



**Department of Home Science
University of Calcutta
Admission Notice for Ph.D. Programme in Home Science 2016**

Applications are invited for:-

- i) 9 vacancies in Home Science (Food and Nutrition) stream
 - ii) 3 vacancies in Home Science (Human Development) stream
- under Department of Home Science, University of Calcutta

Eligibility Criteria:

- i) For Ph.D. in Food and Nutrition - M.Sc. in Food and Nutrition or equivalent degree from a recognized university with minimum 55% marks in M.Sc. for General candidates and minimum 50% marks in M.Sc. for SC/ST/OBC/Physically Handicapped candidates.
- ii) For Ph.D. in Human Development - M.A. /M.Sc. in Human Development or equivalent degree from a recognized university with minimum 55% marks in M.A. /M.Sc. for General candidates and minimum 50% marks in M.A. / M.Sc. for SC/ST/OBC/Physically Handicapped candidates.
- iii) Reservation in admission shall strictly abide by the West Bengal State Higher Educational Institutions (Reservation in Admission) Rules, 2013.

Admission test for Ph.D. programme in Home Science will be of 50 marks. The medium of writing answers for the admission test is English.

For Food and Nutrition

Type of questions	Marks per question	No. of questions	Total marks
MCQ	1	50	50

For Human Development

Type of questions	Marks per question	No. of questions	Total marks for each type of question
MCQ	1	30	30
Essay type	10	2	20
		Total	50

Candidates are requested to download the application form from the university website (<http://www.caluniv.ac.in/>) and to submit the filled-in form with photocopies of all relevant testimonials within **20th Jun 2016 (Monday)** at the **Department of Home Science, University of Calcutta, Viharilal College Campus, 20 B Judges' Court Road, Alipore, Kolkata 700027.**

Date of publication of lists of candidates eligible for admission test: **24th June 2016 (Friday)**. The list will be displayed on the departmental notice-board.

Date of admission test: **Tuesday, the 12th July 2016 (12 Noon-1P.M.)**. The test will be held at the Department of Home Science, University of Calcutta.

Date of publication of lists of candidates eligible for interview: **19th July 2016 (Tuesday)**. The list will be displayed on the departmental notice-board.

Date of interview: **26th July 2016 (Tuesday)**. Interview will be held at the Department of Home Science, University of Calcutta.

Final list of selected candidates will be displayed on the departmental notice-board.

Syllabus for Ph.D Entrance Examination 2016 in Home Science (Food and Nutrition)

Topic 1: Nutrition:

1. The nutritional role of different nutrients, their requirements.
2. Deficiency and excesses of different nutrients.
3. Meaning of probiotics, prebiotics, nutraceuticals, organic food, GM food.
4. Impact of good nutrition on the outcome of pregnancy.
5. Diet during pregnancy and lactation.
6. Breast feeding vs. artificial feeding.
7. Nutritional problems of preschoolers.
8. Meal pattern and nutritional requirements of different age groups in the life cycle.
9. Nutrition, immunity and infection – mechanism of interaction, agent, host environment in disease occurrence, meaning of epidemiology.
10. Meaning of community, community nutrition, vital statistics and demography.
11. Malnutrition – causes, measures to combat malnutrition: different intervention programmes.
12. Nutrition for national development and economic improvement.
13. General idea of nutrition education, programme planning, nutrition surveillance, objectives and elements involved in the extension education process

14. Meaning, purpose and principle of therapeutic diet.
15. Basic concept and methods of a) oral feeding, b) tube feeding, c) intravenous feeding and d) enteral nutrition.
16. Diet in surgical conditions, burns, thalassemia, starvation, anaemia.
17. Etiology, pathology, metabolic changes, clinical manifestations and dietary management of the following diseases: a) gastritis, b) constipation, c) diarrhoea, d) liver and gall bladder disorders, e) renal disorder, f) cardiovascular disorder, g) metabolic disorders-obesity, gout, diabetes mellitus, and inborn error of metabolism, h) allergy and i) tuberculosis.

Topic 2: Food Chemistry

- i) Carbohydrate, protein and fat.
- ii) Purine, pyrimidine, nucleic acid.
- iii) Food analysis.
- iv) Knowledge of food commodities.
- v) Food preservation-different methods, food adulteration.
- vi) Fat soluble vitamins
- vii) Chromatography
- viii) Colloids

- ix) Principles of instrumentation of electron microscope, spectrophotometer and electrophoresis apparatus
- x) Application of fermentation
- xi) Physiochemical changes in food.

Topic 3: Nutritional Biochemistry

- i) Metabolism of carbohydrate, energy generation.
- ii) Regulation of carbohydrate metabolism.
- iii) Role of carbohydrate metabolism to maintain normal blood glucose level.
- iv) Coenzyme functions of water soluble B vitamins.
- v) Synthesis of unsaturated fatty acid with special mention to Arachidonic acid. Breakdown of odd carbon fatty acid.
- vi) Cholesterol biosynthesis and its regulation.
- vii) Structure of DNA, RNA S and protein synthesis.

Topic 4: Physiology

- i) Current findings on structure and functions of the ultra microscopic organelles of animal cell. Transport of molecules through biological membrane. DNA replication and transcription, protein translation.
- ii) Structure and function of digestive system, composition, function and secretion of digestive juices-mechanism of secretion of HCl. Digestion and absorption of different nutrients. Role of liver, gall bladder, pancreas in connection of digestion and absorption, neuroendocrine control of hunger and appetite, obesity. Nutrient sensing, Phytochemicals in regulation of gene transcription.
- iii) Endocrinology-GI hormones, pancreatic hormones, reproductive hormones.
- iv) Blood cell; cardiovascular system.

Syllabus for Ph.D Entrance Examination 2016 in Home Science (Human Development)

Topic 1: Theories of Human Development

- i) Bowlby's theory of attachment.
- ii) Freud's psychoanalytic theory.
- iii) Piaget's theory of cognitive development.
- iv) Erikson's psychosocial theory
- v) Theory of learning by Pavlov

Topic 2: Lifespan Development (Conception through Old Age)

- i) Hereditary basis of human development.
- ii) Hazards during different stages of prenatal development; roles of teratogens.
- iii) Perinatal period - overview of birth process; types of birth
- iv) Infancy-physical and social development.
- v) Early childhood- physical, linguistic and social development.
- vi) Middle childhood – gender roles and cultural influences
- vii) Adolescence- issues of identity; vocational interests.
- viii) Adulthood- professional and marital adjustment; gender differences in work and career development; intergeneration relationships; retirement from work.
- ix) Old age- stages of old age; attitudes towards ageing and dying; coping with bereavement.

Topic 3: Family Welfare and Women's Studies

- i) Types of welfare programmes for women, children and families.
- ii) Women's studies – meaning, basic concepts and significance. Millennium Development Goals.
- iii) Theoretical approaches to feminism – liberal, radical, post-modernist and psychoanalytical.
- iv) Problems and issues related to women in India – female foeticide, female infanticide, child marriage, trafficking of women, domestic violence.
- v) Important legislation for women's welfare – maternity benefit scheme, pension schemes for widows, rights of women.

Topic 4: Research Methodology

- i) Selection of Research Problem – formulation of hypothesis and basic assumptions.
- ii) Research design – definition, principles, purposes and models.
- iii) Sampling – definitions of population and sample, types and selection of samples, evaluating a sample.
- iv) Analysis and interpretation of data – guidelines for presentation of data in the forms of tables, graphs and illustrations

Topic 5: Persons with Disabilities

- i) Approaches to defining and understanding disability – philanthropic, medical, administrative, legal and social.
- ii) Philosophy of inclusion – modification of physical and social environment; use of assistive devices.
- iii) Speech and language disorders – definition, classification, causes and remedies.
- iv) Persons with multiple disabilities – symptoms, causes, identification, management and rehabilitation with regard to Autism Spectrum Disorders, Cerebral Palsy, Multiple Sclerosis and Epilepsy.