

Syllabus for Entrance Examination for admission to M.Sc. Degree in Food Science and Nutrition

Unit 1

Human Physiology - Structure and function of following - Cell, Skeletal system, Blood and Circulatory system, Gastro-intestinal system, Excretory, Respiratory system, Endocrine system, Reproductive system, Immune system, Special senses.

Unit 2

Nutritional biochemistry

- Chemistry and metabolism of proteins, fats, CHO and nucleic acids.
- Enzymes and hormones.

Unit 3

Principles of Nutrition - Food groups and RDA, Functions, metabolism, sources and deficiency of nutrients [water, energy, CHO , proteins , fats, vitamins and minerals].

Unit 4

Composition, processing, effect of cooking and uses of following categories of foods - Cereals and millets, Legumes and oil seeds, Fruits and vegetables, Flesh foods and Eggs, Milk and milk products, Sugar and jiggery, Fats and oils.

Unit 5

Nutrition through life cycle - Pregnancy and lactation, infancy and childhood, school years and adolescence, adults and elderly.

Unit 6

Food preservation and microbiology

- Classification of food in relation to shelf life- characteristics of food and their storage behavior. Contamination and spoilage of different foods- cereals, legumes, sugar and sugar products, vegetables and fruits, flesh foods, egg, milk and milk products.
- Spoilage of foods- microorganism, enzymes, pests and rodents.
- Principles of food preservation and methods of preserving foods [traditional and modern]-

Unit 7

Therapeutic nutrition - Etiology, symptoms, and dietary management in diseases of the gastrointestinal tract, metabolic disorders, kidney diseases, diseases of cardio vascular system, diet for weight management, diet for allergic conditions.

Unit 8

Food processing and Quality Control

- a. Introduction to quality control, Evaluation & assurance, organization of quality control department.
 - Food laws and standards, control of food quality, evaluation of food safety.
 - Food adulteration- classification & detection methods of adulterants
 - Hygiene and sanitation- issue in food safety, potable water, cleaning and washing, cleaning agents, personal hygiene of the food handlers, food contamination and its hazards.
- b. Principles of food packaging – Need, importance and safety of food packaging, Food packaging materials.
- c. Food and nutrition labeling- information available on labels, international food standards.
- d. Subjective and objective evaluation methods of evaluating food acceptability.

Unit 9

Assessment of Nutritional Status

1. Methods of assessing nutritional status:
 - a. Indirect methods – Demography, vital statistics, mortality and morbidity patterns, literacy rate, unemployment rate, socio-economic profile.
 - b. Direct methods – Anthropometry, clinical assessment, biochemical estimations, diet survey (reference standards).

Unit 10

Prevalence of nutritional problems and intervention programmes.

- a. Prevalence of nutritional problems in India with special reference to preschool children or women, protein energy malnutrition, nutritional anemia, deficiency of vitamin A, goiter, fluorosis, other vitamin deficiencies.
- b. Nutritional intervention programmes – Supplementary feeding, school lunch, anemia and vitamin A prophylaxis. Goiter control programmes, ICDS, Nutrition and health education, food supplementation, fortification and enrichment (brief).