

Syllabus for Ph. D. Entrance Exam- (Home Science)

Paper I : Foods and Nutrition

Unit I Food Science

- Introduction to food science – evolution of food industry and allied industries.
- Understanding food groups for balanced diet, structure and composition, nutritive value processing techniques of cereals, pulses and legumes, fruits and vegetables, nuts and oil seeds, milk and milk products, egg, meat and fish.
- Sugar, spices and condiments
- Processed foods: Jams, jellies, squashes, pickles
- Beverages – Coffee, tea, cocoa, carbonated and non carbonated, alcoholic beverages
- Food additives, food colour, emulsifiers, stabilizers and flavors
- Leavened products
- Food fortification, enrichment and supplements
- Sensory evaluation of food products
- Food spoilage and food poisoning- Spoilage caused by micro-organisms, enzymes, pests and rodents
- Principles of food preservation- food dehydration, heat preservation, cold preservation
- Food irradiation and microwave heating
- Fermentation and fermented foods

Unit II

Human Nutrition and Dietetics

- Nutrients in foods: Their function, requirements and sources, digestion absorption and utilization of nutrients. Effect of low and excess intake of nutrients on human body, B.M.R.
- Recommended dietary allowances and nutrition for different age sex and activities
- Methods of assessment of nutritional status
- History of dietetics, effect of illness on food acceptance, role of dietician, dietetic counseling
- Therapeutic modification of normal diet, food exchange lists, special feeding methods
- Causes, symptoms and principles of dietetic management of
 - Fevers
 - Peptic ulcer
 - Gastritis, diarrhea, constipation
 - Jaundice
 - Hepatitis
 - Cardiovascular disease
 - Nephritis and renal disorders
 - Gout
 - Arthritis
 - Diabetes mellitus
 - Obesity
 - Under weight, (PCM)
 - Cancer

- Diet in surgery, burns, injury and allergy
- Nutritional management of eating disorders- Anorexia Nervosa, Bulimia, Binge eating

Unit III Community Nutrition

- National and international agencies and various programmes dealing with nutrition of community in India
- Nutritional education- Rationale, planning, execution and evaluation
- Food security : Food distribution system, PDS, FCI
- Magnitude of nutritional problems in India: Major deficiency disorders- PEM, Vitamin A deficiency, endemic goiter, fluorosis etc.
- Concept of health, vital statistics and demographic indicators
- Community nutrition as a field: public health nutrition, goals of nutrition programme, dietary guidelines, present trends and focus on community nutrition, methods of assessing nutritional status
- National food and nutrition policy, plan of action and programmes
- Primary health care- concept and organization, current status of health care system in India
- Nutrition and infection

Unit IV Nutrition during life span

- Nutrition in infancy- growth and development, nutritional requirements, feeding pattern, weaning practices, weaning and supplementary foods
- Pre-School age- growth and development, nutritional requirements, special care in feeding them, nutritional problems of this age
- School age and adolescents- growth and development, nutritional requirements, nutritional problems
- Young adults- nutritional requirements, nutritional status of India adult population, nutritional problems common to this age
- Elderly- nutritional requirements, special needs, nutritional problems
- Pregnancy- Physiological adjustments, nutritional requirements, nutritional status of India pregnant women, effect of malnutrition on outcomes of pregnancy
- Lactation- Physiology of lactation, factors affecting lactation, nutritional requirements

Paper II : Clothing and Textile

Unit I Textile Science

- Natural fibers: Physical and chemical properties and fabric manufacture
- Man made fibers: Physical and chemical properties and fabric manufacture

- Blends and mixtures, yarn classification, spun yarns, filament yarns
- Labels and their classification
- Identification of fibers
- Laundering of textiles
- Soaps and detergents, bleaches, whitening agents and blues
- Hard and soft-water
- Care and storage of textiles

Unit II Fabric Formation and Finishes

- Method of fabric formation
 - Basic weaves, non woven fabric construction, knitted fabrics
 - Looms
 - Special finishes – bleaching, scouring, degumming, carbonizing, mercerizing, sanforzing, beetling, creping, glazing, calendaring, flocking, napping, tentering, shearing
- Functional finishes – water proof and water repellent finish, soil repellent finish, shrinkage control, wrinkle resistance, flame retardant finish, mildew proof, rot proof, moth proof, antistatic and antibacterial finish
- Adding colour textile: Natural and synthetic dyes
- Classification of dyes, dyeing techniques
- Textile and environment
- Printing techniques

Unit III

Apparel Designing and Historic Textiles

- Sources of inspiration for apparel designing
- Techniques of pattern making
- Drafting their applications and limitation in clothing construction
- Psychological and sociological influence of dress
- Basic principles of construction of garments for different age
- Clothing – origin and reasons
- Costumes in ancient Indian civilization
- Indian embroideries

Paper III : Human Development

Unit I Life Span Development I

- Prenatal development stages – Genetic and environmental factors, critical influences, birth process
- Infancy (Birth to 2 years)
 - Physiological, cognitive, social, physical emotional, language, motor development
 - Early environment and its importance
 - Child rearing practices
- Early childhood years – Physical, motor, social, emotional cognitive and language development

- Middle childhood – Physical and motor development, language and intellectual development, growth trends emotional, social and moral development
- The function of family, school and community in growth of children

Unit II Life Span Development II

- Adolescence – Physical and social changes development of emotional maturity, personal and vocational interest, problems of this stage
- Early and middle adulthood – Meaning, development of self, physical, intellectual and personality development
- Old age – Older adults, characteristics physical, cognitive and personality changes attitude towards life, psychological changes, special needs of elderly

Unit III Theories of Human Development

- Theories of human development
- Learning theories
- Personality
- Mental development – Meaning, components, assessment, significance and types of mental tests
- Exceptional children
- Family relationship
- Juvenile delinquency

- Mental hygiene

Unit IV Aspects of Human Development

- Concept of human development, human development index, human development indicators
- Millennium development goals and human development
- Human development in India and human rights
- Education and development, education and social change. Population and education. Educational profile of India
- Elementary school and higher education in India
- National policies for education, National curriculum frame work, NCERT 2005, DPEP, Right to education 2010 & MDM
- Social empowerment- education, health, nutrition, drinking water and sanitation
- Self help groups, women in agriculture, women and industry support services
- Legal empowerment- legal literacy on personal and family laws, role of family court and legal aid center
- Support system- role and functions of department of women and child development, central social welfare board, state social welfare boards, National commission for women
- Programmes for women and child development

Paper IV : Family Resource Management

Unit I Theory of Management

- History of home management

- Ends sought through management

Goals – factors affecting, end

Values – sources of values, patterns, status security

Standards

- Management as a system
- Management abilities
- Decision making – Meaning, types, modes and techniques and tools for decision making
- Management functions and process
- Planning organizing, guiding, controlling evaluation

Unit II Family Economics

- Importance and relationship of economics to resource management
- Consumption functions and consumption pattern of families, elements of market, theory of consumer behaviour – central problem of choice and utility, solution, law of diminishing and marginal utility and law of equi-marginal utility
- Planning of expenditure (account keeping and marketing – types), functions, importance and market devices – labels, packing, guarantee and brands
- Techniques of financial assessment budgeting taxes, saving and insurance
- Consumer behaviour

- Consumer protection government, public and private protection, role of consumer education, standardization of consumer goods and testing methods

Unit III Housing

- Requirement of housing, history of housing, changes in housing need and standards
- present housing condition in India
- Housing in India as effected by various trends
- Solving India's housing problems
- Factors affecting housing
- Approaches to housing
- Housing schemes and agencies, rent control policies
- Housing standards and housing legislation
- Technical aspects of house design with reference to principles of planning
- Residential architectural design for various life styles
- Cost of housing design- estimating and costing in relation to land price and construction, factors influencing cost, sources of financial assistant
- Analysis of housing design- analysis of plans, material and construction techniques, study of different housing designs

- Housing research- agencies for research and development, methods and techniques
- Graphic representation of interiors and floor plans

Paper V : Home Science Extension Education

Unit I Extension Education System

- History, philosophy, objectives, concepts, contribution, principles, development of extension, Extension education: meaning, process and principal of learning in extension
- Formal and non formal education, principles, significance, steps and types of program planning and evaluation
- Community development programmes in India
- Review of different rural development programme- IRDP, TRYSEM, JRY, NREGA, PMRY, SRY, SGSY
- Institutions for child and women development- WHO, UNICEF, UNESCO etc
- Support structures and their functions – Panchayats, panchayati raj institution, central social welfare boards, state social welfare boards, national level voluntary agencies, CAPART etc.

Unit II Communication Technologies in Extension

Types of communication systems – concept, functions and significance

- Interpersonal, characteristics and scope of mass communication

- Mass communication – Elements, characteristics, models, theories, scope and challenges
- Traditional and modern methods of communication
- Media systems: Trends and techniques, concepts, scope, relevance of media in society functions, reach and influence of media
- Participatory rural appraisal PRA and RRA techniques
- Elements of diffusion of innovation and decision making process

Unit III Research Methods and Statistics

- Research in home science concept, need and approaches
- Types of research: Historical, survey, experimental and case study
- Definition and identification of research problems, hypothesis, basic assumption and limitation of research problem
- Sampling: Types and selection of samples
- Data collection and processing methods
- Role of statistics in research – elementary statistics, classification and tabulation and frequency distribution of data, mean, median, mode, probability
- Use of computer for analysis of data