

**B.Sc. (HOME-SCIENCE) PART III
MARKING SCHEME**

| Group No. | Paper No. | Subject | Theory M. Mark | Practical M. Mark | Theory M. Mark | Practical M. Mark |
|------------|------------|--------------------------------------------|----------------|-------------------|----------------|-------------------|
| I | (A) | Foundation Course Hindi Language | 75 | | 26 | |
| | (B) | English Language | 75 | | 26 | |
| II | (A) | Nutritional Biochemistry | 50 | 25 | 33 | 09 |
| | (B) | Food Preservation | 50 | 25 | | 09 |
| III | (A) | Early Childhood Education | 50 | 25 | 33 | 09 |
| | (B) | Extension Education | 50 | 25 | | 09 |
| IV | (A) | Foundation of Art and Design | 50 | 25 | 33 | 09 |
| | (B) | Apparel Making & Fashion Designing | 50 | 25 | | 09 |

DISTRIBUTION OF MARKS IN VARIOUS PRACTICAL

| S.No. | Name of the Practical | Total Mark | Distribution | | | |
|-------|----------------------------|------------|--------------|------|-----------------------------------------|----------|
| | | | Sessi. | Viva | | Marks |
| 1 | Nutritional Biochemistry | 25 | 5 | 5 | Titration, Identification of CHO, Blood | 10 05 |
| 2 | Food Preservation | 25 | 5 | 5 | Preparation Presentation | 10 05 |
| 3 | Early Childhood Education | 25 | 5 | 5 | Preparation Teaching | 05 10 |
| 4 | Extension Education | 25 | 5 | 5 | Practical – (2) | 15 |
| 5 | Foundation of Art & Design | 25 | 5 | 5 | Practical – (2) | 15 |
| 6 | Apparel Making | 25 | 5 | - | Stitching or Designing | 10 |

B.Sc. (HOME-SCIENCE) PART- III
Group –II
Paper - A
NUTRITIONAL BIOCHEMISTRY

M. Marks: 50

THEORY

UNIT-I

- (A) Introduction to Biochemistry - definition, objectives, scope and interrelationship between Biochemistry and other biological sciences.
- (B) Carbohydrates - Definition, classifications functions and properties of
- Monosaccharides - Glucose, Fructose, Galactose
 - Disaccharides - Maltose, Lactose, Sucrose
 - Polysaccharides - Dextrin, Starch, Glycogen
- Glycolysis, Gluconeogenesis, Glycogenesis
Glycogenolysis, Citric acid Cycle.
Blood sugar regulation.

UNIT-II

- (A) Lipids – Definition, composition, importance and classification
Fatty acids - Functions, properties ,classification of MUFA and PUFA.
Significance of Acid value, Iodine value and saponification value.
Chemistry and function of Phospholipids, Glycolipids and sterols.
Metabolism - Beta Oxidation
- (B) Aspects of transport – Passive diffusion, Facilitated diffusion, Active transport

UNIT-III

- (A) Proteins - Definition composition function, and classification.
Amino acids - Essential and Nonessential
Metabolism - Urea cycle, Nitrogen balance, Amino acid pool
- (B) Enzymes - Definition, properties, classification, Mode of action of enzymes, factors affecting velocity of enzyme catalyzed reactions, coenzymes.

UNIT- IV

- (A) Harmones - Biological roles of harmones of Pituitary, Adrenal cortex and medull, Thyroid, Parathyroid, Pancreas, Sex glands.
- (B) Urine - Formation and Composition

UNIT-V

- (A) Blood – Blood composition & its Function, Blood Coagulation, Blood Groups
(B) Nucleic Acid and Nucleoproteins – Chemistry, composition, structure, functions

Practical

Nutritional biochemistry

1. Identification of Glucose, Fructose, Maltose, Lactose, Sucrose, Starch.
2. Colour and precipitation reactions of Protein.
3. Estimation of Glucose by Benedict's method.
4. Estimation of Haemoglobin by acid haemolysis method.
5. Estimation of Glycine by Titration.
6. Estimation of ascorbic acid by idometric method.
7. Visit to pathological lab (**compulsory**) to study the
 - Method of collection of sample
 - Application of latest techniques
 - Processing of sample
 - Use of reference values of blood and urine

B.Sc. (HOME-SCIENCE) PART -III
Group –II
Paper - B

FOOD PRESERVATION

M. Marks: 50

THEORY

UNIT- I

Food and its preservation.
Home and community level including commercial operations.
Principles of food Preservation
Causes of spoilage of food.

Unit - II

- Food Storage – Principles and Methods
- Fresh Foods – Fruits & Vegetables
- Dried Foods – Rice, Wheat & Pulses

Canning of Foods

- Definition and Principles of Canning
- Nutritive value of Canned Foods

UNIT-III

Pasteurisation

Effect on food quality.
Storage of pasteurised food.

Drying & Dehydration

Methods used and effect on food quality. Types of driers. Storage and deterioration of dehydrated food products.

UNIT-IV

Use of low temperature

Refrigeration and freezing methods, principles and applications. Preparation of foods for freezing influence on food components and structure. Self life of frozen foods

Pickling and Fermentation

Pickles, chutneys, ketchups sauces. Fermentation - Types, products and method use
Establishment of a small scale industry / cottage industry.

UNIT-V

Chemical Preservatives

Preparation of Fruit, Juices, Squashes, Fruit Syrups, Cordials, Jam Jelly.

High Acid & High Sugar Products –

common defects, Preservation of crystallized and glazed fruits.

Nutritional Implications of food processing

Causes for loss of vitamins and minerals, Enrichment, Restoration and Fortification

REFERENCES :

1. Oser, B.L. 1965 : 14 Ed. Hawk's Physiological chemistry, Mc Graw Hill Book Co.
2. William, S. : 16th Ed. JAOAC, Official methods of Analysis, Part I to XI, Manak Bhawan, New Delhi.
3. West E.S., Todd W.R., Mason, H.S. and Van Braggen J.T. 1974 : 4th Ed. Textbook of Biochemistry, Amerind Publishing Co. -Pvt. Ltd.
4. White A. Handlar, P. Smith E.L. Stelten, D.W. 1959 : 2nd Ed. Principles of Biochemistry, CBS Publishers and distributors.
5. Lehninger, A.L. Nelson, D.L. and Cox, M.M. 1993 : 2nd Ed. Principles of Biochemistry, CBS Publishers and distributors.
6. Stryer, L. '1995 : Biochemistry, Freeman WH and Co.
7. Devlin, T.M. 1986 : 2nd Ed. Textbook of Biochemistry with clinical Correlations John Wiley and sons.
8. Murray, R.K. Granner, D.K. Mayes, P.A. and Rodwell V.W. 1993 : 23rd Ed. Harper's Biochemistry, Large Medical Book.

Practical

1. Preparation of Jam, Jellies marmalades.
2. Preparation of Pickles & chutneys.
3. Dehydration of Vegetables & Fruits.
4. Preparation of Papad, Badi, Chips
5. Preparation of synthetic syrups & squashes.
6. Survey of market products and packaging

B.Sc. (HOME-SCIENCE) PART- III
Group –III
Paper - A
EARLY CHILDHOOD EDUCATION

M. Marks: 50

FOCUS-

The course focuses on need to provide various early childhood care and educational facilities through different programmes, for early childhood education. Types and present status of ECCE programmes are covered in this course. The recent policies affectionary young children are also included.

The course introduces students to the concept of curriculum for all round development of children. The main emphasis is on various components of curriculum to be included in daily program through medium of play. Method of learning by doing which forms the basis for understanding and knowledge is extended to the first two years of primary school.

OBJECTIVES :-

1. To know importance of early childhood care and significance of intervention programmes for early child development.
2. To understand major theoretical approaches and implication for early child development.
3. To become acquainted with current policies and programs in ECCE.
4. To meaning of curriculum and various components to be included in the daily programmes to promote all round development of children.
5. To recognize role of play in children's development.
6. To understand goals, principles, factors and approaches used in programme planning.
7. To recognize the advantages of project method and learn to use integrated approach in the development of daily programme.

THEORY

UNIT-I

Significance and objectives of early childhood care and education.

1. Significance of early childhood years in individuals development.
2. Meaning and need for intervention programmes for better growth and development.
3. Objectives of ECCE.
4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.

UNIT-II

Current Status and Expansion of Scope of ECE to ECCE

- Expansion from ECE to ECCE.
- Current Status of ECCE programme.
- Admission tests and effects on children.
- Effects of pressures on young children due to formal education.
- Need for ECCE programmes to provide quality care where mothers are at work.
- Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,
- ECE in India : Overview of pre.and post independence period.
- Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh.

Recent Developments : Policies, Institutions and contributions of NGOs

- National policy on children.

- National policy on education 1986.
- Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs.

UNIT-III

- Meaning of curriculum, Foundation of curriculum development.
 - Impact of play as means of development and learning.
 - Developmental stages of play.
 - Types of Play - Solitary play, parallel play, associative play and cooperatives play.
 - Functions of play - play as a means of assessing children's development.
 - Teachers Role in creating environment and Promoting play.
 - Classical theories of play - Surplus energy theory relaxation theory, Pre-exercise & recapitulation theory.
- Programme Planning**
- Approaches to learning : Incidental and planned learning.
 - Principles of programme planning :
 - from known to unknown, simple to complex, concrete to abstract.
 - Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.
 - Factors influencing programme planning.
 - Formal versus non-formal approach in education : advantages and disadvantages.

UNIT-IV Languages

- Goals of language teaching.
- Readiness for reading and writing. Meaning of readiness.
- Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.

Mathematics

- Importance of number and mathematics.
- Number as a language and history of its development.
- Abstract nature of number.
- Mathematical readiness.
- Analysis of prerequisite skill for number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.
- Operations and relevant rules and properties; subtraction, multiplication and division.
- Two and three dimension shapes, properties, characteristics.

Environmental studies

- Scope of environmental studies.
- Importance and goals of environmental studies.

UNIT-V Project method

- Introduction
- Meaning and advantages of using project method.
- Planning .

Alternative to Home Work

- Disadvantages of learning by role.
- Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.

Evaluation

- Need for evaluation.
- Formative and summative evaluation.
- Methods of evaluation : Observations.
- Evaluation of daily work, tools for evaluation
- Reporting to parents.

Practical (any four)

1. Plan three activities for children : list objectives, analyst tasks to achieve goals, select and organize instructional and learning materials, teacher's role, preparation of evaluation sheets i.e. check list, rating scale.
2. Prewriting activities.
3. (a) Mathematics
(b) Readiness
(c) Materials for classifying, comparing, seriations, patterning, counting shapes, fractions, list vocabulary related to mathematical concepts.
(d) Material for addition, subtraction, multiplication and divisions.
(e) Graphs.
(f) Experiences for understanding time distance weight, capacity and money.
4. Prepare a lesson for early childhood education.
5. Plan a project based on lessons of first and second standard, plan activities which children can do at home.
6. Visit to nursery school (**compulsory**).

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4. Gelman, R., Gallistel, C.1986 : The child's understanding of numbers. Cambridge : Harvard University Press.
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6. Jarolimek, J. Foster, C. 1985 : Teaching and learning in the elementary school, New York: Mac Millan.
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8. Khanna, S. 1992 : Khel Khoj : Ahmedabad : National Institute of Design.
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10. Lioyd L, Recharadson, K. 1980 : A mathematics activity curriculum for early childhood and special education, New York : Mac Millan.
11. Maxim, G. 1985 : The very young. Belmont, California : Wadsworth Publishing Company.
12. Neumann, E. 1971 : The elements of play. In D. Sponseller, ed. Play as a learning medium Washington, DC, NAEYC..
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14. Tarapore, F., Kettis, G., Benninger, C. 1993 ; Child's Right to play. Pune : SNTD College of Home Science.

B.Sc. (HOME-SCIENCE) PART III
Group –III
Paper - B
EXTENSION EDUCATION

M. Marks: 50

THEORY

UNIT-I

1. Concept of Education
 - (a) Meaning of Extension
 - (b) Origin of Extension
1. Extension Education Process
 - (a) Environment for learning
 - (b) Role of educator
 - (c) Role of the people participants
2. Home science extension and community development

UNIT-II

3. Concept of adult / non formal education
 - (a) Meaning
 - (b) Purpose
5. Five Year Plans
 - (a) History of planning in India.
 - (b) Five year plans and their focus.
6. Planning at different levels- National to Grass roots.

UNIT-III

7. Programmes to enhance food production
 - (a) national food production programmes.
8. Poverty alleviation efforts and food security
 - (a) Programmes for poverty alleviation for rural and urban areas.
 - (b) Current programmes for rural and urban poor

UNIT-IV

- 9 Programmes for women and children Women as target groups - specific measures for women and children such as DWCRA, ICDS, IMY. Current programmes for women as initiated and implemented by the different ministeries and departments.
- 10 PMKVY (Pradhan Mantri Kaushal Vikas Yojana).

11 Role of NGOs

Need for participation of Non-Governmental organizations in developmental efforts.
Encouragement given NGO's.

UNIT-V

Advertising Media

12. Different media for advertising.
13. Methods of Extension Education
14. Non-media advertising
15. Outdoor advertisement - Hoardings, Posters, Billboards, Bulletin Boards, Electronic signs, Letterbins, Aerial methods.
16. Transportation media (Mobile Vehicles)
17. Exhibition and Trade fair.

Practical

1. Visits to Radio / T.V. stations.
2. Script writing for Radio.
3. Visit to Extension Education Unit.
4. Write slogan about Adult-Education.
5. Designing an Advertisement for any product with relevant slogan at least two.
6. Study of programme for women as target group and children.

B.Sc. (HOME-SCIENCE) PART -III
Group –IV
Paper - A
Foundation of Art and Design

M. Marks: 50

THEORY

Unit – I Introduction to foundation of art

1. Design, Definition and types : Structural and Decorative
2. Elements of Design :-
 1. Line
 2. Size
 3. Form
 4. Structure
 5. Space
 6. Pattern
 7. Shape
 8. Light – Characteristics and Classifications
 9. Study of Colour – Classifications, Dimensions, Colour Schemes and effect.
3. Principles of design – definition and their characteristics and types :-
 1. Balance
 2. Harmony
 3. Scale
 4. Proportion
 5. Rhythm
 6. Emphasis

Unit – II **1. Indian, regional, traditional and contemporary arts and their use in :-**

1. Floor decoration
 2. Home decoration
 3. Accessories
- 2. Appreciation of art**
1. In terms of principles of art and design
 2. In terms of composition and aesthetic appeal
 3. Flower arrangement material and principles.

Unit – III 1. Family's Housing Needs

1. Protective, economic, affectional, social, standard of living, housing goals, style, function occupation.
2. Factors influencing selection and purchase of site to house building
 - 1- Legal aspects, location, physical feature, soil conditions, cost, services
3. House planning-
 - 1- Reading house plans
 - 2- Planning principles
Grouping of rooms, orientation, circulation, flexibility, privacy spaciousness, services, aesthetically, economy, light and ventilation.
 - 3- Planning different rooms: living room, bedrooms, kitchen, store room, toilet, passage, staircase.
 - 4- Landscape planning-Principles and application.

UNIT-IV

1. **Financial Considerations :**
 1. Availability of funds for housing
 2. Housing Development finance corporation
 3. Cooperative Housing Society
 4. Life Insurance corporation
 5. Cooperative Banks
 6. Loan from provident fund
 7. Finance corporation of India
2. **Disability of owning versus renting.**
 1. Housing problems, causes and remedial measures.

UNIT-V

1. **Furniture**
 1. Styles of furniture - traditional contemporary and modern.
 2. Selection of furniture for comfort, rest and relaxation for work, for storage
 3. Arrangement of furniture for living. Sleeping, dining and multipurpose rooms.
 4. Upholstered furniture materials, techniques and designs.
2. **Furnishing fabrics**
 1. Types of curtains, draperies, floor coverings rugs and carpets, cushion covers
2. **Selection and use.**
 1. Accessories and their role in interiors.

Practical (Any Eight)

1. Freehand drawing : Memory drawing and sketching.
2. Scale drawing, solid geometry, orthographic.
3. Preparation of colour wheel and colour schemes.
4. Elements of design laws of field size, proportion, types of shadows.
5. Residential space planning - scale, lines, abbreviations, metric projections, defining space by shades, shadows.
6. Lettering.
7. Use of colour for wall/floor decoration and making accessories.
8. Application of design principles in flower arrangement, styles of flower arrangement, innovation of new styles.
9. Gift wrapping and preparing decorative articles of fibre, fabric, coir, bamboo, clay, metal etc.
10. Drawing houseplans with standard specification.
11. Furniture layout of living, dining. Kitchen and bedroom designs presentation with furniture layout, sectional elevation, views.
12. Development of designs and construction of any five of the under mentioned items -'. cushions, curtains, carpets, doormats, rugs, table mats.
13. Wall paintings, picture frame design.
14. Graphic designs.
15. Visit to Art and Craft exhibition

B.Sc. (HOME-SCIENCE) PART- III
Group –IV
Paper - B
APPAREL MAKING & FASHION DESIGNING

Marks : 50

THEORY

Unit – I

1. Anatomy Of Human Body
 - Skeleton & Muscular System
 - Joints Of Human Body
 1. Normal Body
 2. Abnormal Body
1. Figure Problems & Different Types Of Figure Defects
 - Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
2. Deformity
 1. Natural & Accidental
3. Principle of Figure Drawing
4. Sketching of Different Body Features

Unit – II

1. Drawing Of Human Form In Different Angles
 - Front
 - Back
 - Side
2. Figure Head Theories
 - 8 ½ (Average Figure)
 - 12 ½ (Fashion Figure)
3. Introduction to Elements of Design
 - Color / Line
 - Texture
 - Shapes / forms
4. Principles of Design
 - Proportion
 - Balance
 - Harmony
 - Rhythm
 - Emphasis
5. Different types of Textile design
 - Structural / Decorative
 - Realistic / Abstract
 - Stylized / Geometrical

- Scrawly / Traditional

Unit – III

1. study of colour

- Definition,
- characteristics and
- colour schemes

2. Color Theories

- Prang’s Color Theory
- Munshell’s Color Theory

3. Fashion

- Definition
- Theories
- Fashion Trends In India
- Terms Related To Fashion Industry
- Factors Affecting Fashion

4. Necklines

- Study of Different types of Necklines
- Variations of Necklines

5. Collars

- Study of Different types of Collars
- Collars above the Necklines (Band Collars)
- Collars below the Necklines (Flat Collars)

Unit – IV

1. Tucks : Different types of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
2. Pleats : Different types of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box)
3. Seam & seam finishes
4. Frills & Gathers
5. Yoke : Different types of Yokes (Body, Waist, Hip, Shoulder)
6. Sleeves : Different types of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
7. Silhouettes

Unit – V

1. Embroidery

- Fundamentals / Techniques
- Design / Color Combination
- Use Of Different Threads / Different Types of Stitches

2. Traditional Embroidery Of India

- Kashida Of Kashmir & Bihar
- Kantha If Bengal
- Phulkari Of Punjab
- Chikenkari Of Lucknow
- Kasuti Of Karnataka

- Kutch & Kathiyawar Of Gujrat
 - Zari Embroidery
 - Applique Work
3. Entrepreneurship
 - Meaning, Definition, Nature & Types
 - Qualities of a Successful Entrepreneur
 - Factors Affecting the Development of Entrepreneurship
 4. Channels of Distribution : Meaning, Definition, Types & Functions
 5. Salesmanship : Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement.

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3. Brary Nathalie 1978 : Dress Pattern Designing London, Crosby Lockwood & Staples.
4. Gillelle, D.A. Berte, B. : Figure Types & Size Ranges, Fairchild Publication.
5. Goubourn M. 1971 : Introduction pattern cutting, Grading and Modelling, London, B.T. Batsford Lts.
6. Goldsworthy 1980 : Simple Dressmaking, Londown, Mills and Boon.altd.
7. Littman Connie 1977 : Pattern Making Design, Litton Educational Publishing Inc.
8. Muka A. 1979 : French Touch, Pittsburgh, Wolfson Publishing Co., Inc.

Practical

1. Average Figure (8 ½ Head Length)
2. Fashion Figure (12 ½ Head Length)
3. Sketching of different Body Features & Different Hair Styles
4. Preparation of Samples of different types of Necklines
5. Preparation of Samples of different types of Collars
6. Preparation of Samples of different types of Sleeves
7. Preparation of Samples of different types of Yokes
8. Preparation of Samples of different tucks and pleats
9. Construction of Ladies Garment With Different Patterns
 - Frock : A line / short body / long body
 - Petticoat / Blouse,
 - A-Line Kurti / Fitted Kurti / Flared Kurti
 - Simple Salwar / Salwar With Belt / Patiyala / Churidar
10. All samples of traditional embroidery fix in the file
11. Draw design with different colour schemes
12. Reducing and Enlarging a design
13. Draw an objects involving various Elements of design