



## **Part A : Research Methodology and Statistics**

### **UNIT I**

Scientific Approach to Research: Meaning, significance, types of research studies. Research Process: Formulating the problem, objectives, hypothesis, Experimental design, sample design, collecting data: observation, interview, questionnaire, case study, focus group discussion, analysis of data, interpretation, Report writing, Nutritional/Food Surveillance.

### **UNIT II**

Sampling design: Census vs. sample survey. Steps, types. Scaling techniques: Continuum, Reliability, Validity, Scale construction techniques. Experimental designs: Randomized Block design. Processing of data: Development of code book.

### **UNIT III**

Measurements: Nature of measurements, types of measurement scale, Frequency distribution, graphical presentation of data. Measures of Central Tendency: Computation of mean, median and mode, their uses. Measures of variability: Computation of mean deviations, Quartile deviation and standard deviation, their uses.

### **UNIT IV**

Correlation: Regression, Meaning, Spearman and Pearson's techniques of correlation, Linear regression. Chi Square.

### **UNIT V**

Tests of significance of difference between means: t-test. Analysis of Variance (ANOVA): One way and two ways. Applications to food quality assessments, Multivariate statistics: MANOVA, Non-parametric statistics. Uses and merits. Statistical packages.



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**Syllabus of Home Science Research Entrance Test 2023-24**

**Part B: Psychology**

**UNIT-I : FOOD SCIENCE AND FOOD SERVICE MANAGEMENT** - Food science and nutrition. Properties of food – physical and chemical properties, Quality evaluation of foods- objectives and subjective. Effects of cooking and processing techniques on nutritional components and other physical parameters, food preservation and application. Food pigments and additives. Food standards, microbiological safety of food, HACCP, food packaging. Perspectives of food service-menu planning, food cost analysis. New product development - nano technology. Food service management of institutional level-hospital, educational institutions, social and special institutions.

**UNIT-II : NUTRITION AND DIETETICS** - Food groups – balanced diet, food pyramid, macro and micro nutrition. Nutrients-role of nutrients in the body, nutrient deficiencies and requirements for Indians. Public health nutrition, Nutrition through life span-physiological changes, growth and development from conception to adolescence, nutritional needs and dietary guidelines for adequate nutrition through life cycle, nutrition concerns. Community nutrition, sports nutrition, nutrition in emergencies and disasters. Nutritional assessment-methods and techniques. Nutritional intervention-national nutrition policies and programmes, food and nutrition security. Clinical and therapeutic nutrition. Diet counseling and management.

**Unit-III : TEXTILES-** Textile terminologies- fibre, yarn, weave, fabric etc., classification of fibers, yarns and weaves, Identification of fibres and weaves. Manufacturing process of major natural and manmade fibres, properties and their end uses. Different methods of fabric construction-woven, knitted and non woven fabrics, their properties and end uses. Textiles finishes-classification, processing and purposes of finishes. Dyeing and printing-classification, method of block printing, tie and dye, batik, roller printing, screen printing, discharge, heat transfer printing and digitized printing. Traditional textiles of India-embroidered textiles, printed textiles, woven textiles, dyed textiles of various regions in India. Identification on the basis of fibre content, technique, motif, colour and designed. Textile Testing and quality control-need of testing, sampling method, techniques of testing fibres, yarn, fabrics and garments. Testing of colour-fastness, shrinkage, pilling and GSM of fabrics. Textile and environment-banned dyes,

eco-friendly textiles, contamination and effluent treatment, Eco-label and eco marks. Recent developments in textiles and apparels- nano textiles, technical textiles, occupational clothing, zero waste designing, up cycling and recycling.

**UNIT-IV : APPAREL DESIGNING-** Body measurements-procedure, need, figure types and anthropometry. Equipments and tools used for manufacturing garments-advancements and attachments used for sewing machine. Types of machines used and their parts. Elements and principles of design and its application to apparel. Illustrations and parts of garments. Fashion-Terminologies, fashion cycle, fashion theories, fashion adoption, fashion forecasting and factors affecting fashion. Pattern making-drafting, draping and flat pattern making techniques, pattern alteration and dart manipulation techniques. Apparel manufacturing-terminology used, seams, techniques and machines used, process of fabric to apparel manufacture. Apparel Quality testing-Quality standards and specification, Quality parameters and defects of fabrics and garments. Care and maintenance of clothing-principles of washing, laundry agents, storage techniques case labels and symbols. Selection of clothing for different age groups. Selection of fabrics for different and uses.

**UNIT-V : RESOURCE MANAGEMENT AND CONSUMER ISSUES-** Management-concept, approaches, management of time, energy, money, space, motivating factors, motivation theories, decision making. Functions of management-planning, supervision, controlling, organizing, evaluation, family life cycle-stages, availability and use of resources. Resources-classification, characteristics, factors affecting use, resource conservation, time management, work simplification techniques, classes of change, fatigue and its management. Management of natural resources-land, forest, water, air, water harvesting, municipal solid waste management, concept of sustainable development, SDGs. Money management-family income, types, supplementation, budgeting, household accounts, family savings and investment, tax implications. Human resource management- functions, need, human resource developmentchallenges, functions, manpower planning, training need assessment, training methodologies, training evaluation. Consumer-definition, role, rights and responsibilities, consumer behavior, consumer problems, education and empowerment. Consumer protection-consumer organization, cooperatives, alternative redressal, standardization, standard marks, quality control, buying aids, consumer legislation. Entrepreneurship-concept, process, barriers, entrepreneurial motivation, challenges, enterprise setting, project planning and appraisal, enterprise management.

**UNIT-VI : HOUSING AND INTERIOR DESIGN-** Design fundamentals – elements of art, principles of design, principles of composition. Colour - dimensions of colour, psychological effects of colour, colour schemes, factors affecting use of colour. Space planning and design-housing need and important, principles of planning spaces, types of house plans, economy in construction, planning for different income groups. Building regulations-norms and standards, zoning, housing for special groups and areas, housing finance. Housing and environment-building materials- impact on environment, green rating systems, energy efficiency in buildings,

energy auditing, indices of indoor comfort. Energy as a resource- conventional and non-conventional sources, renewable /nonrenewable energy, energy management, national efforts on energy conservation. Product design - design thinking process, diffusion and innovation, design communication, ergonomic considerations. Ergonomics - significance, scope, anthropometry, man, machine, environment relationship, factors affecting physiological cost of work, body mechanics, functional design of work place, time and motion study, energy studies. Furniture and furnishing - historical perspectives, architectural styles, contemporary trends, wall finishes, window and window treatments.

**UNIT-VII : CHILD/HUMAN DEVELOPMENT-** Principles of growth and development, care during pregnancy and pre-natal and neonatal development. Theories of human development and behavior. Early childhood care and education – activities to promote holistic development. Influence of family, peers, school, community and culture on personality development. Children and persons with special needs, care and support, special education, prevention of disabilities, rehabilitation. Children at risk-child labour, street children, children of destitute, orphans, child abuse and trafficking. Adolescence and youth: changes, challenges and programs to promote optimal development. Adulthood, characteristics, changing roles and responsibilities in early and middle adulthood. Aging-physical and psychological changes and care needs.

**UNIT-VIII : FAMILY STUDIES** -Dynamics of marriage and family relationships. Family welfare-approaches, programmes and challenges, role in national development. Domestic violence, marital disharmony, conflict, resolution of conflict. Parent education, positive parenting, community education. Family disorganization, single parent families. Family studies-family in crisis, family therapy, initiatives for child development. Human rights, rights of children, rights of women, status of women, gender roles. Guidance and counseling- across life span and for care givers. Health and well being across life span development.

**UNIT-IX : COMMUNICATION FOR DEVELOPMENT-** Basics of communication- nature, characteristics, functions, process, models, elements, principles, barriers, perception, persuasion and empathy, types of communication, levels (settings) of communication transactions, process of listening. Communication systems and communication theories- human interaction theories, mass communication theories, message design theories, communication systems, culture and communication. Concept of development- theories, models, measurement and indicators of development. Concept of development- communication models and approaches, diffusion and innovation, mass media, social marketing. Role of communication in development- need and importance, development journalism, writing for development-print, radio, television and internet. Concerns of development communication- gender, health, environment, sustainability, human rights, population, literacy, rural and tribal development. Advocacy and behavior change communication- concept, theories, models, approaches, application and challenges. Traditional, modern and new media for development - folk forms of songs, art, dance, theatre, puppetry, advertisement, cinema, ICTs for development-community radio, participatory video, social

media and mobile phones. Organisation/agencies/institutes working for development communication international/national/state and local.

**UNIT-X : EXTENSION MANAGEMENT AND COMMUNITY DEVELOPMENT-**

Historical perspectives of extension–genesis of extension education and extension systems in India and other countries, objectives of extension education and extension service, philosophy and principles of extension programme development. Programme management- need assessment, situation analysis, planning, organization, implementation, monitoring and evaluation. Extension methods and materials- interpersonal, small and large group methods, audiovisual aids-need, importance, planning, classification, preparation and field testing, use and evaluation of audio-visual materials. Curriculum development and planning for extension education and development activities, Bloom’s taxonomy of educational objectives and learning. Non-Formal, adult and lifelong education-historical perspectives, concept, theories, approaches, scope, methods and materials used, challenges of implementation and evaluation, issues to be addressed. Training, skill development and capacity building for human resource development methods of training, entrepreneurship development. Community development-perspectives, approaches, community organization, leadership, support structures for community development, Panchyati raj institutions, NGOs and community based organisations. People’s participation and stakeholders’ perspectives, Participatory Learning and Action-methods and techniques. Development programmes in India for urban, rural and tribal population groups programmes for nutrition, health, education, wage and self employment, women’s development, skill development, sanitation and infrastructure.