

**VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT**

**HOME SCIENCE (CBCS SCHEME)**

**B.A. SEMESTER-1**

**Effective From June 2012-2013**

Sr. No.	COURSE TYPE	SUBJECT	T P Total			CONTACT PERIODS	MARKS EXT.	MARKS INT.
					credits			
1	FC	COMPULSORY LANGUAGE ENGLISH/ GUJARATI/ HINDI	3	-	-	3	70	30
2	CA	SANSKRIT/STATISTICS/ LIFE- SPAN DEVELOPMENT- I	3	-	-	3	70	30
3	FE	ENVIRONMENT / HUMAN RIGHTS / FAMILY STUDIES	3	-	-	3	70	30
4	CC- 1	FUNDAMENTALS OF FOODS & NUTRITION- I	3	1	4	5	70	30
“	CC- 2	HOME MANAGEMENT- I	3	1	4	5	70	30
5	CE- I	FUNDAMENTALS OF FASHION DESIGNING	3	1	4	5	70	30
“	CE-2	FAMILY AND COMMUNITY SCIENCE AND TEACHING AIDS	3	1	4	5	70	30
“	CE- 3	INTRODUCTION TO MEDICINAL PLANTS	3	1	4	5	70	30
6	Extension Activity	<b>(Any One of Following)</b> NCC NSS PT SAPTADHARA	-	-	2	4 hours		

NOTE: - Students will have to select any two Core Elective courses out of three.

FC- Foundation Compulsory, CA- Core Allied, FE – Foundation Elective,

CC- Core Compulsory, CE – Core Elective

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**B.A. SEMESTER-2**

**Effective From June 2012-2013**

Sr. No.	COURSE TYPE	SUBJECT	T P Total			CONTACT PERIODS	MARKS EXT.	MARKS INT.
					Credits			
1	FC	COMPULSORY LANGUAGE ENGLISH/ GUJARATI/ HINDI	3	-	-	3	70	30
2	CA	SANSKRIT/STATISTICS/ LIFE-SPAN DEVELOPMENT-II	3	-	-	3	70	30
3	FE	ENVIRONMENT / HUMAN RIGHTS / FAMILY STUDIES	3	-	-	3	70	30
4	CC- 3	FUNDAMENTALS OF FOODS & NUTRITION- II	3	1	4	5	70	30
“	CC- 4	HOME MANAGEMENT- II	3	1	4	5	70	30
5	CE- 4	FASHION DESIGNING	3	1	4	5	70	30
“	CE-5	INTRODUCTION TO EXTENSION EDUCATION	3	1	4	5	70	30
“	CE- 6	APPLICATION OF MEDICINAL PLANTS	3	1	4	5	70	30
6	Extension Activity	<b>(Any One of Following)</b> NCC NSS PT SAPTADHARA	-	-	2	4 hours		

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**HOME SCIENCE (CBCS SCHEME)**

**B.A. SEMESTER -3**

**Effective From June 2012-2013**

Sr. No.	COURSE TYPE	SUBJECT	T P Total			CONTACT PERIODS	MARKS EXT.	MARKS INT.
					credits			
1	FC	COMPULSORY LANGUAGE ENGLISH/ GUJARATI/ HINDI	3	-	-	3	70	30
2	FE	LOCAL SELF GOVERNMENT	3	-	-	3	70	30
3	CC- 5	FAMILY MEAL PLANNING – I	3	1	4	5	70	30
“	CC- 6	ART AND CRAFT –I	3	1	4	5	70	30
“	CC- 7	FAMILY CLOTHING	3	1	4	5	70	30
4	CE- 1	HUMAN DEVELOPMENT	3	1	4	5	70	30
“	CE- 2	FOOD ADULTERATION	3	1	4	5	70	30
“	CE- 3	EXTENSION EDUCATION AND AUDIO VISUAL AIDS	3	1	4	5	70	30
5	Extension Activity	<b>(Any One of Following)</b> NCC NSS PT SAPTADHARA	-	-	2	4 hours		

NOTE: - Students will have to select any two Core Elective courses out of three.

FC- Foundation Compulsory, FE – Foundation Elective, GF – Generic Foundation

CC- Core Compulsory, CE – Core Elective

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**HOME SCIENCE (CBCS SCHEME)**

**B.A. SEMESTER - 4**

**Effective From June 2012-2013**

Sr. No.	COURSE TYPE	SUBJECT	T P Total			CONTACT PERIODS	MARKS EXT.	MARKS INT.
					Credits			
1	FC	COMPULSORY LANGUAGE ENGLISH/ GUJARATI/ HINDI	3	-	-	3	70	30
2	FE	LOCAL SELF GOVERNMENT	3	-	-	3	70	30
3	CC- 8	MEAL PLANNING –II	3	1	4	5	70	30
“	CC- 9	ART AND CRAFT – II	3	1	4	5	70	30
“	CC- 10	HOUSEHOLD AND TRADITIONAL TEXTILES	3	1	4	5	70	30
4	CE- 4	FIRST AID AND HOME NURSING	3	1	4	5	70	30
“	CE- 5	WATER MANAGEMENT	3	1	4	5	70	30
“	CE- 6	SOCIAL WELFARE AND COMMUNITY DEVELOPMENT	3	1	4	5	70	30
5	Extension Activity	<b>(Any One of Following)</b> NCC NSS PT SAPTADHARA	-	-	2	4 hours		

NOTE: - Students will have to select any two Core Elective courses out of three.

FC- Foundation Compulsory, FE – Foundation Elective, GF - Generic Foundation

CC- Core Compulsory, CE – Core Elective

**VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT**

**HOME SCIENCE (CBCS SCHEME)**

**B.A. SEMESTER -5**

**Effective From June 2013-2014**

Sr. No.	COURSE TYPE	SUBJECT	T P Total			CONTACT PERIODS	MARKS EXT.	MARKS INT.
					credits			
1	FC	COMPULSORY LANGUAGE ENGLISH/ GUJARATI/ HINDI	3	-	-	3	70	30
2	CC-11	DIET THERAPY- I	3	1	4	5	70	30
3	CC-12	FAMILY HOUSING	3	1	4	5	70	30
4	CC- 13	TEXTILE SCIENCE-I	3	1	4	5	70	30
5	CC- 14	FOOD PRESERVATION- 1	3	1	4	5	70	30
6	CC- 15	COMMUNICATION IN EXTENSION	3	1	4	5	70	30
7	CC-16	HUMAN PHYSIOLOGY- I	3	1	4	5	70	30
8	Extension Activity	<b>(Any One of Following)</b> NCC NSS PT SAPTADHARA	-	-	2	4 hours		

NOTE:- FC- Foundation Compulsory, CC- Core Compulsory,

**VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT**

**HOME SCIENCE (CBCS SCHEME)**

**B.A. SEMESTER -6**

**Effective From June 2013-2014**

Sr. No.	COURSE TYPE	SUBJECT	T P Total			CONTACT PERIODS	MARKS EXT.	MARKS INT.
					credits			
1	FC	COMPULSORY LANGUAGE ENGLISH/ GUJARATI/ HINDI	3	-	-	3	70	30
2	CC-17	DIET THERAPY- II	3	1	4	5	70	30
3	CC-18	FAMILY FINANCE MANAGEMENT	3	1	4	5	70	30
4	CC- 19	TEXTILE SCIENCE-II	3	1	4	5	70	30
5	CC- 20	FOOD PRESERVATION- II	3	1	4	5	70	30
6	CC- 21	FOLK MEDIA IN EXTENSION	3	1	4	5	70	30
7	CC-22	HUMAN PHYSIOLOGY- II	3	1	4	5	70	30
8	Extension Activity	<b>(Any One of Following)</b> NCC NSS PT SAPTADHARA	-	-	2	4 hours		

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – V**

**HOME SCIENCE – (CC-11)**

**(DIET THERAPY-I)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Theory : External – 50 Marks

Internal - 20 Marks

Practical- 1 Credit (2 Periods/week)

Practical : External – 20 Marks

Internal – 10 Marks

**FOCUS:-**

This course emphasizes the importance of diet in therapeutic management & the role of the dietitian as a part of the medical team engaged in ensuring patient's health & well being.

**OBJECTIVES :**

1. To provide practical laboratory training in the preparation of special diet.
2. To understand the role of diet in the management of a various diseases and apply same to patients.
3. To adopt these diets by patients with various disorders.

**THEORY :**

**UNIT –1 INTRODUCTION**

- 1:1 Basic concepts of the diet therapy.
- 1:2 Role of dietitian as a member of health team.
- 1:3 Therapeutic adaptations of the normal diet- soft diet, liquid and semi liquid diet.
- 1:4 Methods of feeding.
- 1:5 Factors in nutritional care of the patient.

**UNIT – 2 MODIFICATION OF THE DIET IN FEVERS AND INFECTIONS.**

- 2:1 Classification
- 2:2 Metabolic changes
- 2:3 Principles of dietary planning : (1) Tuberculosis (2) Typhoid (3) Malaria

**UNIT –3 MODIFICATION OF THE DIET IN GASTRO INTESTINAL DISORDERS:-**

Etiology, symptoms , diagnosis (wherever applicable) & principles of the diet.

- 3:1 Indigestion
- 3:2 Gastritis

- 3:3 Peptic ulcer
- 3:4 Diarrhoea
- 3:5 Constipation
- 3:6 Sprue

**UNIT – 4 (A) MODIFICATION OF DIET IN LIVER AND GALL BLADDER :-**

Etiology, symptoms diagnosis (wherever applicable) & principles of the diet.

- 4:1 Jaundice
- 4:2 Cirrhosis of liver
- 4:3 Hepatic coma
- 4:4 Cholecystitis & cholelithiasis

**(B)** Definition, symptoms, diagnosis and principles of diet in food allergy

**(C)** Nutritional anemia

**PRACTICALS:**

- (1) Keeping in mind the recommended daily nutritional requirements of the patient, students should plan a day's menu and calculate nutritive value for the same.
- (2) Foods should be categorized as follows
  - Foods to be avoided
  - Foods to be taken
  - Foods to be taken in limited amount.
- (3) One of the recipes from the menu plan should be selected and actually prepared by the students.
  - (i) Clear liquid and full liquid
  - (ii) Soft diet
  - (iii) Typhoid
  - (iv) Tuberculosis
  - (v) Diarrhoea
  - (vi) Atonic constipation
  - (vii) Spastic constipation
  - (viii) Peptic ulcer
  - (ix) Sprue
  - (x) Jaundice
  - (xi) Anemia

**MARKING SCHEME**

Whole day's planning	05 Marks
Selection of dish	04 Marks
Taste	02 Marks

Calculation	03 Marks
Viva	02 Marks
Journal	04 Marks
<b>Total</b>	<b>20 Marks</b>

**REFERENCES :**

1. Garrow J.S. & wpt (1993) " Human Nutrition & Dietetics " Churchill livingstone.
2. Sizer F.S. & Whitney E.N. (1997) " Nutrition " wordworth publishing company. London
3. Antia F.P. (1989) " Clinical Dietetics & Nutrition " Oxford University press (Bombay)
4. Kruse M.M.Mahan L.K. & Escotts S. (1996) Kruse's " Food Nutrition & Diet therapy " Philadelphia. W.b.Saunders.
5. B.Shrilaxmi " Dietetics " .

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – V**

**HOME SCIENCE – CC-12**

**(FAMILY HOUSING)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Theory : External – 50 Marks

Internal - 20 Marks

Practical- 1 Credit (2 Periods/week)

Practical :External – 20 Marks

Internal – 10 Marks

**FOCUS:** This course deals with planning of residential space of different sizes.

**OBJECTIVES:**

1. To acquire knowledge of principles involved in designing of residential spaces.
2. To acquire knowledge of housing and financial funds.
3. To gain knowledge on furnishing and furniture.

**UNIT-1 Family's housing needs**

- 1.1 Protective/ Physical
- 1.2 Economical/ Standard of living
- 1.3 Affection /Social
- 1.4 Psychological

**UNIT-2 Factors affecting selection and purchase of house.**

- 2.1 Location
- 2.2 a) Physical features  
b) Neighborhoods  
c) Soil condition  
d) Sanitary condition
- 2.3 Legal factors
- 2.4 Occupation and other activities
- 2.5 Stages of family life cycle

### **UNIT-3 Consideration of important features of house planning**

- 3.1 Orientation
- 3.2 Grouping
- 3.3 Circulation
- 3.4 Roominess
- 3.5 Economy
- 3.6 Privacy
- 3.7 Flexibility
- 3.8 Zoning
- 3.9 Aesthetics

### **Unit-4 (A) Furniture selection and arrangement**

- 4.1 Origin and need of furniture: Essential and Accessory
- 4.2 Selection of furniture, construction, material and wood and their types, metals used. Upholstered furniture-frame, base for spring, fabrics, filling and construction of mattresses, Pillows and their filling, stone, marble, silver furniture, carved furniture.
- 4.3 Furniture arrangement
- 4.4 Cleaning and care

#### **(B) FLOWER ARRANGEMENT**

#### **PRACTICALS:-**

Unit-I Furniture layout and planning of floor plan on graph paper 4 Practicals

- (a) Living room- Western/Indian
- (b) Kitchen-“U”, “L”, “I”, “II” wall platforms(Any one)
- (c) Bed room-Single/Double/Children

Unit-II Furniture layout and planning of elevation plan on 4 Practicals

graph paper.

- (a) Living room- Western/Indian
- (b) Kitchen-“U”, “L”, “I”, “II” wall platforms(Any one)
- (c) Bed room-Single/Double/Children

Unit-III Rendering techniques for different materials and finishes

- (1) Water colors ( fuji poster)
- (2) Pencil colors
- (3) Pencil shading
- (4) Pen and Ink
- (5) Texture Chart ( wood, cloth, rugs, stone)

Unit-IV Draw a floor plan and elevation plan of any three furniture 3 Practicals

on drawing sheet and color it with color schemes you have learned.

- (a) Sofa
- (b) Kitchen cabinet
- (c) Wall Unit
- (d) Ward robe
- (e) Easy chair
- (f) Side chair
- (g) Stool

**MARKING SCHEME:-**

Q 1 Unit 1 to 2	08 Marks
Q 2 Unit 4	08 Marks
Journal	04 Marks
<b>Total</b>	<b>20 Marks</b>

**REFERENCES:-**

1. Anna Hong Rutt, Home Furnishing(Unit-I)
2. Bela Bhargav-Family Resource Management-(Unit I,II,IV,VI)
3. Bhatt N.D., Elementary Drawing, Anand, Charotar Publication House
4. Conran Terrance, New House Book (Unit-II,III,IV)
5. Craig &Rush, Homes with Character
6. Deshpandey R.S., Modern Ideal Homes for India (Unit-III,IV)
7. Deshpandey R.S., Build Your Own Home, United Book Corporation. Unit-III,IV)
8. Donald Anderson, Elements of Design
9. Indian Standard Institute, National Building Code Unit-III,IV)
10. Sanjeev Sarkar-Interior Design & Decoration (Unit-I,II,III,IV)
11. Shah M.G., Kale G.M. & Patki S.Y., Building Drawing with an Integrated Approach, Tata McGraw Hill Publishing Co.
12. Varghese M.A., Ergonomics in Kitchen Design
13. Veena Gandotra-Interior Design & Decoration (Unit-I,II,III,IV)

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – V**

**HOME SCIENCE – CC-13**

**(TEXTILE SCIENCE - I)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Theory : External – 50 Marks

Internal - 20 Marks

Practical- 1 Credit (2 Periods/week)

Practical :External – 20 Marks

Internal – 10 Marks

**FOCUS:-** This course covers classification, properties, uses of fibres, yarns and fabrics,  
Manufacturing process of yarns and fabrics.

**OBJECTIVES:-**

- 1 To acquire knowledge of different fibres , yarns and fabrics used in Textiles.
- 2 To acquire knowledge of manufacturing process of fabrics.

**COURSE CONTENT:-**

**THEORY**

**UNIT- 1 Fibre classification and manufacturing process**

1:1 Fibre classification.

1:2 General properties of fibres

1:3 Manufacturing process of fibres

(A) Natural fibres

1 Cellulose fibres:- Cotton, Linen

2 Protein fibres:- Wool, Silk

3 Mineral fibres:- Asbestos, Metal, glass fibres.

(B) Man made fibres

- 1 Cellulosic fibres:- Rayon
- 2 Non cellulosic fibres:- Nylon, Polyester, Acrylic

#### **UNIT-2 Yarn structure**

- 2:1 Spinning Process:- (1) Dry spinning (2) Wet spinning
- 2:2 Types of yarn:-
  - (1) Simple yarn
  - (2) Complex yarn- Slub Yarn, Flock Yarn, Boucle Yarn, Ratine and Gimp Yarn Loop Yarn, Nub and Knot Yarn, Grandrelle Yarn , Seed Yarn, Spiral Yarn, Chennile Yarn
  - (3) Textured Yarn
- 2:3 Yarn properties- Thread and yarn, yarn twist, yarn numbers

#### **UNIT-3 FABRIC CONSTRUCTION- WOVEN FABRICS**

- 3:1 Weaving process- construction of loom
- 3:2 Types of weaves
  - 1 Plain weaves:- Plain weave, Rib weave, Basket weave, Twill weave & its types, Satin & Sateen weave.
  - 2 Decorative weaves:- Dobby weave, Jacquard weave, Leno weave, Surface Figure weave, Lappet weave, Spot weave, Pile weave, Double Weave.

#### **UNIT- 4 FABRIC CONSTRUCTION- NON –WOVEN FABRICS**

- 4:1 Non woven fabrics:- Felt, bonded fibre fabrics
  - (A) Knitted fabrics- 1 Weft or Filling knits
    - 2 Warp knits
  - (B) Braided fabrics, Nets, Laces, Multi component fabrics, Tufted fabrics

#### **PRACTICALS:-**

- 1 Identification of Textile fibres
  - (a) Microscopic test
  - (b) Burning test
- 2 Construction of following garments:-

(i) Dress- (a) Top (b) salwar/ choodidaar

(ii) Sari blouse

3 Construction of weaves on paper.

#### MARKING SCHEME

Q 1	Identification of fibres	02 marks
Q 1	Construction of any one garment	05 marks
Q 2	Making weave	03 marks
	Class work	06 marks
	Journal	04 marks
	<b>Total</b>	<b>20 marks</b>

#### REFERENCES:-

- 1 Bernard P. Corbman, Textiles: Fiber to Fabric, McGraw-hill International editions, 1983
- 2 Hess K.P., Textile fibers and their use
- 3 Joseph M., Introduction to textile science
- 4 Potter and Corbman, Fiber to Fabric, McGraw-hill International editions
- 5 Shinkle J.H., Textile Testing
- 6 Wingate, I.B., Textile Fabrics and their Selection, Prentice Hall, New Jersey
- 7 Barker, A.F., Handbook of Textiles, Abhishek Publication, Chandigarh, 1998
- 8 E.P.G. Gohl, L.D. Vilensky, Textile Science, CBS Publishers & Distributors, Delhi, 1987
- 9 Hall, A.J., The Standard Handbook of Textiles, The English Language Book Society & Heywood Books, 1965
- 10 Reena Bhatia & Charu Arora, Introduction to Clothing & Textiles, Madhu Printery, Baroda, 1999.
- 11 Raul Jewel, Encyclopaedia of dress making, A.P.H. Publishing Corporation, New Delhi.
- 12 Anna Jacob Thomas, The Art of Sewing, UBS Publishers Distributors Ltd.
- 13 Zarapkar K.R., Zarapkar System of Cutting, Navneet Publications Ltd.
- 14 હોમી કાવસજી પટેલ, લાબેલોશન બુક ઓફ કટિંગ ગ, હરિહર પ્રકાશન, સુરત
- 15 Parikh J.D., Manmade fabrics for developing countries, Sasmira, Bombay

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – V**

**HOME SCIENCE – CC-14**

**(Food preservation I)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical : External – 20 Marks

Internal – 10 Marks

**Focus ;**

The course has been formulated to give a clear understanding of the various principles involved in food preservation and the storage methods which enhance shelf-life of food and ensures safety .

**OBJECTIVES :**

- (1) To understand the scientific principles underlying food preservation.
- (2) To develop skills and techniques in food preservation ensuring safety, conservation of nutrients and palatability.
- (3) To understand the basic principles underlying food preservation as an income generating activity.

**COURSE CONTENT:-**

**THEORY :**

**UNIT – 1 INTRODUCTION TO FOOD PRESERVATION**

- 1:1 History, scope and importance of food preservation
- 1:2 Basic principles of food preservation.
- 1:3 Classification of methods of food preservation.
- 1:4 Equipments used in food preservation.
- 1:5 Food spoilage - general principles, causes, physical and chemical changes during food spoilage.
- 1:6 Primary sources of micro organisms in foods – physical and chemical methods used in the destruction of micro organisms (sterilization and disinfection).

## **UNIT-2 PRESERVATION BY TEMPERATURE**

- 2.1 Preservation by use of low temperature.
  - (a) Principles involved in freezing.
  - (b) Different methods of freezing various foods.
  - (c) Changes during freezing.
  - (d) Types of containers used.
- 2.2 Preservation by use of high temperature
  - (a) Different methods
  - (b) Types of containers used.
  - (c) Spoilage of canned foods

## **UNIT – 3 PRESERVATION BY OSMOTIC PRESSURE**

- 3.1 High concentration of sugar
  - (a) Jam : Definition, materials used, step by step method of preparing jam, quality of good jam, difficulties in preparing jam, spoilage of jam.
  - (b) Jelly : Definition, materials used, step by step method of preparing jelly, theory of jelly formations, qualities of an ideal jelly, difficulties in preparing jelly, spoilage of jelly.
  - (c) Marmalade : Definition, types, materials used, step by step method of preparing marmalade, qualities of good marmalade, spoilage of marmalade.
- 3.2 High concentration of salt :
  - (a) Pickles : Pickling process, types, methods of preparation, spoilage and causes of spoilage.
  - (b) Chutneys and Sauces : Types, methods of preparation, spoilage and causes of spoilage.

## **UNIT – 4**

- 4.2 Milk and milk products : Various methods of preservation of milk, types. Manufacturing process of cheese, butter and ghee.
- 4.3 Food poisoning : Types, causes, symptoms and prevention.

### **:PRACTICALS :**

- (1) Sterilization
- (2) Freezing of vegetables and foods
- (3) Jam
- (4) Jelly
- (5) Marmalade
- (6) Pickles
- (7) Chutney
- (8) Tomato ketchup

**MARKING SCHEME:-**

Q.1 To write full procedure of the following

Sterilization / canning / bottling / freezing 04 Marks

Q.2 Prepare any one of the following

Chutney / tomato ketchup 04 Marks

Q.3 Prepare any one of the following

Jam / Jelly / marmalade / pickle 06 Marks

Viva 02 Marks

Journal 04 Marks

Total **20 Marks**

**REFERENCES :**

1. " Advance food science ". Roytrope wood. Orient Longman Bombay 1973.
2. " Food microbiology " Fraizer W.C.
3. " Preservation of fruits and vegetables " Girdharilal G.S.Siddappa.
4. " Food preservation " by CFTRI Hyderabad.
5. The Brochure of " Home seed food preparation series " by CFTRI Hyderabad.
6. "Modern food preservation " Mc Williams and paine surjeet publication.
7. "Home scale food preparation " by CFTRI Hyderabad.
8. "Food science " by B. Srilaxmi.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – V**

**HOME SCIENCE – CC-15**

**(Communication in Extension)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical :External – 20 Marks

Internal – 10 Marks

**Objectives:**

To enable students to-

- 1 Understand the process of communication in development work.
- 2 Develop skills in the use of media.

**COURSE CONTENT**

**THEORY**

**UNIT-1**

**1.1 Concept and scope of communication**

- (i) Meaning of communication.
- (ii) Definitions of communication.
- (iii) Scope of communication

**UNIT-2**

**2.1 Communication Process.**

- (i) Elements of Extension communication system.
- (ii) Communication process.

### UNIT-3

#### 3.1 The model of communication process.

- (i) O.P. Dhama model
- (ii) Westley and Machean model
- (iii) Leagan's model
- (iv) Aristotle model

### UNIT- 4

#### 4.1 Basic functions of communication in extension.

- (i) The information function
- (ii) Command or instructive function
- (iii) Influence or persuasive function
- (iv) Intergative function

### PRACTICALS

#### Preparing and using following aids:

- (1) Cartoon and comics..... 1 period
- (2) Pamphlet..... 1 period
- (3) Leaflet..... 1 period
- (4) Folder..... 1 period
- (5) Finger Puppets..... 2 period

### MARKING SCHEME

Q 1	Practical 1 to 2	06 marks
Q 2	Practical 3 to 5	06 marks
	Journal	03 marks
	Class work	05 marks
	<b>Total</b>	<b>20 marks</b>

## REFERENCES:

- (1) Dr.Hemant Khandai,Prof. Kalika Yadav,Anshu Mathur," Extension Education"2011.
- (2) G.L.Ray, "Extension communication and Management, 4<sup>th</sup> edition, 1999. Naya prokash, Calcutta, India.
- (3) O.P.Dhama,O.P.Bhatnagar; Education and communication for development , second edition,Oxford & IBH publishing co. pvt.ltd, New Delhi. 2007.
- (4) Mehta Neepa, Mehta Avani-Designing Graphic Aids. Department of Home Science.Extension & communication,M.S.University, Vadodara
- (5) Das Nivedita –" Teaching of Home Science," Dominant Publishers and Distributors, New Delhi.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – V**

**HOME SCIENCE – CC-16**

**(HUMAN PHYSIOLOGY -1)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical : External – 20 Marks

Internal – 10 Marks

**OBJECTIVES:-**

- 1 To understand structure and functions of various organs of physiological systems of human being.
- 2 To serve as a sound basis for the study of nutrition and food science.
- 3 Understand alterations of structure and functions in various organs on disease conditions.

**COURSE CONTENT:-**

**THEORY**

**UNIT -1**

- 1.1 Enzyme : Definition, Composition, Properties, Nomenclature, Mode of action, Biological importance, Enzyme inhibitor, Coenzyme
- 1.2 Animal tissues : Definition, Types-their structure and functions in brief.

**UNIT –2**

2.1 Digestive System

- (a) Anatomy and process of digestion (In brief)
- (b) Accessory digestive glands: structure and functions

### UNIT -3

#### 3.1 Cardiovascular system :

- (a) Composition and functions of blood
- (b) Coagulation of blood
- (c) Structure and functions of Heart, Artery, Vein

#### 3.2 Immune system : (in brief)

- (a) Antigen – Antibody concept
- (b) Importance of antigen- antibody reaction and uses of antibodies:

### UNIT -4

#### 4.1 Respiratory system :

- (a) Structure and functions of respiratory organs
- (b) Mechanism of respiration

### PRACTICALS:-

- (1) Biochemical tests of Starch, Protein and Lipid.
- (2) Effects of enzyme Amylase on starch.
- (3) Preparation of blood smear.
- (4) Estimation of Haemoglobin proportion.(only demonstration)
- (5) Study of animal tissues- simple squamous epithelium, Areolar tissue, striated muscles, modulated nerve fibre.
- (6) Study of human physiological systems from models,charts etc.  
Organs- external structure and functions of
  - Digestive system
  - Cardiovascular system
  - Respiratory system

### MARKING SCHEME:-

- Q 1 Do as directed of the following : viva 06 marks
- Effects of enzyme Amylase on starch.
  - Prepare blood smear.
- Q 2 Biochemical tests : Starch / Protein / Lipid 04 marks

Q 3 Identify and describe specimens no. 1 to 4.	06 marks
Journal	04 marks
<b>Total</b>	<b>20 marks</b>

**REFERENCES :**

- 1 Human Physiology - C.C.Chatterjee
- 2 Human Physiology - Wright
- 3 Essentials of Medical Physiology - K. Sembulingam, Prema Sembulingam  
Jaypee Brothers Medical Publisher (P) Ltd.
- 4 Manavsharir, Karyavidnyan Tatha Prathmik Sutikashastra Gujarati version)  
Dilip P.Mehta
- 5 Practical medicine for student and practioner - P.J.Mehta
- 6 Manual of laboratory technique - National institute of Nutrition, Hydrabad
- 7 Pranishastra – Gujarat granthnirman board, Ahmedabad
- 8 General Biochemistri and Animal physiology- Dr.M.C.Duble, Dr.(miss)N.J.Chinoy:University  
granthnirman board, Gujarat, Ahmedabad (Gujarati version)

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – VI**

**HOME SCIENCE – CC-17**

**(DIET THERAPY-II)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical :External – 20 Marks

Internal – 10 Marks

**FOCUS:-** This course emphasizes the importance of diet in therapeutic management & the role of the dietitian as a part of the medical team engaged in ensuring patient's health & well being.

**OBJECTIVES :**

- 1 To provide practical laboratory training in the preparation of special diet.
- 2 To understand the role of diet in the management of a various diseases and apply same to patients.
- 3 To adopt these diets by patients with various disorders.

**COURSE CONTENT**

**THEORY:-**

**UNIT- 1**

**1.1 Modification of the diet in the disease of pancreas – diabetes mellitus**

- (a) Types
- (b) Causes
- (c) Symptoms
- (d) Diagnosis
- (e) Dietary modification
- (f) Insulin therapy
- (g) Oral hypoglycemic agent
- (h) Sugar substitutes
- (i) Complications
- (j) Non pharmacological treatment

## **UNIT – 2 Dietary modification in hypertension and cardiovascular disorders**

- 2.1 Hypertension :
  - (a) Definition, classification, symptoms, causes, nutritional requirements, prevention
  - (b) Dietary modification
  - (c) Non pharmacological treatment
  - (d) Use of salt alternatives
- 2.2 Low blood pressure : Definition, causes, symptoms and dietary modification
- 2.3 Atherosclerosis : causes, symptoms and dietary modification
- 2.4 Diet bypass surgery and heart attack

## **UNIT – 3 Modification of the diet in renal disorders :-**

Etiology, symptoms, diagnosis (wherever applicable) and principles of the diet.

- 3.1 Glomerulonephritis
- 3.2 Ephrotic syndrome
- 3.3 Renal failure/uremia
- 3.4 Dialysis
- 3.5 Urinary calculi

## **UNIT –4**

- 4.1 Modification of the diet in musculoskeletal disorders

Etiology, symptoms and dietary modification

- (a) Rheumatoid arthritis
  - (b) Osteoporosis
  - (c) Gout
- 4.2 (a) Nutritional and non nutritional etiological factors of cancer
  - (b) Management of cancer patients in relation to the clinical treatment and cachexia.

## **PRACTICALS:**

- (1) Keeping in mind the recommended daily nutritional requirements of the patient, students should plan a day's menu and calculate nutritive value for the same.
- (2) Foods should be categorized as follows
  - Foods to be avoided
  - Foods to be taken
  - Foods to be taken in limited amount.
- (3) One of the recipes from the menu plan should be selected and actually prepared by the students.
  - (i) Over weight diabetic male
  - (ii) Pregnant diabetic female
  - (iii) Diabetic child
  - (iv) Moderate hypertension

- (v) Low blood pressure
- (vi) Atherosclerosis
- (vii) Heart attack
- (viii) Acute nephritis
- (ix) Gout

**MARKING SCHEME:**

Whole day's planning	05 Marks
Selection of dish	04 Marks
Taste	02 Marks
Calculation	03 Marks
Viva	02 Marks
Journal	04 Marks
<b>Total</b>	<b>20 Marks</b>

**REFERENCES :**

- (1) Garrow J.S. & wpt (1993) " Human Nutrition & Dietetics " Churchill livingstone.
- (2) Sizer F.S. & Whitney E.N. (1997) " Nutrition " wordworth publishing company. London
- (3) Antia F.P. (1989) " Clinical Dietetics & Nutrition " Oxford University press (Bombay)
- (4 ) Kruse M.M.Mahan L.K. & Escotts S. (1996) Kruse's " Food Nutrition & Diet therapy " Philadelphia. W.b.Saunders.
- (4) B.Shrilaxmi " Dietatics " .

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – VI**

**HOME SCIENCE – CC-18**

**(Family Finance Management)**

**With effect from 2013- 2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical :External – 20 Marks

Internal – 10 Marks

**FOCUS:** The course on financial management is designed to understand the Function of family as an economic unit. The income expenditure, credit, savings and investments are the other aspects the course dealt with.

**OBJECTIVES:** To enable students to-

- 1 Understand the internal and external factors affecting financial decision.
- 2 Be able to use to make wise use of money.
- 3 Develop entrepreneurship skills.
- 4 Analyze the environment related to small scale industry and business.

**UNIT-1 MONEY MANAGEMENT**

1:1 Importance and meaning of money.

1:2 Types of family income

- (A) Money income
- (B) Real income
- (C) Psychic income
- (D) Total income

1:3 Stages of Money Management Process.

- (A) Planning
  - i Recognition of goals
  - ii Family life cycle
  - iii Analysis of long and short term income
  - iv Coordinating short and long time income use with needs
  - v Methods of handling money
- (B) Controlling
- (C) Evaluation

**UNIT-2** Budget

- 2:1 Importance and types of budget
- 2:2 Steps involved in making budget
- 2:3 Types of budget

**UNIT-3** Savings and Investment

- 3:1 Purpose and meaning of savings
- 3:2 Types of savings
  - (A) Compulsory savings
    - I Provident fund
    - ii Pension plan
    - lii Gratuity
  - (B) Voluntary savings
    - I Bank-types of accounts
    - II Post office savings scheme
    - III Unit Trust of India
    - IV Shares
    - V Mutual Fund
    - VI Debentures
    - VII Life Insurance Policy- Types and schemes
- 3:3 Investment
  - Types and meaning of investment

**UNIT-4** Credit

- 4:1 Meaning and Definition
- 4:2 Family's use of credit
- 4:3 Basis of credit
- 4:4 Types of credit
- 4:5 Legal credit instruments

**PRACTICALS:**

- 1 Fabric painting 4 practicals
  - (1) Rules of painting
  - (2) Shading
  - (3) Make a sample on saree / choonary / bed spread / wall piece
- 2 Non conventional printing 2 practicals
  - (1) Vegetable printing
  - (2) Spray printing
  - (3) Finger tips printing
  - (4) Leaf printing

Make a sample on saree / choonary / Table Mats / Table lamp shade

- 3 Pottery Painting  
Tiles / Velvet Painting
- 4 Floor Decoration
  - (1) Flowers and leaves
  - (2) Saw dust
  - (3) Pulses and Grains
  - (4) Alpana
  - (5) Kolam
  - (6) Karothi
  - (7) Salt

**MARKING SCHEME :**

Q 1 Banking-	03 marks
Q 2 Fabric painting	04 marks
Q 3 Non conventional Printing	04 marks
Journal	04 marks
Class work	05 marks
<b>Total</b>	<b>20 marks</b>

**REFERENCES :**

- 1 Bigelow: Family Finance
- 2 Gross And CRANDALL: Management For Modern Families
- 3 Nickell And Dorsey: Management in Family Living
- 4 Nickell , Rice and Tucker- Management in Family Living
- 5 Fevicryl Hobby Ideas- Published by Pidilite Industries Limited

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – VI**

**HOME SCIENCE – CC-19**

**(TEXTILE SCIENCE- II)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical :External – 20 Marks

Internal – 10 Marks

**FOCUS:-** To make the students learn new and innovative methods of textile finishes, dyeing processes and printing processes.

**OBJECTIVES:-**

- 1 To make the students aware of various finishes given to fabrics.
- 2 To make the students aware of different types of dyes and their application.
- 3 To impart the knowledge about types of printing.

**COURSE CONTENT:-**

**THEORY**

**UNIT- 1 FINISHES**

- 1:1 Objectives of finishes
- 1:2 Routine and General finishes- Beetling, Bleaching and scouring, Brushing Calendering,
- 1:3 Special finishes - Calendaring, Schreinerling, Moire, Embossed Polishing, Glazed, Cire, Raised, Napping, Flocking.

## **UNIT- 2 Dyestuffs and their application**

2:1 History of dyeing

2:2 Types of dyes:-

(a) Natural dyes- Vegetable, Animal and Mineral dyes.

(b) Direct, Azoic, Acid and Mordant, Cationic, Disperse, Vat, Sulphur, Reactive and Pigment Dyes.

2:3 Application of colour – Fibre, yarns and fabric dyeing

## **UNIT- 3 Printing**

3.1 History of printing.

3.2 Types of printing

(i) Direct printing- Block, Roller, Duplex and Photographic printing.

(ii) Resist printing- Tie and dye, Batik, Ikat, Stencil and Screen.

(iii) Discharge Prints.

(iv) Transfer printing

## **UNIT-4 Laundry**

4.1 Soap- Types, manufacturing process.

4.2 Detergent- manufacturing process and properties

## **PRACTICALS**

1 Printing on cloth

(a) Block Printing

(b) Stencil printing

(c) Screen printing

2 Laundering- preparation and application of (1) home made starch  
(2) Ready starch

3 Knitting- sweater/ lady's cardigan

4 Macrame- any one decorative article

## **MARKING SCHEME**

Q 1 Printing 04 marks

Q 2 Knitting/Macrame 04 marks

Q 3 Starching 02 marks

Journal 04 marks

Class work 06 marks

**Total 20 marks**

## REFERENCES:

- 1 Bernard P. Corbman, Textiles: Fiber to Fabric, McGraw-hill International editions, 1983
- 2 Hess K.P., Textile fibers and their use
- 3 Joseph M., Introductory Textile Science, Fortworth harcount Brace Jovanovich College Publishers
- 4 Potter and Corbman, Fiber to Fabric, McGraw-hill International editions
- 5 Shinkle J.H., Textile Testing
- 6 Wingate, I.B., Textile Fabrics and their Selection, Prentice Hall, New Jersey
- 7 Barker, A.F., Handbook of Textiles, Abhishek Publication, Chandigarh, 1998
- 8 E.P.G. Gohl, L.D. Vilensky, Textile Science, CBS Publishers & Distributors, Delhi, 1987
- 9 Hall, A.J., The Standard Handbook of Textiles, The English Language Book, Society & Heywood Books, 1965
- 10 Reena Bhatia & Charu Arora, Introduction to Clothing & Textiles, Madhu Printery, Baroda, 1999.
- 11 Russ S, Fabric Printing by Hand, Studio Vista London
- 12 Lammer Jutta, Print your own fabric, BT Bestford Ltd. London
- 13 S.R. Sharma & Vijay Kaushik, Textiles and Laundry, Anmol Publications P vt. Ltd. N.D.
- 14 Shevai V.A., Technology of Printing, Vol. II, Bombay Sevaka Publications.
- 15 Deulkar D., Household Textiles and Laundry Work, Atmaram & Sons., New Delhi

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – VI**

**HOME SCIENCE – CC-20**

**(Food preservation -II)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical :External – 20 Marks

Internal – 10 Marks

**OBJECTIVES :**

- (1) To understand the scientific principles underlying food preservation.
- (2) To develop skills and techniques in food preservation ensuring safety, conservation of nutrients and palatability.
- (3) To understand the basic principles underlying food preservation as an income generating activity.

**COURSE CONTENT**

**THEORY :**

**UNIT–1 Preservation by drying and dehydration**

- 1.1 Principles involved
- 1.2 Various methods of drying
- 1.3 Different types of driers
- 1.4 Packing and storage of dried foods

**UNIT–2 Preservation by preservatives**

- 2.1 Natural preservatives
- 2.2 Artificial preservatives

### **UNIT-3 Preservation by irradiation**

- 3.1 Sources of ionizing radiation
- 3.2 Units of measurement
- 3.3 Application of irradiation on different foods
- 3.4 Use of radiation in food preservation.

### **UNIT-4**

#### 4.1 Preservation of fruit juices

- (i) Pasteurization
- (ii) By chemicals
- (iii) By addition of sugar
- (iv) By freezing
- (v) By drying
- (vi) By carbonation
- (vii) By filtration
- (viii) By other methods

#### 4.2 Fruit beverages

- (i) Squashes and cordials
- (ii) Juices and syrups
- (iii) Carbonated beverages
- (iv) Fruit juice powder
- (v) Juice concentrates

#### 4.3 (1) Food adulteration – Meaning, types, most common food adulterants and their effects on health.

(2) Common household methods to detect adulterants in foods.

(3) Laws governing food standards, significance – PFA, FPO, ISI (BIS), Agmark, meat products order, Codex Alimentarius.

(4) Food additives – types, advantages and disadvantages

### **PRACTICALS :**

(1) Sterilization

(2) Drying of vegetables, cereals and fruits

(3) Preservation of fruit juice by addition of sugar and chemicals

(4) Squash

(5) Synthetic syrup

(6) Common household methods to detect adulterants in foods

Cereals and cereal products, milk, fats and oils, spices, honey.

## MARKING SCHEME

Q.1. Sterilization / drying / cordial	04 Marks
Q.2. Prepare any one of the following Squash, synthetic syrup	04 Marks
Q.3. Preservation of fruit juice by addition of sugar and chemicals	06 Marks
Viva	02 Marks
Journal	04 Marks
<b>Total</b>	<b>20 Marks</b>

## REFERENCES :

1. " Advance food science ". Roytrope wood. Orient Longman Bombay 1973.
2. " Food microbiology " Fraizer W.C.
3. " Preservation of fruits and vegetables " Girdharilal G.S.Siddappa.
4. " Food preservation " by CFTRI Hydrabad.
5. The Brochure of " Home seed food preparation series " by CFTRI Hydrabad.
6. "Modern food preservation " Mc Williams and paine surjeet publication.
7. "Home scale food preparation " by CFTRI Hydrabad.
8. "Food science " by B. Srilaxmi.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – VI**

**HOME SCIENCE – CC-21**

**(FOLK MEDIA IN EXTENSION)**

**With effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical : External – 20 Marks

Internal – 10 Marks

**OBJECTIVES:**

- (1) To help students to understand the principles and procedures in extension programme planning.
- (2) Develop skills in working with people.
- (3) Develop skills in the use of folk media.
- (4) To enable students to become an effective Home science extension worker.

**COURSE CONTENT**

**THEORY**

**UNIT-1 Concept of Extension Programme planning.**

- 1.1 Meaning and definitions of extension Programme planning.
- 1.2 Importance of extension Programme planning.
- 1.3 Scope of extension Programme planning.

**UNIT- 2**

- 2.1 Extension Programme planning process.
- 2.2 Steps in Extension Programme planning.

### **UNIT-3 Folk media in developmental communication.**

2.2 Significance of Folk media in developmental communication.

2.3 Types of folk media

- (i) Forms of folk media
- (ii) Folk music.
- (iii) Folk dances.
- (iv) Folk dramas

### **UNIT-4 Selection of folk media**

4.1 Criteria for selection of any one or combination of folk media- types of audience, message the context and time and other resources.

### **PRACTICALS**

(1) Studying the profile of the rural areas.

- Formulate one questionnaire to study the socio- Economic background of rural people.

(2) Planning one extension programme for lower income group people.

- Perform folk dances, folk songs, street plays to create awareness among community people.

(3) Planning and conducting one demonstration with the help of appropriate audio-visual aids.

(4) Planning and delivering one extension talk with appropriate audio-visual aids.

Note- Students will maintain record of their practical experiences.

### **MARKING SCHEME:**

Q 1	Planning an extension programme for lower income group	04 marks
Q 2	Preparation of questionnaire	03 marks
Q 3	Extension talk or Demonstration	03 marks
	Journal	04 marks.
	Class work	0 8 marks.
	<b>Total</b>	<b>20 marks</b>

**REFERENCES:**

- 1 G.L.Ray, "Extension communication and Mnagement, 4<sup>th</sup> edition, 1999. Naya prokash, Calcutta, India.
- 2 O.P.Dhama,O.P.Bhatnagar; Education and communication for development
- 3 Mass media and rural development.vol.ii ,New Delhi, Manak publication pvt.ltd.
- 4 Anupama Shah,Uma Joshi, Puppetry and Folk Dramas for non formal education., sterling publication pvt.ltd., ISBN- New Delhi-110016.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT**

**B.A. SEMESTER – VI**

**HOME SCIENCE – CC-22**

**(HUMAN PHYSIOLOGY -II)**

**With Effect from 2013-2014**

Total – 4 Credits/ week

Theory : 3 Credits/ week

Practical- 1 Credit (2 Periods/week)

Theory : External – 50 Marks

Internal - 20 Marks

Practical :External – 20 Marks

Internal – 10 Marks

**OBJECTIVES :-**

- 1 To understand structure and functions of various organs of physiological systems of human being.
- 2 To serve as a sound basis for the study of nutrition and food science.
- 3 Understand alterations of structure and functions in various organs on disease conditions.

**COURSE CONTENT:-**

**THEORY SYLLABUS**

**UNIT–1 EXCRETORY SYSTEM :**

- 1.1 Structure and functions of organs of urinary system-kidney, ureter and bladder
- 1.2 Process of formation of urine
- 1.3 Skin – structure and functions

**UNIT–2 NERVOUS SYSTEM :**

- 1.1 Brain – structure and functions
- 1.2 Spinal cord – structure and functions
- 2.3 Reflex action

**UNIT–3 Endocrine glands :**

- 3.1 Location, hormones and their functions and effects of hormonal imbalance in human body(In brief) of –Pituitary gland, Thyroid gland, Parathyroid gland, Adrenal gland, Ilets of Langerhans, Gonads

## UNIT-4

4.1 Information about worms found in humanbody.

4.2 Modern methods of diagnosis of disease: (Only brief introduction)

X-Ray (Radiation), Angiography, C.T.Scan, MRI, PET, Sonography, Endoscopy.

## PRACTICALS

(1) Detect sugar, protein and bile in urine.

(2) Study of worms found in humanbody.

(3) Identification of modern methods of diagnosis of diseases by:-

Charts, X-Ray, Angiography, C.T.Scan, Sonography, Endoscopy

(4) Study of human physiological systems from charts, models etc.

(A) External structure of organs of :

(a) Excretory system

(b) Nervous system

(B) Location, Hormones and functions of:

Endocrine glands- Pituitary gland, Thyroid gland, Parathyroid gland, Adrenal gland, Ilets  
Of langerhans, Ovary and Testis

## MARKING SCHEME

Q 1 Identify and describe specimen no.1 to 6	12 marks
(From practicals no. 2 to 7)	
Q 2 Detect sugar / protein / bile in urine.	03 marks
Journal	05 marks
<b>Total</b>	<b>20 marks</b>

## REFERENCES :

- 1 Human physiology - C.C.Chatterjee
- 2 Human physiology - Wright
- 2 Essentials of Medical physiology - K. Sembulingam, Prema Sembulingam  
Jaypee Brothers Medical Publisher (P) Ltd.

- 3 Manavsharir, Karyavidnyan Tatha Prathmik Sutikashastra Gujarati version)  
Dilip P.Mehta
- 4 Practical medicine for student and practioner - P.J.Mehta
- 5 Manual of laboratory technique - National institute of Nutrition, Hydrabad
- 6 Pranishastra – Gujarat granthnirman board, Ahmedabad
- 7 General Biochemistri and Animal physiology-Dr.M.C.Duble, Dr.(miss)N.J.Chinoy:University  
granthnirman board, Gujarat, Ahmedabad(Gujarati version)