

Paper: Nutritional Sciences and Dietetics

Topics
<p>Nutrition: Introduction to food, nutrition and health. Definition of nutrition, health, good nutrition and Malnutrition, Concept of foods and classification of food – Macro & Micronutrients. Diet and health: Problems of deficiency, disease of affluence, food safety: additives and contamination, Digestion and absorption of Carbohydrates, fats, proteins, vitamins and iron, Overweight and obesity: Cause and treatment , Nutrition and dietary consideration at different stages of life, Nutrition in deficiency and diet related diseases, Water and electrolyte balance, Food security, organic foods and technologies for food and nutrition security, Nutrition and health significance of food ingredients, Nutritional implications of food processing and packing</p>
<p>Food Adulteration and food laws: Food Adulteration and Food Laws- Definition, Types, Common adulterants and home scale methods of detecting adulterants. Food Laws– FSSAI, PFA, BIS, AGMARK, FPO, HACCP, FAO/WHO Codex Alimentarius commission.</p>
<p>Human Physiology: Maintenance of human body: Cardiovascular system, Lymphatic system, Respiratory system, Endocrine system, Digestive system, Urinary system, Reproductive system- Organs and functions., Classification and metabolism of carbohydrates, lipids, proteins, enzymes, vitamins and minerals.</p>
<p>Immunopathology: Basic concepts about infection, immunity and standard precautions. Sterilization, Disinfection procedures and its applications. Concepts of diseases, classification of lesions and inflammation and repair. Systemic disorders: coronary heart disease, bronchial asthma, emphysema, bronchiectasis, auto-immune disease, diseases of urinary system, reproductive system and central nervous system. Hospital acquired infection, source, routes of spread, preventive measures and precautions. Hospital waste management, handling, treating of health care waste and disposal. Important communicable diseases:- Tuberculosis, Leprosy, HIV- AIDS, Hepatitis-B and C, Food poisoning- risk factors and prevention. Non-communicable diseases: CHD, Obesity, Diabetes, Hypertension, Cancer-risk factors and prevention.</p>
<p>Nutraceuticals, functional foods and Nutrigenomics: Primary and secondary metabolites in plants – a) Vitamins b) Carotenoids c) Conjugated linolenic acid d) Flavonoids e) Amino acid Omega – g) 3 PUFA f) Terpenoids. Mechanism of action – Anticancer, influence on blood lipid profile, antioxidant, anti-inflammatory and osteo genetic properties Proteins, modified proteins, Starch, cellulose, hemicelluloses, hydrocolloids and gums- functional properties Organic components present in food, Vegetables, Cereals, milk and dairy products as Functional foods. Spices and herbs as potential sources of nutraceuticals</p> <p>Nutrigenomics, personalized nutrition, nutrigenetics-definition and application Definitions- Nutrigenomics, Metabolomics, Proteomics, Pharmacogenomics and Transcriptomics Inter-relation between, nutrient-gene interactions, nutrigenomics and non-communicable diseases Impact of nutrigenomics – nutrition research, nutrition therapy, food industry and nutrition policy.</p>
<p>Nutritional problems in community: Incidence of nutritional problems, signs, symptoms, and treatment. Communicable and non- communicable disease- causes, modes of transmission and preventive measures.</p>

Nutrition Intervention programs & National Nutrition policy: Nutrition Intervention programs in India: Genesis objectives and operation of National Anemia Control Prophylaxis Program, National Goiter Control Program, Vitamin A Prophylaxis Program, School Lunch Program. CMNMP, ICDS, TINP.

Nutrition Education & Methods of Assessment of nutritional status: Nutrition Education: Its importance to the community. Qualities of training workers in nutrition education programs, integration of nutrition with education and extension work. Methods of education, when to teach, whom to teach. Direct and indirect methods of nutritional assessment.

Counselling: Introduction to counselling, definition, scope of counselling practise, origin and history of counselling, Phases of counselling – assessment, initiation and termination, Different facets of counselling: Individual and group counselling, skills in counselling – observation, questioning,, communication, making notes and reflections, Hospital counselling: Counselling to terminally ill, pain management, rehabilitation counselling in hospitals, Cultural issues in counselling, Counselling intellectual exceptionality – superior and mental retardation, Counselling sensory handicaps – visual, hearing, speech, motor, Family, personal and educational counselling, Ethical codes & guidelines – right of clients, dimensions of confidentiality, Ethical and legal responsibilities.

Role of nutrients in sports performance:

Macro and micronutrient: carbohydrates, fats, proteins, minerals, and vitamins functions and role of nutrients. Hydration and ergogenic aids- assessment on dietary, physical fitness, biochemical and clinical status, nutritional counselling techniques in sports, somatotyping, kinanthropometry.