

Food Science & Technology

I. Food Chemistry:

Carbohydrates, amino acids and proteins, Lipids, Vitamins and minerals classification, sources, functions, deficiencies, nutritional significance, digestion, absorption and metabolism. Enzymes and its classification and action; Water and electrolyte balance.

II. Food Science & Quality Control:

Cereals & Millets, Pulses & Legumes, milk & milk products, Egg & Fleshy foods, Vegetables & Fruits, Sugar & Sugar products, Fats & oils – composition, nutritive value, methods of processing, nutrient losses, uses & storage, anti-nutritional factors. Food adulteration, food laws and food safety, food packaging, food labeling.

III. Food Microbiology

Introduction to microbiology and its relevance to everyday life – General morphology of micro-organisms – General characteristics of bacteria, fungi, virus, protozoa, algae. Microbiology of foods – cereals based products, meat, poultry, eggs, fruits, vegetables, milk, milk products, salts, sugars etc. Role of microorganisms in fermented foods – bread, malt beverages, wine, vinegar, butter and cheese etc. Food poisoning and their causative organisms, food borne infections.

IV. Food Processing and Preservation;

General principles of food processing, preservation by high and low temperature, drying, irradiation, sugar, salt etc. Preparation of jams, jellies, marmalades, juices, squashes, ketchup, pickles and chutneys. Preparation of milk products – cheese, condensed and evaporated milk, whole and skim milk powder and ice cream.

V. Nutrition:

Balanced diet, RDA, Food groups, Food Pyramid, Food exchange list, Nutritional requirements for different age groups. Disorders of malnutrition, GIT disorders, Obesity, hypertension, renal diseases, cardiovascular diseases, Diabetes, Cancer & Inborn errors of metabolism – Etiology, symptoms and dietary management, functional food and nutraceutical

vi. Community Nutrition and Public Health Education:

- Modes of Communication in Health Education
- School Health Services
- Principles of Community Nutrition
- Methods of Nutritional Assessment
- Epidemiology of Communicable Diseases
- Measures to Combat Malnutrition & Vital Statistics
- Health Administration
- Occupational Hazards
- Nutrition Intervention Programs

vii. Human Physiology:

- Cell-Structure and function
- Blood – Blood cells, Haemoglobin, Blood groups, Coagulation factors
- Skeletal Systems-Bones, joints & bone deformities in brief
- Cardiovascular system-Heart rate, Cardiac cycle, cardiac output, blood pressure, hypertension, radial pulse
- Lymphatic system-Lymph glands and their function
- Spleen-structure and functions
- Respiratory System-Ventilation, functions, lung volume and capacity
- Gastrointestinal system-Process of digestion in various parts
- Endocrine glands
- Hormones-secretion and functions
- Excretion system- Structure of nephron, Urine formation
- Central Nervous System, Motor Nervous System, Sensory Nervous system, Sympathetic Nervous system & Parasympathetic nervous system
- Skin – Structure and functions
- Reproductive system – Structure and functions of male & female reproductive organs, menstruation puberty, menopause, fertilization and development of the fertilized ovum, placenta and its function
- Special senses- Structure and function of eye and ear, common diseases of eye and ear
