

**B.Sc. II Year  
Home Science 2015**

**HD - I  
Growth & Development: Prenatal and Infancy  
Paper- I**

M. M. : 50  
3 p/w

**Unit – 1**

1. Anatomy and physiology of male and female reproductive organs- Ovulation and sperm formation.
2. Fertilization, menarche and menopause.
3. Signs and symptoms of pregnancy.
4. Common ailments during pregnancy and their managements.

**Unit – 2**

1. Prenatal period- stages in prenatal development: zygote, embryo and fetus.
2. Teretogens: factors affecting prenatal growth and development.
3. Disorders in pregnancy: Hypertensive preeclampsia, elcampsia, pernicious vomiting.
4. Regular medical checkups: importance and schedule.

**Unit – 3**

1. Care of expectant mother.
2. Preparation for confinement and arrival of new born.
3. Delivery & birth process.
4. Intensive new born care and APGAR test.
5. Minor ailments of newborn and their management: colic, jaundice, napkin rash, umbilical infection, infection of eye and breast in new born.

**Unit – 4**

1. Care during puerperium.
2. Family planning methods including MTP and sterilization.
3. Abortion and miscarriage: symptoms and care, different types of abortion.
4. Child at birth: (i) Neonatal physique (ii) Sensory and motor reflexes (iii) Sleeping crying and emotional behaviour.

**Unit – 5**

1. Characteristics of human infant: from state of helplessness to gradual control over body and development of understanding of immediate environment.
2. Physical development during infancy weight, height, closure of fontanelle and teething.
3. Motor control: grasping, holding the head, seating, crawling, creeping and walking.
4. Socio emotional development during infancy: development of attachment and sense of security. Separation and stranger anxiety.

**H.D. - II  
Development Aspects: Infancy to Old Age  
Paper – II**

M. M. : 50

**Unit – 1**

1. Characteristics of physical and motor development: skeletal growth, growth monitoring, basic motor skills from preschool to late childhood.
2. Beginning of language development, sequence of speech development and factors influencing the development of language till late childhood. Relation between cognition and language.
3. Emotional development: Characteristics of emotions in childhood. Basic emotions and their developmental changes: fear, anger, jealous, affection and joy.
4. Social development, importance of peer group, during childhood. gang age

**Unit – 2**

1. Theory of socio emotional development: Erikson's theory and the eight stages (in brief).
2. Cognitive development: introduction to Piaget basic concepts and stages of cognitive development (in brief).
3. Development of morality (Kohlberg's stages) development of acquisition of gender identity and sex roles.
4. Introduction to Freud's theory of personality structure and stages

**Unit - 3 Adolescence.**

1. Early and Late Adolescence: Pubertal changes and Maturity, Physical and motor gains.
2. Development of Self-concept, Self Esteem, Values, Interests.
3. Characteristic of social Development, Relations with Peers, Friendship and Heterosexual Relationship.
4. Personal Adjustment with self, family and school. Period of storm & stress.
5. Juvenile delinquency: Causes and Prevention.

**Unit - 4 Adulthood**

1. Stages and characteristics of Adulthood: Young Adulthood (19-40 Yrs) Significance and responsibilities in context of work place and family.
2. Middle Adulthood (41 to 60 Years) Menopause and health Issues. Stresses at workplace and family.

**Unit – 5****Old Age**

- 1) Definition, Physical and intellectual changes.
  - 2) Retirement: effect on self, family and society.
- 1) 1) Issues: Old Age homes, Loneliness.
  - 2) Strategies for enhancing the quality of life of People of Age.
  - 3) Death Anxiety, Care for a dieing Person.

**Practical (HD)**

M.M – 30  
Internal – 10  
External – 20

1. Observation of a child in Nursery School for his developmental stage in following areas and preparing a report on it

- I. Physical- Height and Weight
- II. Motor skills, Handedness

- III. Emotional Development
  - IV. Play Activity
  - V. Group Play
  - VI. Language
  - VII. Social Development
  - VIII. Peculiar Behavior
2. Preparing interview Schedule for parents (to be used in Child study)
  3. Planning Activities for preschool Children for all areas of development
    - I. Demonstration by models of Delivery Process
    - II. Demonstration by models of Prenatal Stages
  4. Preparation of growth Enhancing material for infants
  5. Survey of Mother of Infants.
 

Note: students will go to different nursery schools to observe the child under the guidance of the teacher concerned till a laboratory nursery school is started in the department itself

Examination Scheme: Distribution of marks

1. Spotting – Identification & Description - 5
2. Preparing Activity Planning – 6
3. Preparing Interview Schedule for Parents/Growth enhancing material – 6
4. Viva – 3

## **HM - I**

### **Principles of Home Management**

### **Paper- III**

**Time – 3 Hrs.**  
**M.M. – 50**

#### **Unit I**

1. Introduction to Management
  - i. Concept & definition of management
  - ii. Communication in management
  - iii. Managerial function of families & management
2. Decision making in management
  - i. Types of steps in decision making
  - ii. Factors affecting in Decision making
3. System approach to the study of management
  - i. Definitions and characteristics

#### **Unit 2**

1. Factors motivating management:
  - a. Values- Classification and hierarchy, sources, origin characteristics, factors influencing values, changes values and their causes
  - b. Goal-types, Characteristics, factors influencing goals
  - c. Standards-conventional and modern, flexible and rigid
  - d. Needs and wants
2. Resources & their management in the family

- i. Introduction, definition & usefulness of resources
- ii. Differences among Resources
  - Quantitative resources
  - Qualitative resources
- iii. Classification of resources
  - Human versus Non human resources
  - Economic versus Non economic resources
- iv. Resources classified by their sources
  - Resources from the near & larger environment
  - Resources from the household environment
  - Resources located in the family system
- v. Resources as a system
  - Interrelated demands'
  - Substitution
  - Crucial resources
  - Conversion or creation
- vi. Family resources as a unit
- vii. Guidelines for the use of resources
  - Increase total supply of resources
  - Know alternate uses
  - Consider amounts of resources to invest
  - Increase utility per unit of resources
  - Expand appreciations'
  - Balance choice among resources

### Unit 3

1. Management of time as a resource
  - Characteristics & nature of time
  - Tools, time pattern & time cost. Norms, peak Loads, work units, work curves, rest periods.
  - Process of managing time  
Planning, Controlling & evaluating
2. Management of money as a resource
  - i. Definition & types of income & their sources
    - a. Money income
    - b. Real income
      - Direct income to include household production, Free goods & services, owned durable goods & social income.
      - Indirect income to include money income such as wages, salaries, interest, profit, rent & fringe benefits.
    - c. Psychic income
  - ii. Expenditure
    - Definition of expenditure
    - Factors affecting expenditure
  - iii. Taxation
    - Meaning objective of taxation

- Types of taxation, direct & indirect
- iv. Saving & investments

#### **Unit 4**

1. Management of energy as a resource
  - Household task and effort
  - Concept of the human cost of work-fatigue- causes, types, prevention
  - Cost of work-Human energy expenditure, oxygen consumption methods of measurement, other measures of cost of work
  - Body mechanics
  - Types of efforts-effects of working heights and storage in relation to anthropometry

#### **Unit 5** Work Simplification:

- Work Study techniques
- Mundel Classes of changes in household activities
- Factors affecting work-human and environmental
  - a. Human-worker's attitudes knowledge, skill, time, human energy
  - b. Environment-work space, fitness, climate, lighting equipment and service work, worker environment, relationship-co-ordination and fitness
- Postures –types of postures, maintenance of good postures in household activities
- Fatigue-types, avoidance of fatigue

## **Home Management - II**

### **Housing and Home Furnishing**

#### **Paper- IV**

**Time – 3 Hrs.**  
**M.M. – 50**

#### **Unit 1 :**

1. Housing :
  - a. Its functions, importance and types
  - b. Changes needs and housing problem
2. Features contributing to livability of house, orientation of accommodation, sanitation, neighborhood, lighting, Plumbing arrangements and practical conveniences

#### **Unit 2**

1. Land acquisition :
  - a. Types : purchase/inheritance
  - b. Selection of site
  - c. Legal implications
2.
  - a. Principles under lying house planning
  - b. Blue prints and floor plans
3. House layout (plinth/floor area)- Space distribution with reference to the activities performed viz. Bedroom, living room, kitchen, Verandah, dining room, toilet, storage and staircase etc.

#### **Unit 3:**

1. Building Components and Building materials :
  - a. Foundation
  - b. Wall's doors and windows
  - c. Roof, floor and other structures
  - d. Maintenance and repairs
2. Housing Finance:
  - a. Cost of building and house
  - b. Owning vs. renting
  - c. Financing agencies
  - d. Legal information

**Unit 4:**

1. Application of elements of art and principles of design in interior and exterior enrichment- Color theories, properties, color schemes, characteristics & effect in interior.
2. Furniture : Types, selection, care, use, arrangement and ease of furniture in different rooms

**Unit 5:**

1. Selection, use and care of furnishing material-Texture, Design, Color
  - a. Wall and its treatment
  - b. Window and treatment, upholstering
  - c. Other decorative and functional accessories
2. Lighting : Its type and use in different rooms for different activities
3. Table setting
  - a. Table lines
  - b. Table wares: Flat ware, hollow ware and silver wares
  - c. Rules for table setting Table setting for different occasions
  - d. Table manners and etiquettes

**REFERENCE BOOKS**

Paulena Nickel & Dorsey, Jean Muir: Management in Family Living  
 Mehta, Kamal: A Text Book of Home Economics  
 Devett & Verma: Modern Economic Theory  
 Varghese, M.A., Ogale, N.N. & Srinivasan, K.: Home Management  
 Gross & Crandle: Home Management  
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**HOME MANAGEMENT (PRACTICAL)**

M.M. : 30  
 Internal : 10  
 External : 20

1. Symbols for drawing floor Plan

2. Drawing of floor Plans of a house for different income groups keeping in view the principles, including orientation and zoning. Furniture cutout placement
3. Visit to house construction site for knowing about materials used in house construction
4. Colour wheel, Value chart and its use, colour planning with reference to possession, season, personality and availability for different rooms
5. Models and samples of window treatment
6. Varnishing, polishing and finishing of furniture and accessories
7. Table setting and napkin folding
8. Preparation of a creative article for household decoration
9. Picture mounting and framing
10. Work study techniques
11. Arranging Exhibition of all items made

**FOODS AND NUTRITION I**  
**Fundamentals of Nutrition**  
**Paper- V**

Time : 3 Hrs  
M.M. : 50  
Min.M. : 18

**Unit – I :**

1. Meaning of food, nutrition and nutritional care
2. Objectives in the study of Nutrition
3. Carbohydrates:
  - a. Composition
  - b. Classification, distribution and characteristics
  - c. Functions
  - d. Dietary allowance and food resources
  - e. Dietary fibers
4. Lipids
  - a. Composition, classification and characteristics
  - b. Functions of
    - i. Fats
    - ii. Essential fatty acids
    - iii. Phospholipids
    - iv. Cholesterol
  - c. Dietary allowance
  - d. Food sources
  - e. Dietary fat and health issues – obesity, Heart disease

**Unit – 2**

**Proteins and Amino Acid**

1. Composition, structure and classification (in brief)
2. Functions
3. Dietary Protein Requirements and Allowance- Nitrogen Balance, Factors affecting the Protein Requirement
4. Quality of food proteins

- a. Measurement of protein quality PER, Amino Score (Chemical Score), Biological Value, NPU
  - b. Improving Protein quality of Foods
5. Food Sources
  6. Protein deficiency

### **Unit – 3**

#### Energy Metabolisms

1. Introduction
2. Measurement : Kilocalories, Joules, Bomb calorimeter, Physiologic fuel Factors, Specific fuel Factors
3. Measurement of Energy Exchange of the Body; Direct and indirect calorimetry, Basal Metabolism test, Factors influencing the BMR
4. Factors influencing the Total Energy, Requirement
  - a. Muscular Activity
  - b. Mental Effort
  - c. Calor genic effect of food
  - d. Maintenance of body Temperature
  - e. Growth
5. Recommended allowances
6. Water

### **Unit – 4**

1. Mineral Elements: Basic concept- Distribution and Function, Factors Affecting Absorption and Utilization, Daily Allowance, food Sources, Deficiency and Excess
  - a. Calcium
  - b. Phosphorus
  - c. Iron
  - d. Iodine
  - e. Zinc
  - f. Fluoride
2. Electrolyte Balance

### **Unit – 5**

Vitamins – Introduction, Characteristics, Absorption, Storage and transport, functions, daily allowance, food sources, Retention of food values. Effect of deficiency and Excess of :

- a. Fat Soluble Vitamins A,D,E, & K
- b. Water soluble vitamins
- c. Ascorbic Acid
- d. B-Complex- Thiamin, Riboflavin, Niacin, Vit, B-6, Pantothenic Acid, Biotin, Vit. B-12, folacin

### **REFERENCE BOOKS**

Robinson, C.H.: Normal and Therapeutic Nutrition  
 Davidson and Passmore : Human Nutrition and Dietetics  
 Swaminathan, M : Essentials of food and Nutrition  
 Crause, M.V. : food Nutrition and Diet Theroy  
 Whitney and Harmiton: Understanding Nutrition  
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## FOODS AND NUTRITION II

### Bio – Chemistry

#### Paper- VI

Time : 3

Hrs

M.M. : 50

Min.M. : 18

#### Unit – 1

1. Importance and scope of bio-chemistry, relevance of study of bio-chemistry for nutrition students
2. Carbohydrates – Occurrence, composition, classification structures, properties and important bio-chemical reactions of monosaccharides
3. Lipids : Occurrence, classification, structures, physical and chemical properties: hydrolysis, saponification. Saponification on reactions of glycerol, Reactions of fats due to unsaturation-hydrogenation, halogenations, Iodine no. , rancidity of fats, Acid no. Phosphopids and cholesterol

**Unit – 2** Proteins- Amino Acids, peptides and proteins occurrence, structure, classification, Properties and colour reactions. The ninhydrin reaction, biuret reaction, xantho proteic reaction and Millions test, Denaturation of proteins, Nucleic acid-structure of nitrogenous bases, nucleosides DNA and RNA, role of nucleic acids in protein synthesis

**Unit – 3** : Vitamins – classification, Chemistry and physiological functions of :

1. Fat soluble vitamins – A, D, E & K
2. Water soluble Vitamins – B Complex : Thiamine, riboflavin, niacin, pyridoxine, panthothen C acid, Folic acid, Biotin B-12 and Vitamin-C (Ascorbic acid )

**Unit – 4** : Minerals-Specific bio-chemical functions and bio-availability of calcium phosphorus, magnesium, iron, copper, sodium, potassium, iodine, fluorine and zinc

- a. Enzymes – Definition, Chemical nature, classification, factors affecting rate of temperature, pH, enzyme and substrate concentration, Enzyme specificity and inhibition of enzyme activity
- b. Coenzymes and cofactors- definition and role

**Unit – 5** : Intermediary metabolism

Importance of intermediary metabolism- Metabolism of carbohydrate Glycolysis, Citric Acid Cycle Gluconeogenesis, Glycogen break down and synthesis (glycogenolysis, glycogenesis) Regulation of blood glucose level-lipid Metabolism-B oxidation of Fatty Acids, Ketogenesis, Cholesterol metabolism, Protein metabolism – Transamination, demination decarboxylation and entry of amino acids into citric acid cycle, urea cycle

#### REFERENCE BOOKS

West. E.S. and Todd, W.R. : Test book of Bio-chemistry

White, A, Handler, P. and Smith, E.L., “Principles of Bio-chemistry

Lehninger, A.L. : Bio-chemistry

Dr. Rama Rao : Text book of Bio-chemistry for Medical Students

**FOOD AND NUTRITION  
PRACTICAL  
(BIO-CHEMISTRY)**

**M.M- 30**  
Internal – 10  
External - 20  
**Time- 2p/w**

1. Qualitative testing of some foods for adulteration- Lead chromate in haldi powder, Sand in flour, Kreis test for rancidity of oils. Metal in yellow Arhar dal and in yellow sweets, starch in milk, Vanaspati in pure ghee and chalk powder in wheat flour
2. Qualitative analysis of mono, di and polysaccharides
3. Qualitative analysis of proteins
4. Qualitative analysis of fats and oils
5. Use and handling of different types of balances
6. The determination of pH range using different indicators
7. Estimation of lactose in milk
8. Estimation of total sugar in honey
9. Estimation of Protein in foods by Kjeldhal's method
10. Determination of acid value, Saponification value and iodine value of fats
11. Moisture content and ash content of food stuff
12. Microscopic structure of starch, rice, potato etc.
13. Estimation of vitamin C in fruits
14. Hemoglobin by Haemoglobino meter
15. Paper Hromatography

**CLOTHING AND TEXTILE - I  
Textile Fibers and Fabric Construction  
Paper- VII**

Time : 3 Hrs.  
M. M. : 50

**Unit - I**

Origin manufacture and properties of-

1. Natural cellulosic fibers – Colton, linen, jute
2. Natural pertain fibers – wool, silk
3. Natural mineral fibers

**Unit 2 :** Manmade and synthetic fibers – Polyesters, Polyamide, Acrylic fibers, Rayon, origin manufacture, Properties and their importance to consumers

**Unit 3 :** Yarns Construction and fabric construction

1. (a) (i) Mechanical Spinning

- (ii) Chemical Spinning
- (b) Classification of Yarns
- 2. (a) fabric construction techniques
  - (i) Felting
  - (ii) Braiding
  - (iii) Bonding
  - (iv) Knotting
  - (v) Knitting
  - (vi) Weaving
- 3. Types of weaves, analysis

**Unit 4 : Fabric Finishes :**

- a. Objectives of finishes
- b. Basic finishes- bleaching, sizing, singeing, tentering, beetling, calendaring and mercerization
- c. Texturing – Embossing, mélange, Scheinorining napping, flocking, acid and basic finishing

**Unit 5 : Functional Finishes**

- a. Finishing chemicals
- b. Antistatic bacteriostat, moth proofing, Anti shrinking
- c. Flame retardant, water repellency, water proofing, soil and stain resistant, crease resistant
- d. Wash “n” wear, Permanent Press, Fabric softening

**REFERENCE BOOKS**

Wingatic Iqabel M : Selection of Fabric and Care  
Joseph, Moyory : Essentials of Textiles  
Joseph, Moyory : Introductory Textiles Science  
Dantyagi, Sushila : fundamental of Textiles  
Duelkar Durga : Textile and Laundry Work  
Carbman, Poster : Fiber to Fabric

**CLOTHING AND TEXTILE - II**

**Textile Chemistry**

**Paper – VIII**

Time : 3 Hrs.

M. M. : 50

**Unit 1 :**

- a. History and classification of dyes, Selection of dyes and their application
- b. Dyeing of fibres, yarns, fabrics and blends
- c. Identifying dyeing defects, tests to determine colour fastness

**Unit 2:**

- a. Printing styles
- b. Requisites for printing and preparation of fabric

- c. Block printing, Roller printing , Screen printing , discharge printing
- d. Resist printing, photographic and transfer printing

**Unit 3 :**

- a. Effect of water hardness on laundry reagents, principles of laundering,
- b. Laundry equipments-scrubbing board, suction, washer, washing machine etc.
- c. Laundry reagents and their functions. Soaps and detergents, bleaches and optical brighteners, blues and stiffening agents, solvents and absorbents

**Unit 4 :**

- a. Classification of stains
- b. Stain removal- Methods and application of various reagents according to the types of fabric and stain
- c. Care and storage of laundered clothes

**Unit 5 :**

- a. Chemicals used in textile processing and their effect on ecology
- b. Eco friendly processing of textiles and substitutes for harmful chemicals and processes
- c. Application of enzyme in textiles
- d. Environmental protection and ISO series

**CLOTHING AND TEXTILE - PRACTICAL  
(TEXTILE AND LAUNDRY)**

Time : 3 Hrs.

M. M. :30

Internal : 10

External : 20

1. Family Wash ;
  - a. Stain removal : Simple home methods and use of chemical stain removers
  - b. Principles and methods of laundering , their applications to various fabrics
  - c. Process in finishing : Ironing process and steam pressing
  - d. Washing of Cotton, Wool Silk and Manmade fabrics
2. Fabric Study
  - a. Fibers : Identification- Microscopic, Physical and chemical test
  - b. Fabrics
    - i. Thread Count and balance
    - ii. Weave
  - c. Launderability
    - i. Dimensional Stability
    - ii. Colour Fastness
    - iii. Cleaning Efficiency of Detergents
3. Dry cleaning with special references to spotting and clearing
4. Dyeing and printing of fibers and using commercial dyes
  - a. Tie and Dye
  - b. Batik
  - c. Block Printing
  - d. Shade dyeing of Cotton and Wool yarn ,indirect mordant and reactive dyes

5. Visit to review textile mills and museums in India

**EXTENSION EDUCATION- I**  
**Teaching and Learning in Extension Education**  
**Paper – IX**

Time : 3 Hrs.  
M.M. : 50

**Unit- 1 Rural Sociology**

- a. Sociology and rural sociology
- b. Interrelationship between rural sociology and extension
- c. Characteristics of urban and rural people
- d. Rural and Urban community differences
- e. Characteristics of Rural Sociology-
  - (i) Social stratification- Function, Dysfunction, Basis for stratification and types
  - (ii) Value and Value System – Characteristics, Types classification and functions
  - (iii) Social Mobility- Types and Factor influencing Mobility
- f. Major problems in Rural area

**Unit : 2 Teaching and Learning Process**

- a) Concept of Learning, Elements & Principles involved in Learning
- b) Learning experiences
- c) Types of learning
- d) Adult learning- meaning, assumption, characteristics and conditions
- e) Concept , Definition, Factor Effecting Teaching
- f) Steps in Extension Teaching

**Unit-3 Effective Training**

1. Training- definition, Concept of co training, and features
2. Difference between education and training
3. Importance and features of training
4. Need Assessment before training
5. Process of training
6. Types and approach to training
7. Elements of good training
8. Training methods (elementary idea)
9. Experiential Learning cycle of Training
10. Training evaluation

**Unit : 4 Teaching Methods**

- a) Selection of Appropriate teaching Method,
- b) Importance and scope of Teaching Methods
- c) Classification of teaching Methods in Home Science Extension
- d) Advantage and Limitations of each method

- e) Factors affecting the Use and Selection of Teaching method
- f) Relative Effectiveness of teaching methods

**Unit : 5 Teaching Aids**

- a) Meaning and Definition of Teaching aid
- b) Selection of Audio Visual Aids
- c) Efficient Utilization of Audio Visual Aids
- d) Classification of Teaching aids:
  - i) Audio aids                      ii) Visual Aids                      iii) Audio Visual Aids
- c) Advantages and limitation of each type
- d) Cone of Experience

**PRACTICAL**

Time : 3 p/w  
 M.M. : 30  
 Internal- 10  
 External- 20

1. Preparation and Use of Selected Teaching aids in all areas of Home Science
2. Developing skill and use of different training methods- Role play, Demonstration and Panel Discussion
3. Practice of problem solving through case study method.

**Reference:-**

Chakrabarti : Audio Visual Education of India. Oxford Book Co. New Delhi,1967  
 Chandra Arivinda : Introduction to Home Science, Metro politan Book Co. Pvt. Ltd. New Delhi, 1978  
 C.S.Rayudu, Communication, Himalya Publishing House, Mumbai  
 Dale Edger : Audio Visual Aids, Holt, Rinehart and Winstion, London, 1964  
 Dhama, O.P. & Bhatnagar, O.P. : Education and Communication for Development, 1987  
 Devdas, Rajammal : Methods of Teaching Home Science, NCERT, New Delhi, 1978  
 Devdas, Rajammal P. :Text-Book of Home Science, I.C.A.R. Publication, New Delhi, 1959  
 Kidd : How Adults Learn, Association Press, New York, 1969  
 Lynton, R. & Pareek, U., Training Development, 1991,  
 Ray, G.L.Extension Communication and Management, 2006  
 Robhnson, S&P. : Exploring Puppetry, Mills & boom, London, 1967  
 Singh , R.P., Management of Training Programme, 2000. Anmol Publication  
 Williamson and Lyle, M. : Home Science Making Education for Adults, Appleton Century Crafts, New York, 1949  
 Supe, S.V. : An Introduction to Extension Education.