SHREEMATI NATHIBAI DAMODAR THACKERSY

WOMEN'S UNIVERSITY

Pariksha Bhavan, Juhu Road, Santacruz (w), Mumbai – 400 049

Ph.D. Entrance Test (PET) 2021 – 22

Schedule of Entrance Test:

1. **Date of online Ph.D. Entrance Examination : 18th December, 2021**
2. **Commencement of filling online applications : 18th November, 2021**
3. **Last date of filling online applications : 08th December, 2021**
4. **Publication of result on the University website : 26th December, 2021**

IMMPORTANT NOTE:

The written test will consist of two parts : (i) Research Methodology (50 marks) and
(ii) Subject Specific (50 marks).
Total - 100 marks
Total – 100 Questions

- Duration & Timing of Entrance Exam – **MCQ Pattern**

Research Methodology : 50 marks – 11:00 a.m. to 01:00 p.m.

Subject Specific : 50 Marks - 02:00 p.m. to 04:00 p.m.

All questions shall be with multiple choices, each correct answer carries 1 mark. No negative marking system.

Standard of passing –
General Category – 50% marks
Reserved Category – 45% marks

Candidate shall be admitted to Ph.D. Programme by two stage process through –

a) Entrance Examination, which shall be qualifying test. The Entrance Examination will be of 100 marks with multiple choice type questions.

b) Personal Interview of candidate s who qualifies in Entrance Test/ Candidates exempted from
Entrance Examination to be conducted as per procedure prescribed in due course.

PET EXAM SYLLABUS FOR FOOD SCIENCE AND NUTRITION

Subject Specific Test -

- Nutritional biochemistry
- Macronutrients
- Food Microbiology and Food Safety
- Instrumentation and Methods of Investigation
- Food Science and Chemistry
- Vitamins and Minerals
- Food Safety and Quality Control
- Maternal and Child Nutrition
- Nutrition in Society
- Recent methods in food processing and Preservation and packaging
- Public nutrition and health
- Medical Nutrition Therapy
- Pathophysiology and Metabolism in Disease

Nutritional biochemistry

Membrane structure, composition and Transport of metabolites across membranes, Acid base balance and its regulation, Enzymes, Cell Signalling, carbohydrate and protein metabolism, Metabolism of Lipids, Intermediary Metabolism, Biological Oxidation, Biochemical aspects of purine and pyrimidines, Biochemistry of Nucleic Acids, Protein Biosynthesis, Metabolism of purines,

Macronutrients

Human Nutritional Requirements, Body Composition, Energy, Carbohydrates, Proteins, lipids.

Food Microbiology and Food Safety

Micro-organisms and food, Factors affecting the survival and growth of microorganisms in food, Food Preservation and application to different types of foods, Microbiological examination-Methods of Isolation and detection of microorganisms or their products in food, Spoilage of different groups of foods, Food borne infections and diseases, Quality Control/Quality Assurance.

Instrumentation and Methods of Investigation

Electrolytic dissociation – Acids, bases, salts, buffers, Hendersen- Hasselbach equation, Acid and Alkalis, Buffers, Basics of Instrumentation, Separation Techniques, Viscosity and Consistency Measurements of Food.

Food Science and Chemistry

Water, Ice and Food Dispersions, Carbohydrates: Polysaccharides, Sugars and Sweeteners, Chemistry of Amino acids, peptides, proteins and Science of Protein, Enzymes, Milk and

Milk Products, Meat and Poultry, Eggs, Fish and Sea Food, Pulses and Legumes, Lipids: Fats, Oils and Related Products, Nuts and Oilseeds, Fruits , Vegetables and Processed Products.

Vitamins and Minerals

Fat Soluble Vitamins, Water Soluble Vitamins, Quasi vitamins, Macrominerals, Macrominerals, Ultra Trace Elements.

Food Safety and Quality Control

Quality Assurance Programme, Product Evaluation: Water including mineral water, Cereals and cereal products, Pulses and legumes, Flesh foods, Milk and milk products, Ice creams and sherbets, Confectionery, Fats and oils including butter, ghee and hydrogenated fat, Fried snacks and high fat foods, Spices and condiments and salt, pickles, sauces and chutneys.

Maternal and Child Nutrition

Importance of Maternal Nutrition during Pregnancy, Lactation and Infant feeding, Feeding of infants and children and dietary management, key issues in infant Feeding, Infant physiology and the preterm and LBW infants: Implications for feeding and management.Growth and development during infancy, childhood and adolescence. Malnutrition in mothers and children: etiology and management (in brief), Consequences of malnutrition on physical development, mental development, cognitive development. Effect of deficiencies of specific nutrients Current Nutrition and Health Status of Women and Children in India. Policies and programmes for promoting maternal and child nutrition & health. International, national and state level Concept of small family, methods of family planning, merits and demerits.

Nutrition in Society

Food supplementation, Nutrient supplementation, Fortification and enrichment, Food-based approaches, dietary diversification, IEC, Appraisal of existing programmes: Planning and implementation of an intervention programme, Situation analysis and needs identification, Intervention planning and intervention, Plan for monitoring and evaluation.

Recent methods in food processing and Preservation and packaging

Food processing and post-harvest handling of foods of plant and animal origin. Physical and Chemical Principles of Food Processing, Properties of Foods: Physical, thermal, heat transfer, water activity and electrical diffusion, surface, optical and sensory. Reduction in water content and water activity by various methods, Physical Methods, Chemical Methods and Hurdle Technology, Packaging, its significance, classification, unit.

Medical Nutrition Therapy

Nutritional (and dietary) Care Process, Delivery of Nutritional Support – Meeting nutritional needs, Nutrition for weight management, Medical Nutrition therapy for Upper Gastrointestinal tract, Diseases /Disorders and Diseases of the Hepato – Biliary Tract.

Pathophysiology and Metabolism in Disease

Basic concepts of pathophysiology and metabolism of adaptation, Cellular Proliferation and Cancer, Endocrine System, Digestive system: Biochemistry and Pathophysiology, Renal and Urological Biochemistry and Pathophysiology, Alterations of Haematologic functions, Cardiovascular, lymphatic and pulmonary system.

Public nutrition and health

Concept of public nutrition, Primary Health Care of the Community, Population Dynamics, Food and Nutrition Security, Nutritional Status, Major Nutritional Problems

Note : All the syllabus as mentioned under UGC for NET is also included.