics, theory of machine, strength of materials, Hook's law, materials of fabrications, machine tools, Electrical Engg., Electromagnetic induction, Magnetic – Hysteresis loop (BH Curve), AC fundamentals.