

## **B.Sc. HOME SCIENCE PART - II**

### **Semester – IV**

#### **( Food Science & Nutrition)**

#### **COMMUNITY NUTRITION**

### **Paper I**

**Total Marks -75**

Theory -50

Practical -15

Internal Assessment

#### **OBJECTIVES :**

- 1) To orient students to the basic principles of nutritional assessment as applied to the study of community nutrition.
- 2) To develop an understanding of the role of micro-organism in food.

### **Theory**

#### **Unit – I**

#### **Community Nutrition :**

- 1) Malnutrition

Definition and Types of malnutrition. Causes of malnutrition, prevalence of Malnutrition in India. **Effects of malnutrition on general health, physical, mental and national development.**

- 2) Nutritional Assessment

Assessment of Nutritional Status:

- a) Anthropometry
- b) Diet Survey
- c) Clinical Assessment
- d) Laboratory Method ( Biochemical & Biophysical )

Limitations and interpretation of all the above parameters.

## **Unit – II**

### **Nutrition Education**

- A) Meaning, importance, methods, and evaluation of Nutrition Education, problems involved in organizing Nutrition Education Programme for the community and how to solve them.
- B) National Nutrition Programme : a) ICDS b) MDM program c) National Nutrition Anemia prophylaxis programme (NNAPP) and Vitamin A Prophylaxis programme (VAPP) d) Goitre control
- C) National Organizations (ICAR, ICMR, NIN, CFTRI) and international organization (FAO,WHO, UNICEF, CARE) in Community Nutrition and Health.

## **Unit- III**

### **Food Microbiology and Food Processing**

- 1. Principles underlying Food spoilage and Food preservation :
  - Importance of Food Preservation
  - General principles of Food preservation for arresting microbial growth.
  - a) High/ Low temperature (pasteurization/ refrigeration / deep freezing)
  - b) Drying (Sun-drying)
  - c) Radiation
- 2. Food Poisoning- causes, effect, prevention

## **Unit- IV**

- 1. Food Additives: Food colours and role of food stabilizer.
- 2. Leavening Agent: Microbiological, Chemical and Natural Leaveners.
- 3. Food Fermentation: Microorganisms as food. Fermented products such as Idli, Curd, Butter, Cheese, Bread, Nutritive value of Fermented foods.
- 4. Food adulteration and common adulterants
- 5. Food Laws : Importance of food laws B)Food Standard in India a) PFA standards b) FPO standards c) Agmark standards d) ISI standards.

## Practical

- 1) Packed lunch for a school going child (any five).
- 2) Preparation of the following :
  - a) Jam b) Sauce c) Pickles d) Squash e) Chutneys f) Murabbas.
  - a) Baked products- Cakes, Biscuits and Nankhatai.
  - b) Fermented foods - Idli, Dhokla and Dosa.
  - c) High protein recipes.

## Internal Assessment (any one of the following)

- 1) Canteen: Planning, purchasing, preparation and serving of any recipe for 50 members or more with appreciable profit margin.
- 2) Standardization of few selected recipes.
- 3) Dietary survey of at least 5 subjects using questionnaire and 24-hour recall method.

## Books Recommended :

- 1) Nutritive value of Indian Foods : Gopalan C, Rama Sastri & Balasubramanian S.C. National Institution of Nutrition,1993.
- 2) Understanding Nutrition: Whitney E.N. & Rolfes S.R. 8<sup>th</sup> Edition West/Wordsworth 1999.
- 3) Dietetics : B Srilakshami, New Age International (P) Ltd. Publishers 3<sup>rd</sup> Edition,2000
- 4) Nutrition and Dietetics: Shubhangini A Joshi, Tata McGraw Hill Publishing Co. Ltd., New Delhi, 1992.
- 5) Nutritional Research : Current Scenario and Future Trends Editor : K, Krishnaswamy, Oxford and IBH Publication Co. Pvt., 2000.
- 6) Nutritional Problems of India : Shukla P.K. Prentice Hall of India Pvt.Ltd Delhi 1982
- 7) Food Preservation and Processing : M.Kalyani Publishers, 1999
- 8) Food Microbiology: Frazier W. C. and D. C. West haff. Mc Graw-Hill book Co. Ltd Inc.1981.

**SEMESTER IV**  
**HUMAN DEVELOPMENT**  
**[Late Childhood & Adolescent Development]**  
**Paper II**

<b>Total Marks -</b>	<b>75</b>
Theory	- 50
Practical	- 15
Sessional	- 10

**Objectives:**

- To make students aware of development during late childhood.
- To make students aware of puberty, adolescence & concerns of adolescence.

**Unit-I: Late Childhood**

Characteristics, Developmental tasks, Physical development, Speech development, Social behaviour (Play interest), Sex role typing, Family relationships, Personality changes, Hazards. Behavioral Problems - Hyperactivity, Slow learners, Truancy, School dropouts, Nail biting, Tics.

**Unit-II: Puberty**

Characteristics, Criteria, Causes and body changes, Effects of puberty changes and sources of concern, Hazards, Sex education.

**Unit-III: Adolescent Development**

Characteristics, Developmental tasks, Physical changes, Emotionality, Morality, Adolescent interests, Personality changes, Hazards.

**Unit-IV: Adolescent Care & Concerns**

Identity Formation, Family relationships, Parenting Skills for Adolescents, Psychological Disturbances - Depression, substance abuse, Suicide, Adolescent Pregnancy, Eating disorders.

**Practicals:**

- i) Study of Prejudices, Emotions, Self Concept & Aspiration of School age Children
- ii) Survey of interests of late childhood children.
- iii) Study of adolescent problems by survey method. Min. Sample – 50 and calculate percentage.

Record to be maintained.

**Sessional:** Project on psychological disturbances of adolescents.

## **Books Recommended**

- 1) Developmental Psychology: E. B. Hurlock, 5<sup>th</sup> Edition, 1981,  
Tata McGraw Hill Publishing Company,  
New Delhi.
  
- 2) Human Development: Diane, E. Papalia & Sally Wendkos Olds,  
5<sup>th</sup> Edition 1981, Tata McGraw Hill Publishing  
Company, New Delhi.
  
- 3) Adolescent Development: E. B. Hurlock, 5<sup>th</sup> Edition, 1981,  
Tata McGraw Hill Publishing Company,  
New Delhi.
  
- 4) The Psychology of Adolescent: A. T. Jerslid, 7<sup>th</sup> Edition, Prentice Hall Inc.  
Englewood Cliff's N. J., U.S.A.

**B.SC. II (HOME SCIENCE)**  
**SEMESTER – IV**  
**TEXTILES**  
**(DYEING & PRINTING )**  
**Paper- III**

Total Marks – 75  
Theory- 50  
Pract-15  
Int Ass- 10

**Objective :**

To study the dyeing & printing process on textile material.

**UNIT I**

- Introduction to dyeing and printing. Dyes and their classification – natural and synthetic.
- Types of natural dyes – plant, animal and mineral origin. Types of synthetic dyes – soluble, insoluble and ingrain, their structure and properties. Direct, basic, acid, vat, reactive,
- naphthol, sulphur, mordant, disperse dyes and pigment.

**UNIT II**

- Methods of dyeing. Selection of dyes for different fabrics
- Dyeing: Chromophores, Auxochromes, The General theory of Dyeing,
- Preparatory processes for dyeing and printing – wetting, scouring, bleaching and mercerization. Dyeing – stock, sliver, yarn, Union ,Cross , piece, dope and garment. • Solvent dyeing, foam dyeing, spray dyeing.
- Colour fastness to washing, lighting, rubbing and perspiration. Defects of dyeing

**UNIT III**

- Tie & dye and batik printing – types and methods. Printing techniques - Block, screen, roller, spray,
- stencil, duplex, discharge, resist, warp, flock, photographic and heat transfer printing. • Advantages and drawbacks of all these printing methods.
- Styles of printing: Direct, Discharge and Resist styles on cellulosic, Protein, manmade textiles and their blends.
- Printing with Natural dyes and synthetic dyes, Mordant Dyes , Reactive Dyes, Sulphur dyes, Vat dyes, Fluorescent brighteners.,

**UNIT IV**

- Printing paste: Constituents of print paste-Different ingredients used in printing paste
- After treatments: Steaming, curing, ageing of Prints.
- Different thickeners used in printing- Thickener and its types. Function of thickener. Selection of thickener.
- Printing defects in screen and roller printing and their remedy

## **Practicals**

1. Preparatory processes for dyeing and printing – wetting, scouring, bleaching and mercerization
2. Dyeing of cotton with direct dye
3. Dyeing cotton samples with vat dyes
4. Dyeing cotton samples with naphthol dyes
5. Dyeing cotton samples with different dye percentages
6. Preparation of Tie – dye samples – lehariya, pleating, chevron, knotting, triangular folding, spotting, batik, marbling and tritic
7. Dyeing tied samples with different colour combinations
8. Preparation, selection of material, dye and design for batik
9. Waxing, dyeing and after treatment
10. Preparation of value added articles by tie-dyeing/block printing/Batik painting
11. Fabric painting

## **Book recommended:**

Elementary idea of textile dyeing, by KVP Singh Kalyani Publishers printing and finishing.

## **Library reference:**

Textiles- Fiber to Fabric by Bernard P. Corbman McGraw Hill

- Bleaching and mercerization- E.R.Trotman,Charles Griffin co,London, 1993.
- Dyeing and chemical technology of textile fibers,Charles Griffin co, London.
- Textile printing-Dr.V.A. shenai,Sevak publications,Mumbai 1991.
- Textile finishing-Dr.V.A.shenai,Sevak publications,Mumbai
- Elementary idea of textile dyeing, by KVP Singh Kalyani Publishers printing and finishing.
- Textile Printing- LWC Miles.
- Textile Printing- VA Shenai.

Textiles- Fiber to Fabric by Bernard P. Corbman McGraw Hill

**Semester IV**  
**Resource Management**  
**(Housing and Home Furnishing)**  
**Paper – IV**

Theory – Periods / Week (Credit -2)  
Practical – Periods / Week (Credit -1)

Total Marks - 75  
Theory - 50  
Practical - 15  
Internal Assessment - 10

**Objectives** -To gain knowledge about the role of internal amenities in contributing for satisfying Family living

To learn technique that will help one to construct some furnishing items, relative to their Function and beauty.

**UNIT I -INTERNAL AMENITIES :-**

- (a) Interior Decoration –i)Essential factors of interior decoration ii)Available material For decoration iv)Decoration in various rooms
- (b) House Drainage – i)Bath water ii)Laundry water iii) House cleaning water
- (c) Methods of house drainage – i) Dilution ii) Purification iii)Soakage pits.
- (d) Waste Disposal - Types of Refuse – i)Dry ii)Solid iii) Liquid
- (e) Methods of waste disposal –i) Tipping or dumping ii) Taking in to the sea iii)Compost formation iv)Burning v) Conservancy system

**UNIT II - Lighting and Furniture –**

1:- (A) Natural Lightning

(B) Artificial Lightning : (i) Candles (ii) Oil Lamp (iii) Kerosine Lamp (iv) Gas Lighting (v) Electric Lighting

(C) Principles of Lighting: (i) Intensity (ii) Steady (iii) Glare (iv) Color (v) Safety (vi) Economy

(D) Types of Lighting : (i) Direct (ii) Semi-direct (iii) Indirect (iv) Semi-indirect (v) Diffuse

2:- Furniture

(A) Selection of furniture: (i) Expressiveness (ii) Styles (iii) Beauty (iv) Utility (v) Comfort (vi) Flexibility (vii) Durability (viii) Cost

(B) Material Required for construction: (i) Wood (ii) Metal and alloy (iii) Plastic (iv) Glass (v) Willow, rattan, cane.

(C) Care of furniture



## Unit III- Arrangement of Furniture

- 1: (a) application of art elements and principles in arrangement.  
(b) Various kinds of Architectural symbols used in scale drawing.  
(c) Arrangement in different rooms- (i) Living (ii) Dining (iii) Bedroom
- 2: Home Furnishing – (a) Necessity of curtains (b) Types of curtains (c) selection of curtains  
(d) making and hanging of curtains (e) Care and maintenance of curtains.

## Unit IV- Floor Coverings

- (A) Carpet and Rugs:  
(a) Factor affecting the selection- (i) Character (ii) Styles (iii) Pattern (iv) Texture (v) Durability  
(vi) Cost (vii) Color (viii) Size  
(b) Types of carpets and rugs.  
(c) Care of carpets and rugs.
- (B) Wall treatment- (i) Wallpapers (ii) Paints (iii) Tiles
- (C) Accessories in Interiors- (i) Hanging of pictures (ii) Relation of pictures to room (iii) Other Accessories

### COURSE CONTENT: Practicals

Total Marks-	15
Arrangement of furniture in different rooms-	04
Cleaning of different metals-	04
Furniture Polish-	04
Record Book -	03

- Exp. No. 1: Symbols of various kinds of furniture used in scale drawing.  
Exp. No. 2: Arrangement of furniture with the help of symbol in Drawing room.  
Exp. No. 3: Arrangement of furniture with the help of symbol in Bed room.  
Exp. No. 4: Cleaning of different metals copper, silver, iron, brass, aluminium.  
Exp. No. 5: Care and cleaning of furniture.

### COURSE CONTENT: Internal Assessment

Marks-10

- 1) Accessories in Home Decoration (any two)  
(a) Ceramic work / Clay Modeling /Pottery painting  
(b) Beed work, shell work  
(c) Floral Carpet / sanskarbharti rangoli /alpana rangoli.  
(d) Visit to ideal house / ideal kitchen /rock garden.

Note: (i) Workshop to be conducted to teach new articles.

### Books Recommended:

1. India', United Book Corporation, Poona, 2<sup>nd</sup> Edition.
2. Deshpande R. S. – 'Build your own Home', United Book Corporation, Poona, 4<sup>th</sup> Edition.
3. Deshpande R. S. – 'Low Cost Housing', United Book Corporation, Poona, 4<sup>th</sup> Edition.
4. Goldstein H. / Goldstein V. – 'Art in Every day Life' MacMillan Co., New York, 4<sup>th</sup> Edition.  
Pak – Tin & Helan Yeap – 'Feng Shui – Health Harmony' B.Jain Publishers Pvt Ltd., New Delhi, 1998.
5. Agan T. C. – 'The House' Oxford and I. B. H. publishing Co.
6. Ann Reilly; Susan A. Roth – 'The Home Landscape', Home planners Inco. Tucson, Arizona.
7. Deshpande R. S. – 'Modern Indian Homes in
8. Rutt A. – 'Home Furnishing', Wiley Eastern Pvt.Ltd., New Delhi, 2<sup>nd</sup> Edition.
9. Shrivastav – 'Remedial Vastu Shastra', Manoj Publication, Delhi, 2001.

**EXTENSION EDUCATION**  
**SEMESTER IV**  
**RURAL SOCIOLOGY**  
**Paper V**

THEORY:50  
PRACTICALS:15  
INTERNAL ASSESSMENT:10

**OBJECTIVES:**

- 1.To understand the nature of rural society and its problems.
- 2.To develop awareness regarding the women education.
- 3.To impart knowledge of factors affecting status of women in family.
- 4.To understand the role of vocationalisation in home science.

**Unit I- Rural Sociology**

Meaning and definition of rural society, importance of rural society, characteristics of rural society, rural social groups, classification of social groups, rural social institutions.

**Unit II- Women Education**

Status of women in India, education and development for tribal women, social welfare board, organizational services, legal and family counseling, profile of urban, rural, tribal, hill and slum women.

**Unit III- Status of women**

Factors affecting status of women in family.

- |                    |              |
|--------------------|--------------|
| 1) Types of family | 4) Values    |
| 2) Religion        | 5) Education |
| 3) Marriage        | 6) Economics |

**Unit IV- Vocationalisation in Home sc.**

Need and significance of vocationalisation in home sc.

Introduction of various vocational courses and job opportunities in different areas of home science.

## **Practicals**

- 1) Handling and operation of over head projector to provide knowledge on extension aspects.
- 2) Preparation of non-projected teaching aid poster for bringing awareness.

Study of Bachat Gat to analysis working pattern and submission of report

## **Internal Assessment**

Preparation of kitchen garden in college premises.

References:

- 1.Singh,K. Rural sociology, Prakashan Kendra, Lucknow.
2. Chandra,A.,Shah,A.Joshi,U. Fundamentals of teaching home science, Sterling publishing.pvt.ltd. New Delhi.
- 3.Dahama,O.P. & Bhatnagar O.P. Education & Communication for development, Oxford & B.M.Publishing, Co.Pvt. Ltd. New Delhi.
- 4.Supe,S.V. An introduction to Extension Education, Oxford & IBH Publishing Co.Ltd.,New Delhi.

# Applied Physiology

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## Paper-VI

### Unit 1 :-

- a) Blood - Composition and Functions of Blood, Blood Cells, Blood Groups , Blood Coagulation.
- b) Heart - Structure and function, Blood Vessels and their structure and function.

### Unit 2 :-

- a) Respiratory System - Structure and functions of respiratory Organs.
- b) Mechanism of Respiration.

### Unit :-3

- a) Female Reproductive System - Structure and Functions of Female Reproductive Organs, Physiology of Menstruation, Ovulation and Menopause.
- b) Male Reproductive System - Structure and Functions of Male Reproductive Organs Spermatogenesis.

### Unit :-4

- a) Nervous System - Structure of Neuron , Structure and function of Cerebrum and Cerebellum.
- b) Endocrine Glands :- Structure and Function of Pituitary Gland, Thyroid Gland and Adrenal Gland.

## Practicals

Marks -25

Distribution : - Experiment -06

Spotting - 04

Bandage - 05

Viva-voce - 05

Record - 05

1. To detect the Bleeding time.
2. To detect the Clotting Time .
3. Application of Triangular Bandage.
4. First Aid.

## **References / Books Recommended**

- 1) Human Physiology - C.C.Chatterjee
- 2) Anatomy and Physiology for Nurses - Pears
- 3) Text book of Medical Physiology - A.C. Guyton
- 4) Foundation of Anatomy and Physiology - Ross and Wilson

**B.Sc.II (Home-Science)**  
**Semester - IV**  
**Basic Chemistry**  
**Paper VII**

**Unit - I**

Organic Compounds: Definition, classification of organic compounds, saturated and unsaturated hydrocarbons, general formulae of alkanes, alkenes and alkynes, functional groups in organic compounds, IUPAC nomenclature of alkanes.

**Unit - II**

Preparations, chemical properties and uses of methane, ethylene and acetylene.

**Unit – III**

Fermentation : Definition, ideal conditions for fermentation, preparation of vinegar and ethanol by fermentation process.

Optical Isomerism – Definition of isomerism, asymmetric carbon atom, plane polarized light, dextro, laevo and meso compounds.

**Unit – IV**

Carbohydrates : Definition, Classification ( sugars and non-sugars; mono, di, tri and polysaccharides), classification of monosaccharides, open chain formulae and chemical properties of Glucose and Fructose ( oxidation, reduction, osazone formation and fermentation)

**Practicals:**

1. Elements and group detection of organic compounds
2. Identification of Carbohydrates – ( Glucose, Fructose, Sucrose and Starch)

**Books Recommended**

1. Text Book of Engineering Chemistry - S.Chand Co. Dara,
2. Text book of Basic Applied chemistry - P.C.Jain and Monica Jain
3. Text Book of Applied Chemistry - T. Jacob
4. Text book of Organic Chemistry – I. L. Finar

**B.Sc. Home Sci. -II**  
**Sem.III**