

# HOME SCIENCE (864)

## Aims:

1. To develop an understanding of the terms, concepts and principles used in the study of Home Science.
2. To develop an understanding of the importance of proper storage and preservation of food and meal planning for the family.
3. To equip candidates with the necessary knowledge and skills for effective management of resources.
4. To foster an understanding of the changes that take place during different stages of life.
5. To familiarize candidates with traditional textiles and to equip them with the knowledge and necessary skills involved in the care and maintenance of textiles.
6. To create awareness regarding selected community development programmes and to develop effective communication skills.

## 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 two 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 streams in Home Science and how they integrate to form a meaningful whole.

*An explanation 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.

*An understanding of how the study of Home Science enables one to understand and develop skills to deal with issues and concerns related to self, family and society.*

- (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.

*Dimensions of health: physical, social, emotional, mental and spiritual. Classification of food on the basis of nutrients and functions. Functions of food: physiological, psychological and social.*

*Concept of balanced diet and food groups. Nutritional requirements for different age-groups (ICMR tables).*

- (ii) Study of macro and micro nutrients.

*Sources, functions, Recommended Dietary Allowances (RDA) and deficiency of the following nutrients: carbohydrates, proteins, fats, minerals (iron, calcium, iodine and phosphorous) and vitamins (A, D, E, K, B<sub>1</sub>, B<sub>2</sub>, Niacin, Folic Acid & C); role of water and fibre in the diet.*

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

### 3. Storage and Preservation of Food

- (i) Causes of food spoilage.

*Factors contributing to food spoilage: Enzymatic action, moisture, microbial contamination, insects, rodents, improper handling of food.*

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

*Meaning and examples of perishable, semi-perishable and non-perishable foods; a general idea of storing common foods at home.*

*Convenience foods and their merits and demerits.*

- (iii) Food preservation: Need and importance, principles and methods.

*Need and importance of preserving food (to be done briefly).*

*(a) Principles of food preservation:*

- *Use of high and low temperature;*
- *Change in pH;*
- *Removal of moisture;*
- *Use of chemical preservatives (household: salt, sugar, lemon, oil, spices, vinegar; commercial: sodium benzoate and potassium meta bisulphite).*

*(b) Methods of food preservation:*

- *Bactericidal Methods: sterilization by cooking.*
- *Bacteriostatic Methods: dehydration, refrigeration, chemical preservation (i.e. salting, use of sugar, use of lime, vinegar and chemical preservatives), pickling.*

*Brief description and examples of each of the above.*

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

- (i) Resources: Human, non-human and shared resources.

*Meaning of resources; types of resources: human - time, energy, knowledge, skills, attitudes; non-human - money, goods, property; shared (community) facilities - schools, parks, hospitals, transport, water, electricity, fuel.*

- (ii) Management of Resources: need and importance of Management; Management process; Decision making.

*(a) Role of management in efficient and effective utilization of resources. A brief understanding of the Management process: Planning, Organizing, Implementing, Controlling, and Evaluation.*

*Role of Decision Making in management of resources.*

*(b) Methods of maintenance/ conservation of shared resources.*

- (iii) Time and Energy Management.

*Concept and importance of time and energy management; types of time plans (daily, weekly, monthly, annual); significance of peak load and rest periods; management of time. Work simplification: Meaning and methods.*

#### **5. Human Development**

- (i) Growth and Development from birth to late childhood.

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

*Milestones of development from birth to late childhood (ages 0 to 12 years).*

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

*Periods of development during childhood from birth to 12 years of age, (infancy, early childhood, middle childhood and late childhood).*

- (iii) Perspectives 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) Personality development and image building.

*Personality: concept; factors affecting personality (environmental and genetic); types and traits of personality.*

*Competencies for effectiveness: empathy, information seeking, communication skills, initiative, self-confidence, importance of personal grooming.*

**6. Care and Maintenance of Textiles**

- (i) Laundering of cotton, linen, wool, silk, rayon; storage of clothes.

*Methods of wet cleaning; steps in laundering and difference in techniques used.*

*Finishing by starching, blueing and use of optical brightening agents and pressing/ironing.*

*Storage of wool, silk, cotton, linen, rayon; special items like zari, lace and leather.*

- (ii) Household methods of stain removal.

*Stains of animal origin: blood, egg, milk.*

*Stains of vegetable origin: Turmeric, oil/curry, tea.*

*Stains of mineral origin: ink, lipstick, rust.*

**7. Communication and Extension**

Methods of Communication: individual, group and mass; social media.

*Individual: verbal and non-verbal.*

*Group: discussions, demonstrations, fieldtrips.*

*Mass: print and electronic.*

*Social media: meaning, types, advantages and disadvantages.*

**PAPER II – PRACTICAL – 30 Marks**

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

**1. Food and nutrition**

- (a) 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.
- (b) Basic Cooking: boiling, steaming, frying and baking. Preparation of simple snacks using these methods.

**2. Resource Management**

- (a) Prepare a list of activities routinely performed by you in a day, along with approximate time spent on each activity. Show how you would modify your routine, for most effective utilization of time and energy.
- (b) Make flower arrangements: centre, side.

**3. Textiles and clothing**

- (a) Basics of stitching – hemming, running stitch, attaching fasteners.
- (b) Laundering of cotton, linen, wool, silk and rayon.
- (c) Removal of stains.
- (d) Designing care label for a garment.

**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.

**5. Communication & Extension**

Conduct a survey on the use of Social Media among teenagers on various aspects such as, social network sites used, time spent in a day, frequency of usage, reason for using these social network sites, perceived advantages/disadvantages, etc.

## 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 two 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. Food Preparation

- (i) Principles of cooking; Methods of cooking (dry and wet/moist methods of cooking) and reasons for cooking; advantages and disadvantages of various methods employed in cooking. Some technologies used in cooking.

*Principles of cooking;*

*Methods: Wet/moist methods: boiling, simmering, steaming (direct and indirect), stewing, braising, pressure cooking. Frying: sautéing, shallow and deep frying.*

*Dry methods: baking, roasting, grilling/ broiling.*

*Technologies used in cooking: microwave, induction cooking, solar cooking.*

*Meaning, principle, advantages, disadvantages and examples of each of the above.*

- (ii) Preliminary treatment of foods before cooking.

*Common pre-cooking procedures such as: Cleaning/ washing, peeling, cutting, sieving, grinding, beating / whipping, soaking, mixing, kneading, grating.*

*Meaning and application of each of the above.*

- (iii) Culinary terms.

*Meaning and application of the following: garnish, season, blanch, marinate, braise, flambé, meringue, glaze, poach, puree, roux, pare, temper, prove, dredge.*

- (iv) Effects of cooking on food components.

*Effect of cooking on Carbohydrates (starch, sugar, pectin, cellulose); Proteins; Oils and Fats; Minerals and Vitamins. Internal and external changes in food components. Do's and don'ts in cooking to minimize loss of nutrients.*

- (v) Methods of increasing nutritive value of foods.

*Sprouting/ germination, fermentation, parboiling, combination of foods, supplementation, substitution.*

*Method and advantages of each of the above.*

#### 2. Meal Planning for the family

- (i) Objectives of meal planning. Nutritional adequacy.

*Self-explanatory.*

- (ii) Factors affecting food selection.

*An understanding of how food consumption varies from one family to another; how food selected by families is affected by various factors such as 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.

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

- (iv) Eating disorders; developing good food habits.

*An understanding of the following: (a) Anorexia nervosa (b) Bulimia (c) Binge eating disorder or obesity; ways to control the above eating disorders.*

*Developing good food habits: importance of breakfast, following regular meal patterns, avoiding junk food and skipping of meals; Food fads – meaning and examples.*

(v) Special diets.

*Meaning and types; factors to be kept in mind while preparing special diets for: fever (of short duration), diarrhea, diabetes, obesity, hypertension. A day's menu plan for each of the above.*

### 3. Resource Management

(i) Savings and Investments.

*Importance of savings and investments.*

(ii) Avenues and schemes for savings and investments offered by different financial institutions.

*Banks:*

*Concept; function and types of accounts: savings, current, recurring and fixed deposit accounts in Banks: features, limitations; online banking: meaning, advantages and disadvantages. A brief understanding of NEFT.*

*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 and availing educational loans.*

*Post office:*

*Concept; function and types of accounts: savings, recurring and fixed deposit accounts: features, limitations.*

*Insurance (life and health); shares and debentures: concept only.*

### 4. Consumer Education

(i) Consumer Protection

*Importance of consumer education; rights and responsibilities of the consumer; advantages of consumer education. Consumer Protection Act (2019) - salient features.*

(ii) Consumer aids

(a) *Standard Marks: Creating awareness about standard marks for consumer protection: fssai, FPO, AGMARK, ISI,*

*Woolmark, Ecomark, Silkmark, Hallmark, Handloom mark; vegetarian and non-vegetarian food.*

(b) *Labels: need for understanding labels on food items.*

(c) *Role of advertisements and their impact.*

(iii) Problems faced by consumers.

*Price variation, hoarding and black marketing, unfair means of measurement, misleading advertisements, deceptive packaging, sale of sub-standard goods.*

*Food adulteration: Definition of food adulteration as stated in Prevention of Food Adulteration Act (PFA); common adulterants present in food stores - stones, dust, dirt, argemone seeds and oil, metanil yellow, kesari dal, toxic colours, chicory powder and starch and their effects.*

### 5. Human Development

Growth and development during adolescence.

(i) Physical development.

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

(ii) Cognitive development

*Stages of cognitive development.*

(iii) Social and emotional development.

*Influences on adolescents:*

– *Family: parents, grandparents, siblings; Family and socialization; patterns of parenting; development of gender roles and stereotypes.*

– *School and teachers: role of school and teachers in the social and emotional development of the adolescent.*

– *Peers: development of peer relationships (positive and negative influences).*

(iv) Issues and concerns of adolescents.

*Peer pressure, substance abuse (meaning, symptoms and treatment), sexual abuse; anger management, depression and suicidal tendencies. Preparation for career. Influence of social media.*

(v) Perspectives on Adulthood.

*Adulthood: meaning and dimensions; Stages:*

- *Early adulthood - understanding and managing new responsibilities, career, marriage and family.*
- *Middle adulthood - physical and psychological changes.*
- *Late adulthood/ old age - (a) Health and wellness: physical, social, emotional, financial, recreational needs (b) Care for the elderly (at home and outside - old age homes); modification in lifestyle; preparation for retirement.*

*Increasing life expectancy and associated issues and concerns. Sensitising children towards the needs and care of the elderly.*

**6. Traditional Textiles**

Traditional textiles: Classification - embroidered, woven, dyed, printed and painted.

- (a) *Embroidered textiles: Chikankari, Phulkari, Kashidakari, Kantha, Kasuti, Kutch-Kathaiwar - origin, thread, colour, fabric, stitches, motifs, products.*
- (b) *Woven textiles: Baluchari, Chanderi, Kanjeevaram, Banarasi, Jamdani, Kani shawls - origin, characteristics, care and storage: origin, yarn, colours, motifs, products.*
- (c) *Dyed: Bandhini, Patola, Ikat - origin, fibre or fabric, colours, motifs, products.*
- (d) *Printed and painted: Kalamkari, Madhubani, Bagh, Dabu (Sanganer-Baghru print) - origin, technique, fabric, colours, motifs, products.*

**7. Communication and Extension**

(i) Water safety

*Importance of potable drinking water for good health; simple methods of making water safe for drinking: boiling, filtering (traditional and modern technology), use of alum and chlorine.*

(ii) Some National Programmes for Community Development.

*Scope and salient features of the Swachh Bharat Abhiyan and the Integrated Child Development Scheme (ICDS).*

**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 any **one** from the two given options.
- (ii) The Examination Session:**
- (a) Candidates will be required to cook any two dishes from the menu planned during the Planning Session.
  - (b) Candidates would also need to display the dishes prepared with a suitable table layout.

**NOTE: Candidates will be required to exhibit different methods of cooking during the practical examination.**

- (c) In addition, candidates will be required to design and develop a suitable label for a food item on **any one** of the two given options. **Candidates will be assessed on the design and content of the label.**

The label should include the following information: *nutritive content, net content, use of additives and preservatives if any, manufacturing and expiry date /best before dates, instructions of use, MRP, standardization marks, vegetarian/non-vegetarian, name and address of the manufacturer (any six points to be included).*

**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
Table display	2 Marks
Label Designing	3 Marks
<b>TOTAL</b>	<b>20 MARKS</b>

**Candidates will be required to complete the following Practicals during the year:**

1. Plan a **balanced menu** keeping in mind the specified age and sex variations for:
  - Special occasions (birthday party, marriage anniversary, family get-togethers, promotion at work, success in examinations, etc.)
  - Packed meals (picnic basket, short and long journeys...)
  - Therapeutic diets (hypertension, diabetes, obesity)Prepare any **two** dishes from the planned menu, using different methods of cooking.  
Make an appropriate display to complement the prepared dishes.
2. Design and develop suitable labels for food items.
3. Opening of a bank account, filling of cheques, deposit slips, withdrawal slips and demand draft forms.

**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 any one of the following:

1. Study the height and weight of at least 20 people from the same age group. Compare the data collected against the recommended norms to identify variations. Analyse the data and present your findings graphically.
2. Select any three States in India and study their traditional weaves, prints and costumes. Prepare a report on the same.
3. Select any one National Programme for community development in India and prepare a report on the same. Also prepare two communication aids to create awareness on this Programme.
4. Compare the interest rates offered by five different commercial banks on fixed deposits under general and senior citizens categories and the various time durations.

Also find out the procedure for: Opening a savings account and a fixed deposit account.

**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.