Ph.D. Entrance test syllabus of Nutrition and Dietetics

Unit 1: Principles of Nutrition and Nutritional Biochemistry:

Nutrients- Carbohydrates, proteins, lipids and functions, Energy, Macro and micro elements and functions, fat and water soluble vitamins and functions, Fibre, Water, Digestion and absorption of nutrients, bioavailability. Carbohydrate metabolism, Protein metabolism, Lipid metabolism, micronutrient metabolism, Drug nutrient interactions, Enzymes and hormones, and Xenobiotics.

Unit 2: Medical Nutrition Therapy/Clinical Nutrition/Dietetics/Nutrition in Health and Disease:

Principles of diet therapy, Modifications of diets in febrile conditions, Oral and dental conditions, Gastrointestinal and hepato-biliary disorders, Disorders of energy metabolism- obesity, underweight, Non-communicable diseases such as cardiovascular disorders, diabetes mellitus, hypertension and renal diseases, pulmonary disorders, Nutrition in critical care, cancer and allergies and food intolerances.

Unit 3: Nutritional Epidemiology:

Nutrition research methods- observational, case-control, cohort, randomized control trials, Nutrition surveys and surveillance in India, Nutritional assessments- anthropometry, biochemical, clinical and dietary surveys, Monitoring and evaluation of nutrition programmes, and nutrition education.

Unit 4: Public Health Nutrition:

Nutrition security, Nutritional status, Malnutrition, under- and over nutrition, trends in nutritional status in India, Strategies to overcome nutritional challenges- under-nutrition, anaemia, obesity, non-communicable diseases, Nutrition intervention programmes in India, Sustainable development goals, World Health Assembly targets, Trends in breast feeding practices in India, Role of national and international agencies to combat malnutrition, Nutrition education, Maternal and child nutrition programmes in India.

Unit 5: Nutrition through Lifecycle:

Balanced diet, Meal planning, Nutrition during pregnancy, lactation, infancy, toddlerhood, preschool stage, school going children, and adolescence. Growth and development during different stages of lifecycle, nutrition for adults, older adults and old populations, ICMR-NIN RDA (Recommended Dietary Allowance) and EAR (Estimated Average Requirements),

Unit 6: Human Physiology:

Human body systems – Cardiovascular system, Digestive system, Urinary system, Blood, Lymphatic system, Respiratory system, Musculoskeletal system, Endocrine and Reproductive system.

Unit 7: Food Science and Technology

Food groups, Food preparation methods, Food preservation techniques, Food analysis – proximate composition, Sensory analysis and Food processing techniques, Food additives, Food fortification and Food packaging, FSSAI Regulations.

Unit 8: Food Safety:

Food safety, Food security, and Food hygiene. Food borne illnesses, hazard analysis and critical control points and good manufacturing practices, Role of microorganisms in food processing,

Unit 9: Food Service Management

Meal planning, Portion sizing, Food service institutions, Types of food service, Food service equipment, lay outs, designs, Principles of meal service and planning, Catering service management and Institutional food service.

Unit 10: Research Methodology and Biostatistics:

Research Methodology- Types of research, Types of research designs, Qualitative and quantitative research, applied research, Sampling methods, and Preparation of research proposal. Basic statistics- Measures of central tendencies, dispersion, Uses of graphs and tables, Software in statistical analysis, Probability, Types of errors in statistics, Tests of significance, and Sample Size.