

## HOME SCIENCE (864)

### Aims:

1. To develop an understanding of the terms, concepts and principles used in the study of the discipline of Home Science.
2. To develop thought, inquiry, insight and understanding of issues involved in running a home, providing adequate nutrition, meal planning, care of textiles and clothing, budgeting and family care.
3. To inculcate an appreciation of aesthetic balance, economy and efficiency with regard to home.
4. To foster an understanding of the changes that take place during growth and development of children.
5. To equip adolescents with the knowledge and skills necessary for management of the self.
6. To foster an understanding of children in difficult circumstances, problems of the elderly and individuals with special needs.

### CLASS XI

*There will be two papers in the subject.*

**Paper I: Theory:** 3 hours.... 70 Marks

**Paper II: Practical:** 3 hours..... 30 Marks

#### PAPER I -THEORY

*There will be one paper of 3 hours duration divided into 2 parts.*

**Part I (20 marks)** (Compulsory) will consist of short answer questions covering the entire syllabus.

**Part II (50 marks)** will consist of **eight** questions, which will require detailed answers. Candidates will be required to answer **five** out of **eight** questions.

#### 1. Concept and Scope of Home Science

- (i) Introduction to the five streams in Home Science and how they integrate to form a meaningful whole.

*To explain that Home Science is an umbrella term for a field of Applied Sciences, made up of Foods & Nutrition, Resource Management, Human Development, Textiles & Clothing and Communication & Extension.*

- (ii) Importance and relevance of the study of Home Science.

*The need for studying each aspect of Home Science - enables a scientific understanding of the field and allows for research in the*

*discipline, which reinforces the theoretical perspectives.*

*Immense practical value of the discipline in everyday life - a study of Home Science helps in the ultimate understanding of the self, people and various social, emotional and biological factors necessary for human survival.*

- (iii) Career options in Home Science.

*A brief study of the various career options available for Home Science students.*

#### 2. Food and Nutrition

- (i) A review of the relationship between food and health, the importance of a balanced diet for everyday life.

*Classification of food on the basis of nutrients and functions. Functions of food: physiological, psychological and social; assessment of nutritional status and calorie intake on the basis of poverty line.*

*Concept of balanced diet, food and nutritional requirements for family (ICMR tables).*

*Understanding of terms like mortality, morbidity and longevity and their relationship to food.*

- (ii) Elementary study of macro and micro nutrients.

*Sources and functions of nutrients: carbohydrates, proteins, fats, minerals (iron, calcium, iodine and phosphorous) and vitamins (A, D, E, K, B1, B2, Niacin, Folic Acid & C); role of water and fibre in the diet. Recommended Dietary Allowances (RDA) for all nutrients mentioned above. Factors affecting absorption of nutrients by the human body; problems related to under-nutrition and over-nutrition.*

*Basal Metabolic Rate (B.M.R) and the factors affecting B.M.R.*

### 3. Resource Management

- (i) Efficient management of resources – material, human and shared (community).

*Meaning and types of resources: human – time, energy, knowledge, skills, attitudes; material – money, goods, property; shared (community) facilities – schools, parks, hospitals, road transport, water, electricity, fuel. Need to manage resources and methods for maintenance/conservation of shared resources.*

- (ii) Management: need for Management at home. Components of Management; Decision making.

*Understanding the important role that management plays in smooth and efficient running of homes. A brief understanding of the major components of Management – Planning, Organizing, Controlling, Implementing and Evaluation.*

*Role of decision making process in management.*

- (iii) Work simplification.

*Meaning and methods of work simplification.*

- (iv) Savings and investments.

*Importance of savings.*

*Availing schemes for savings and investments offered by banks and other financial institutions (post office, LIC).*

- (v) Fundamentals of banking.

*Opening and operating a bank account, types of cheques, filling a deposit slip, procedure for making a Demand Draft, use of ATM, Debit, Credit cards & availing of student loans.*

### 4. Human Development

- (i) Introduction to the study of Human Development.

*Concept of growth & development; factors affecting growth & development. Influence of sports and physical fitness.*

*Milestones of development from ages 0 to 12 years.*

- (ii) Periods of growth and development during childhood.

*Periods of development during childhood, i.e. - from conception to about 12 years of age. (infancy, early childhood, middle childhood and late childhood).*

- (iii) Philosophy of Human Development.

*The following aspects need to be explained - development is multidimensional and interdisciplinary - includes biological, cognitive, emotional and social development; development is continuous and cumulative; it is variable, reflecting individual variation; cultural differences are reflected in development; both heredity and environment influence development.*

- (iv) Understanding special needs.

*Developing an understanding of normal development, therein developing an understanding of the needs of the differently abled; becoming sensitive to the special needs of the disadvantaged and differently-abled children in terms of social: broken home, juvenile delinquency; economic: living below the poverty line (BPL); physical: partially blind & deaf, affected (e.g. polio), missing limbs and mental handicaps: learning disabilities (slow learners and dyslexics).*

## 5. Textiles and Clothing

### (i) Textile fibres.

*Types of fibres: (i) natural - cotton, silk and wool; (ii) man-made – nylon, polyester and blended fibres (terrycot, terrysilk, terrywool, cotton silk).*

### (ii) Fabric Construction.

*Basic procedure of yarn making (spinning, mechanical spinning, chemical spinning), weaving: plain, twill & satin, other methods – knitting & braiding, non-woven fabrics; effect of weaves on appearance, durability and maintenance of garment.*

### (iii) Textile finishes.

*Meaning and importance; types: (i) basic: scouring, bleaching, stiffening, tantering; (ii) special: mercerization, shrinkage control, water proofing, dyeing and printing.*

## 6. Introduction to Communication and Extension

Methods of communication – individual, group and mass contacts.

*Individual – verbal and written.*

*Group – discussions, demonstrations, fieldtrips.*

*Mass – Print and electronic.*

*Role of audio visual aids in Communication & Extension.*

## PAPER II – PRACTICAL – 30 Marks

Students are required to complete the practicals listed below and maintain a record book for the same.

### 1. Food and nutrition

- Use 24-hour dietary recall method to analyse individual diet patterns with reference to requirements of basic food groups and RDA. Discuss implications of deficiency.
- Basic Cooking: Boiling, steaming, frying and baking. Preparation of simple snacks using these methods.

### 2. Resource Management

- Opening of a bank account, filling of cheques, deposit slips, withdrawal slips and demand draft forms.
- Simple home decoration – flower arrangement and floor decoration.

### 3. Textiles and clothing

- Basics of stitching – hemming, running stitch.
- Attaching buttons and hooks.

### 4. Human Development

Visit a nearby nursery school. Observe children at play outdoors and indoors. Record the patterns of play behaviour and the kind of interactions with other children and adults. Talk to the teachers in the school about how they plan activities for young children.

## CLASS XII

There will be two papers in the subject.

**Paper I: Theory:** 3 hours ... 70 Marks

**Paper II: Practical:** ... 20 Marks

- Planning Session: 1 hour
- Examination Session: 3 hours
- Project Work ... 7 marks
- Practical File ... 3 marks

### PAPER I -THEORY

There will be one paper of 3 hours duration divided into 2 parts.

**Part I (20 marks)** (Compulsory) will consist of short answer questions covering the entire syllabus.

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#### 1. Food Preparation

- (i) Techniques and methods of cooking. Medium of cooking, (dry and wet methods of cooking), choice of method of cooking and quality of food. New developments in cooking:
  - Microwave
  - Technologies that do not harm the environment such as, solar cooking, biogas.

*Techniques and Methods of cooking; Principles of Cooking; reasons for cooking food. Medium of cooking (dry and wet methods of cooking); classification of cooking methods; new developments in cooking: microwave, solar cooking and bio gas.*

- (ii) Preliminary treatment of foods before cooking.

*Common pre-cooking procedures e.g. (a) cleaning/washing; (b) peeling; (c) cutting (d) pounding; (e) grinding; (f) beating/whipping; (g) soaking; (h) mixing; (i) kneading; (j) grating.*

- (iii) Effects of cooking on food components. Carbohydrates – starch, sugar, pectin, cellulose; Proteins; Oils and Fats; Minerals and Vitamins.

*Self-explanatory.*

- (iv) Methods of increasing nutritive value of foods: Sprouting/germination, fermentation, parboiling, combination of foods, supplementation, substitution, puffing and liming.

*Methods of increasing nutritive value of foods: sprouting/ germination, fermentation, parboiling, combination of foods, supplementation, substitution, puffing and liming. Do's and don'ts in cooking to minimize loss of nutrients.*

#### 2. Management of Agricultural Produce – Storage and Preservation

- (i) Causes for spoilage of food.

*Factors contributing to food spoilage: Enzymatic action, moisture, microbial contamination, insects, rodents and improper handling of food and its spoilage due to poor storage facilities. Importance of food preservation and principles of food preservation.*

- (ii) Storage of foods – perishable, semi-perishable and non-perishable foods.

*A general idea of storing common foods at home.*

- (iii) Simple methods of food preservation.

*Simple household methods of food preservation: (a) Bactericidal Methods; (b) Bacteriostatic Methods; (c) Dehydration; (d) Refrigeration; (e) Chemical Preservation (i.e. salting, use of sugar, use of lime, vinegar and chemical preservatives); (f) Use of Oil and Spices; (g) Sterilization by cooking.*

#### 3. Meal Planning for the family

- (i) Objectives of meal planning. Nutritional adequacy, food groups.

*Self-explanatory.*

- (ii) Factors affecting food selection: Age, occupation, gender, physiological conditions, personal likes and dislikes, tradition, seasonal availability, economic considerations, religious beliefs, family size and composition.

*An understanding of how food consumption varies from one family to another; how food selected by families is affected by various factors like age, occupation, gender,*

*physiological conditions, personal likes and dislikes, tradition, seasonal availability, economic considerations, religious beliefs, family size and composition.*

- (iii) Meal planning for various age groups. Nutritional needs of preschool children, school-age children and adolescents.

*An understanding of the nutritional needs of pre-school children, school-age children and adolescents. Making meal plans for these age groups based on their nutritional requirements and RDA.*

*Developing good food habits - importance of breakfast, following regular meal patterns, avoiding junk food and skipping of meals.*

#### **4. Resource Management**

- (i) Safety in the home.

*Prevention of falls, fire, electrocution, poisoning, suffocation and choking.*

*Safety and sanitation in the kitchen: hygiene and disposal of household waste (organic and inorganic).*

- (ii) Food adulteration.

*Definition of food adulteration as stated in PFA, when is food considered adulterated; what is quality?*

*Health hazards due to intentional adulteration; metal contaminants; bacterial and fungal contaminants; pest and pesticide residue.*

*Common adulterants present in food stores – stones, dust, dirt, argemone oil, metanil yellow, kesari dal, toxic colours, chicory powder and starch and their effects.*

*Prevention of Food Adulteration Act (PFA).*

#### **5. Consumer protection**

Standard marks available for providing consumer protection.

Creating awareness about standard marks for consumer protection - FPO, Agmark, ISI, Woolmark, Vegetarian and Non-vegetarian food; need for understanding care labels on garments and fabrics; Study of nutritive value, weight, use of additives, preservatives, manufacturing and expiry date /best before dates on labels of packaged goods.

*Problems faced by consumers; importance of consumer education; rights and responsibilities of the consumer; advantages of consumer education.*

*Creating awareness about standard marks for consumer protection - FPO, Agmark, ISI, Woolmark, vegetarian and non-vegetarian food; need to understand care labels on garments and fabrics; Study of nutritive value, weight, use of additives, preservatives, manufacturing and expiry date /best before dates on labels of packaged goods.*

#### **6. Human Development**

- (i) Physical development during adolescence.

*Physical Development during puberty and adolescence: role of the endocrine system - changes in bodily proportions and their effects, early and late maturers; Hygiene needs during adolescence. Influence of sports and exercise on physical fitness.*

- (ii) Cognitive development and language.

*Stages of cognitive development; changes in adolescents due to cognitive development. Language and communication skills among adolescents - development of language; influences on language development; development of ways in which adolescents obtain information, remember it and utilize it for problem solving and reasoning.*

- (iii) Social and emotional development.

*Socio-cultural influences on the adolescents – teenagers are influenced by social relationships in the family, neighbourhood, community, country and the world. The family and socialization – patterns of parenting, parental control techniques; role of siblings and grandparents. Development of peer relationships and friendship patterns. Development of gender roles and stereotypes. Role of school and teachers on the social and emotional development of the teenager.*

- (iv) Perspectives on Adult Development: Meaning of adulthood.

*Transition to adulthood and accepting related responsibilities; dimensions of adulthood; issues of increasing life expectancy; sensitizing students to the needs and care of the elderly.*

## 7. Textiles and Clothing.

Selection of clothes – factors affecting selection.

Methods of laundering - Wet and dry cleaning.

Storage of clothes – wool, silk and cotton.

*Factors affecting selection of clothes; Laundering - laundry equipment.*

*Methods of laundering - wet cleaning of cotton, linen, wool and silk; different methods employed; steps in wet laundering; difference in techniques. Dry cleaning - purpose of dry cleaning; dry cleaning agents; precautions to be observed during dry cleaning; advantages and disadvantages of dry cleaning.*

*Storage of clothes - wool, silk, cotton, special clothes like zari sarees, lace, velvet.*

### PAPER II

#### PRACTICAL – 20 Marks

This practical paper will consist of **two** sessions:

- (i) The Planning Session (1 hour)
- (ii) The Examination Session (3 hours).
- (i) **The Planning Session:** Candidates will be required to plan a **balanced menu** during the Planning Session, on **one** occasion from the two given options.
- (ii) **The Examination Session:** Candidates will be required to cook any two dishes from the menu planned during the Planning Session (showing different methods of cooking).

Candidates would also need to display the dishes prepared.

In addition to the above, candidates will be required to make a flower arrangement/floor decoration.

**The Practical Work will be evaluated by a Visiting Examiner appointed locally and approved by the Council.**

#### Distribution of Marks

Menu Planning – 5 Marks

Cooking – 10 Marks

Display (Table setting/picnic hamper/ packed food basket) – 3 Marks

Flower arrangement/floor decoration – 2 Marks

**Candidates will be required to complete the Practicals listed below during the year:-**

Plan a **balanced menu** for the following, keeping in mind the variations (age/sex) given in the question:

- Party to celebrate any special occasion
- Picnic
- Journey (short journey/ overnight journey)
- Festival

Prepare any **two** dishes from the planned menu, using different methods of cooking.

Make an appropriate display to complement the prepared dishes.

Make a suitable flower arrangement/floor decoration

#### **PROJECT WORK AND PRACTICAL FILE – 10 Marks**

##### **Project Work – 7 Marks**

**Evaluation Criteria: material, content, presentation and innovation**

The project work is to be assessed by a Visiting Examiner appointed locally and approved by the Council.

The candidate is to creatively execute **ONE** project/assignment on an aspect of Home Science. Teachers may assign or students may choose any **one** project of their choice. Students can choose any other project besides the ones indicated in the list below. Following is only a suggestive list of projects.

1. Market survey of packaged goods such as, foodstuffs (biscuits, jams, chips, cheese spread), hair dyes, shampoos, soaps, etc. to investigate whether consumer protection norms of labeling are being followed.
2. Draw a case history of a family/individual by talking to elders, referring to diaries and seeing the photographs. Focus on factors responsible for change or development of an ability or characteristic.
3. Market survey on readymade garments in relation to care labels, material, seasonal availability, size, age, occasion, etc.
4. Survey on practices followed in the region for storage, preservation and processing of perishable or non-perishable farm products and to assess the extent of wastage due to faulty practices.

##### **Practical File – 3 Marks**

The Visiting Examiner is required to assess candidates on the basis of the Practical file maintained by them during the academic year.