
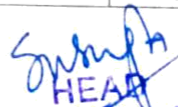


B.Sc. CLINICAL NUTRITION & DIETETICS

**PROPOSED SCHEME FOR CHOICE BASED CREDIT SYSTEM IN
B.Sc. CLINICAL NUTRITION & DIETETICS
EFFECTIVE FROM 2019-20**

FIRST YEAR – SEMESTER I				
Code	Course Title	Course Type	HPW	Credits
BS 101	Environmental Studies	AECC 1	2	2
BS 102	English	CC-1A	4	4
BS 103	Second Language	CC-2A	4	4
BS 104	Introductory Nutrition	DSC - 1A	4T+2P=6	4+1=5
BS 105	Optional II	DSC - 2A	4T+2P=6	4+1=5
BS 106	Optional III	DSC - 3A	4T+2P=6	4+1=5
	TOTAL			25
SEMESTER II				
BS 201	Gender Sensitization	AECC 2	2	2
BS 202	English	CC-1B	4	4
BS 203	Second Language	CC-2B	4	4
BS 204	Basic Nutrition	DSC -1B	4T+2P=6	4+1=5
BS 205	Optional II	DSC -2B	4T+2P=6	4+1=5
BS 206	Optional III	DSC -3B	4T+2P=6	4+1=5
	TOTAL			25
SECOND YEAR- SEMESTER III				
BS 301	Patient Counseling Skills	SEC -1	2	2
BS 302	<u>LIGC FRAMED SYLLABUS</u>	SEC -2	2	2
BS 303	English	CC-1C	3	3
BS 304	Second Language	CC-2C	3	3
BS 305	Basic Dietetics	DSC- 1C	4T+2P=6	4+1=5
BS 306	Optional II	DSC- 2C	4T+2P=6	4+1=5
BS 307	Optional III	DSC- 3C	4T+2P=6	4+1=5
	TOTAL			25
SEMESTER IV				
BS 401	Nutrition and Fitness	SEC – 3	2	2
BS 402	<u>LIGC FRAMED SYLLABUS</u>	SEC – 4	2	2
BS 403	English	CC-1D	3	3
BS 404	Second Language	CC-2D	3	3
BS 405	Food Science	DSC- 1D	4T+2P=6	4+1=5
BS 406	Optional II	DSC- 2D	4T+2P=6	4+1=5
BS 407	Optional III	DSC- 3D	4T+2P=6	4+1=5
	TOTAL			25
THIRD YEAR- SEMESTER V				
BS 501	English	CC-1E	3	3
BS 502	Second Language	CC-2E	3	3
BS 503	Nutrition and Health	GE	4	4
BS 504	A- Community Nutrition	DSE-1E	4T+2P=6	4+1=5
	B- Maternal and Child Nutrition			
BS 505	Optional II A/B/C	DSE-2E	4T+2P=6	4+1=5


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BS 506	Optional III A/B/C	DSE-3E	4T+2P=6	4+1=5
	TOTAL			25
SEMESTER VI				
BS 601	English	CC-1F	3	3
BS 602	Second Language	CC-2F	3	3
BS 603	A- Clinical Dietetics	DSE-1F	4T+2P=6	4+1=5
	B- Diet in Disease			
BS 604	Optional II A/B/C	DSE-2F	4T+2P=6	4+1=5
BS 605	Optional III A/B/C	DSE-3F	4T+2P=6	4+1=5
BS 606	Project Work/Optional		4	4
	TOTAL			25
	TOTAL CREDITS			150

CC- Core Course

AECC- Ability Enhancement Compulsory Course

DSC- Discipline Specific Core

SEC- Skill Enhancement Course

DSE- Discipline Specific Elective

GE- Generic Elective

HPW – Hours per week

SUMMARY OF CREDITS FOR B. Sc. PROGRAM

S. No.	Course Category	No. of courses	Credits per course	Credits
1	AECC	2	2	4
2	SEC	4	2	8
3	CC	12	4 (year1) 3 (year 2) 3 (year 3)	40
4	DSC	12	5	60
5	DSE	6	5	30
6	GE	1	4	4
7	Project work			4
	TOTAL	40		150

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Manjula

B.Sc. CLINICAL NUTRITION & DIETETICS
OSMANIA UNIVERSITY

REVISED SYLLABUS (CBCS) WITH EFFECT FROM 2019-20

B. Sc. I YEAR
SEMESTER I (Theory) PAPER I DSC - 1A

Code BS 104 INTRODUCTORY NUTRITION

4 Hours/Week; Credits 4

15 Hours

Credit-1: Introduction to Nutrition

- 1.1 Introduction to nutrition, food as a source of nutrients, functions of food.
Definition of nutrition, nutrients, adequate, optimum and good nutrition, malnutrition.
Inter relationship between nutrition and health.
- 1.2 Introduction to meal management, Balanced diet, Food guide for India, Basic 5 food groups. Basic principles and steps in meal planning

Credit-2: Carbohydrates and Lipids

15 Hours

- 2.1 Composition, Classification, Sources and Functions, Digestion, Absorption and Transport
Carbohydrate metabolism- Glycolysis, citric acid cycle, glycogenesis and glycogenolysis, gluconeogenesis, pentose phosphate pathway.
- 2.2 Lipids- Composition, classification, sources and Functions, Essential fatty Acids, Digestion. Lipid metabolism-Beta-oxidation of fatty acids

Credit-3: Amino acids, Proteins and Enzymes

15 Hours

- 3.1 Amino acids: Classification- Chemical and Nutritional, Deamination and Transamination, Urea cycle.
Proteins- Composition, Classification, Sources, Functions, Effects of protein deficiency.
- 3.2 Enzymes - Definition, Classification, Properties, Mechanism of Enzyme Action, Factors Effecting Enzyme Action, Enzyme Inhibitors

Credit-4: Water and Hormones

15 Hours

- 4.1 Water as a nutrient, functions of water, sources, requirements, water balance, effect of deficiency.
- 4.2 Hormones: Pituitary, adrenocortical, thyroid and reproductive hormones; Hormones of the Pancreas and hormones of the adrenal cortex- Mode of action and control of secretion.

Suggested Readings

Rama Rao A.V.S.S. and Surya Lakshmi A., A text book of Biochemistry for medical students, UBS Publishers Distributors Ltd.

Weil J.H. General Biochemistry, Wiley Eastern Limited, New Delhi.

Agarwal, A. and Udipi S. A. Textbook of Human Nutrition, Jaypee Brothers Medical Publishers (P) Ltd. New Delhi.

Mudambi, S.R. and Rajagopal M.V. Fundamentals of Foods and Nutrition, Wiley Eastern Limited.

Suresh R. Essentials of Human Physiology, Books and Allied (P) Ltd. Kolkata.

I SEMESTER SYLLABUS – Practical paper

Code: BS 104 INTRODUCTORY NUTRITION (50 Marks)
3 Hours/week; Credits 1
Total Number of Practicals: 7

1. Food Exchange List and using the Indian Food Composition Tables to calculate Nutritive values of Food preparations.
2. Nutritive Value Calculations of Cereal based Preparations
Vegetable pulao, Puri, Lemon Rice, Dosa, Idly, Stuffed Paratha, Upma, Poha, Vermicelli Upma, Phulka and Chapathi
3. Nutritive Value Calculations of Pulse based Preparations
Cholae, Plain Dal, Tomato dal and Spinach dal
4. Nutritive Value Calculations of Vegetable based Preparations
Carrot and peas fugath, Beans fugath, Cauliflower and Tomato curry, Cauliflower and Peas fugath and Potato and peas fugath.
5. Nutritive Value Calculations of Meat based Preparations
Minced meat curry, Mutton curry, Omelet, Chicken curry, Fish curry and Egg curry
6. Nutritive Value Calculations of Milk based Preparations
Fruit salad, Vermicelli kheer, Sago kheer and Caramel pudding.
7. Planning diets for an Adult man and an Adult woman during different physical activities- sedentary, moderate and heavy worker.

FACULTY OF SCIENCE
B.Sc. I SEMESTER(CBCS) EXAMINATION
Subject: CLINICAL NUTRITION & DIETETICS
THEORY MODEL PAPER- INTRODUCTORY NUTRITION

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

- 13 (a) CREDIT I
(or)
(b) CREDIT I
- 14 (a) CREDIT II
(or)
(b) CREDIT II
- 15 (a) CREDIT III
(or)
(b) CREDIT III
- 16(a) CREDIT IV.
(or)
(b) CREDIT IV

**END SEMESTER PRACTICAL EXAMINATION
SEMESTER 1
CLINICAL NUTRITION AND DIETETICS
PAPER I – INTRODUCTORY NUTRITION**

Date:
Time:

Max Marks: 50
Batch:

- 1. Plan a day's diet for the given age and sex A/B/C or D (20 Marks)**
 - A.
 - B.
 - C.
 - D.
 - Nutrient requirement table 5 Marks
 - Menu for the day 15 Marks

- 2. Calculate the corresponding RDA (25 Marks)**
 - Nutritive Value of the diet planned 15 Marks
 - Grand total Table 10 Marks

- 3. Practical Record (5 Marks)**

B Sc I YEAR, SEMESTER II (Theory)

Code BS 204 BASIC NUTRITION DSC -1B

60 Hrs
4 Hours/Week, Credits 4
15 Hours

Credit-1: Energy

- 1.1 Energy: Units of energy, components of energy requirement, BMR, Measurement of energy, factors affecting BMR
- 1.2 Energy requirements of Adults, Reference man and Woman.

Credit-2: Vitamins and Minerals

15 Hours

- 2.1 Water soluble vitamins: Classification, sources, functions and deficiency of Ascorbic acid, Thiamine, Riboflavin, Niacin, Vitamin B₆, Vitamin B₁₂ and Folic acid.
Fat soluble vitamins: Classification, sources, functions and deficiency of Fat soluble vitamins A, D, E, K.
- 2.2 Minerals: Functions, sources and deficiency of Calcium, iron, iodine, sodium and potassium.

Credit-3: Nutrition in Pregnancy, Infancy and Lactation

15 Hours

- 3.1 Nutrition in pregnancy: Physiological stages of pregnancy, nutritional requirements, complications of pregnancy.
- 3.2 Nutrition during infancy: Nutritional requirements, Nutritional contribution of Human milk vs. cow's milk/infant formula, Introduction of supplementary foods.
Nutritional requirements during Lactation.

Credit-4: Childhood, School age, Adolescence and Geriatric Nutrition

15 Hours

- 4.1 Nutrition during Early childhood: Nutritional requirements of a toddler/ preschool child.
Nutrition of School children: Nutritional requirements of school children, Importance of snacks, School lunch.
- 4.2 Nutrition during Adolescence: Nutritional requirements of adolescents, Factors influencing eating habits.
- 4.3 Geriatric Nutrition: Factors influencing food intake, Nutritional requirements.

Suggested Readings

Agarwal, A. and Udipi S. A. Textbook of Human Nutrition, Jaypee Brothers Medical Publishers (P) Ltd. New Delhi.

Helen A. Guthrie, Introductory Nutrition, Times Mirror-Mosby.

Swaminathan M. Advanced Text book on Food and Nutrition, Vol-I, The Bangalore Printing & Publishing Co., Ltd.

Wardlaw G.M. & Insel P.M. Perspectives in Nutrition Mosby Publishing Co., St. Louis

Mudambi, S.R. and Rajagopal M.V. Fundamentals of Foods and Nutrition, Wiley Eastern Limited.

Patricia A. Kreutler and Dorice Czajka Narins, Nutrition in perspective, Prentice Hall, New Jersey.

Swaminathan M. Hand book of Food and Nutrition, The Bangalore Printing Publishing Co. Ltd.

II SEMESTER SYLLABUS – Practical paper

BS 204 BASIC NUTRITION

3 Hours/week; Credits 1 (50 marks)

Total Number of Practicals: 6

1. Planning a balanced diet for a pregnant woman doing different physical activities- sedentary, moderate and heavy worker.
2. Planning a balanced diet for a Lactating woman doing different physical activities- sedentary, moderate and heavy worker (0-6 months and 6-12 months).
3. Planning a balanced diet for a pre-school child.
4. Planning a balanced diet for a school age child (Packed lunch).
 - School going boy aged 10-12 years
 - School going girl aged 10- 12 years
5. Planning a balanced diet for Adolescent girls and adolescent boys (Packed lunch).
 - Adolescent girl aged 13-15 years
 - Adolescent boy aged 13-15 years
 - Adolescent girl aged 16-17 years
 - Adolescent boy aged 16-17 years
6. Planning a balanced diet for a Senior Citizen.
 - Planning a diet for an elderly woman
 - Planning a diet for an elderly man

FACULTY OF SCIENCE
B.Sc. I SEMESTER(CBCS) EXAMINATION
Subject: CLINICAL NUTRITION & DIETETICS
THEORY MODEL PAPER- BASIC NUTRITION

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

- 13. CREDIT I
- 14. CREDIT I
- 15. CREDIT I
- 16. CREDIT II
- 17. CREDIT II
- 18. CREDIT II
- 19. CREDIT III
- 20. CREDIT III
- 21. CREDIT III
- 22. CREDIT IV
- 23. CREDIT IV
- 24. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

- 13 (a) CREDIT I
- (b) CREDIT I
- (or)
- 14 (a) CREDIT II
- (b) CREDIT II
- (or)
- 15 (a) CREDIT III
- (b) CREDIT III
- (or)
- 16 (a) CREDIT IV.
- (b) CREDIT IV
- (or)

**END SEMESTER PRACTICAL EXAMINATION
SEMESTER 1
CLINICAL NUTRITION AND DIETETICS
PAPER I – INTRODUCTORY NUTRITION**

Date:
Time:

Max Marks: 50
Batch:

4. Plan a day's diet for the given age and sex A/B/C or D (20 Marks)

- A.
- B.
- C.
- D.

- Nutrient requirement table 5 Marks
- Menu for the day 15 Marks

5. Prepare the indicated items from the above planned items (25 Marks)

- Nutritive Value of the diet planned 15 Marks
- Grand total Table 10 Marks

6. Practical Record (5 Marks)

II year

**B.Sc. CLINICAL NUTRITION & DIETETICS
OSMANIA UNIVERSITY**

REVISED SYLLABUS (CMBS) WITH EFFECT FROM 2019-2020

B Sc II Year, SEMESTER III

SKILL ENHANCEMENT COURSE (SEC 1)

PATIENT COUNSELING SKILLS
Code BS 301, SEC-1

30 Hours
Hours/week 2 Credits 2

Credit I : Diet and Nutrition History

15 Hours

- 1.1 The Medical Record and Patient profile, Dietary Intake Assessment and Nutrition History: diet history, Food Frequency Questionnaire and 24 Hour recall.
- 1.2 Definition of Counseling, Nutrition counseling goals- the people involved, Communication process in counseling.

Credit II : Counseling skills, Weight Management

15 Hours


- 2.1 Counseling skills for behavior change, Developing behavior change strategies, Problems in Communication, Resources and Aids in Counseling.
- 2.2 Counseling for Weight Management- Assessment, Types of obesity, Causes, Counseling overweight and obese subjects.


Suggested Readings

Kathy King and Bridget Klawitter, Nutrition Therapy: Advanced Counseling Skills, Third Edition, Lippincott Williams and Wilkins, 2007.

Sylvia Escott Stump, Nutrition and Diagnosis – Related Care, Sixth Edition, Lippincott Williams and Wilkins, 2008.

Krause M, Kathleen. L Mahan and Sylvia Escott Stump, Food Nutrition and Diet Therapy, 11th Edition, W.B Saunders Co, Philadelphia, 2004.


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B Sc. MODEL PAPER
SEC- 1; PATIENT COUNSELING SKILLS
Semester III

Max Marks 40

Time 1 ½ Hrs.

SECTION A (2X5=10 Marks)
(Short answer type)

Note: Answer all questions. All questions carry equal marks.

1. a) CREDIT I
OR
b) CREDIT I
2. a) CREDIT II
OR
b) CREDIT II

SECTION B (2X15 = 30 Marks)
(Essay answer type)

Note: Answer all questions. All questions carry equal marks.

3. a) CREDIT I
OR
b) CREDIT I
4. a) CREDIT II
OR
b) CREDIT II

SEMESTER III (Theory)

PAPER III BASIC DIETETICS

60 Hrs

Code BS 305, DSC 1-C

4 Hours/Week, Credits 4

Credit I : Basic concepts, Routine Hospital diets

15 Hours

- 1.1 Role of a dietitian in a hospital.
- 1.2 Basic Concepts: Diet Therapy, Therapeutic diets, Therapeutic Adaptation- The Normal diet.
- 1.3 Routine Hospital diets: Regular diet, soft diet, full liquid diet. Special feeding methods, Enteral and Parenteral Nutrition, Types of enteral formulas, Total Parenteral Nutrition.

Credit II : Fever, Obesity, Liver Diseases

15 Hours

- 2.1 Modifications of diet- Febrile conditions (Fever), infections and surgical conditions.
- 2.2 Obesity: Causes of obesity, types of obesity, Low calorie reducing diet.
- 2.3 Liver diseases: Infectious hepatitis and Cirrhosis- Symptoms and clinical findings, etiology and dietary management.

Credit III : Diabetes mellitus, Peptic Ulcer

15 Hours

- 3.1 Diabetes mellitus: Types of diabetes, symptoms and tests for detection- Dietary management of Type 2 Diabetes.
- 3.2 Peptic Ulcer: Symptoms and clinical findings, current concepts in dietary management.

Credit IV : CVD, Hypertension, Renal diseases, Counseling

15 Hours

- 4.1 Cardiovascular diseases: Atherosclerosis - risk factors and dietary management.
- 4.2 Hypertension - Types and dietary management.
- 4.3 Renal diseases: Symptoms and clinical findings of glomerulonephritis and Nephrotic syndrome.
- 4.4 Nutrition and Diet Clinics: dietary counseling, steps in the counseling process.

Suggested Readings

Sri Lakshmi B., Dietetics, New Age International P. Ltd. Publishers.

Antia F.P. Clinical Dietetics and Nutrition, Oxford University Press, Delhi.

Robinson C.H., Lawler M.R., Chenoweth, W.L. and Garwick A. E., Normal and Therapeutic Nutrition, Mac Millan Publishing Co.

Burtis G, Davis J & Martin S., Applied Nutrition and Diet Therapy, W. B. Saunders Co.

Swaminathan M., Advanced text book in food and nutrition Vol - II, The Bangalore Printing and Publishing Co.

Kumud Khanna, Text book of Nutrition and Dietetics, Phoenix Publishing House, New Delhi.

III SEMESTER SYLLABUS – Practical paper

BS 305 BASIC DIETETICS

Total Number of Practicals: 10
2 Hours/week Credits 1

1. Standardization of common food preparations.
2. Planning and preparation of Normal diet.
3. Planning and preparation of liquid diet.
4. Planning and preparation of soft diet.
5. Planning and preparation of low calorie reducing diet.
6. Planning and preparation of Bland diet for Peptic Ulcer.
7. Planning and preparation of diets for Infectious Hepatitis and Cirrhosis of liver.
8. Planning and preparation of diet for Diabetes mellitus.
9. Planning and preparation of diets for Atherosclerosis and Hypertension.
10. Planning and preparation of diets for Nephritis and Nephrotic syndrome

B Sc. MODEL PAPER
Semester III
PAPER III: BASIC DIETETICS
THEORY MODEL PAPER- CBCS Pattern

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)

(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)

(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

13. a) CREDIT I
(OR)
b) CREDIT I
14. a) CREDIT II
(OR)
b) CREDIT II
15. a) CREDIT III
(OR)
b) CREDIT III
16. a) CREDIT IV
(OR)
b) CREDIT IV

**END SEMESTER PRACTICAL EXAMINATION
SEMESTER 3
CLINICAL NUTRITION AND DIETETICS
PAPER III - BASIC DIETETICS**

Date:
Time:

Max Marks: 50
Batch:

1. **Plan a day's diet for the given age and sex A/B/C or D** (25 Marks)
 - A.
 - B.
 - C.
 - D.
 - Nutrient requirement table 5 Marks
 - Menu for the day 20 Marks

2. **Prepare the indicated items from the above planned items** (20 Marks)
 - Method of Preparation and taste 15 Marks
 - Display 5 Marks

3. **Practical Record** (5 Marks)

B Sc II Year, SEMESTER IV

SKILL ENHANCEMENT COURSE (SEC 3)

NUTRITION AND FITNESS

Code BS 401, SEC-3

30 Hrs

2 Hours/week Credits 2

Credit I : Introduction, Types of exercise, physical activity

15 Hours

1.1 Definition of Physical fitness, Nutrition and health related fitness, General guidelines for Exercise, Guidelines for Healthy eating.

1.2 Nutritional recommendations for better physical performance, Nutritional supplements, Types of Exercise Programs

1.3 Physical Activity - frequency, intensity and types with examples.

Credit II : Management, Guidelines, Physical activity pyramid

15 Hours

2.1 Weight Management: Regulation of Body weight, Causes of overweight and obesity,

2.2 Assessment and dietary management of overweight and obesity, Physical Activity Guidelines and physical activity pyramid.

2.3 Popular diets and practices.

Suggested Readings

Wardlaw GM and Smith AM. Contemporary Nutrition: A Functional Approach. Mc Graw Hill.

Williams Melvin. Nutrition for health, fitness and sports. 2004. Mc Graw Hill

Kathleen Mahan, Sylvia Escott-Stump and Raymond JL, Krause's Food & the Nutrition Care Process, 13th Edition, Elsevier, ISBN: 978-1-4377-2233-8

Joshi AS. Nutrition and Dietetics 2010. Tata Mc Graw Hill.

B Sc. MODEL PAPER
SEC- 3; NUTRITION AND FITNESS
Semester IV

Max Marks 40

Time 1 ½ Hrs.

SECTION A (2X5=10 Marks)
(Short answer type)

Note: Answer all questions. All questions carry equal marks.

1. a) CREDIT I
OR
d) CREDIT I
2. a) CREDIT II
OR
b) CREDIT II

SECTION B (2X15 = 30 Marks)
(Essay answer type)

Note: Answer all questions. All questions carry equal marks.

3. a) CREDIT I
OR
b) CREDIT I
4. a) CREDIT II
OR
b) CREDIT II

SEMESTER IV

PAPER IV FOOD SCIENCE (Theory) Code BS 405, DSC-1D

60 Hours
4 Hours/week, Credits 4

Credit I : Cereals and millets, Pulses and Legumes 15 Hours

- 1.1 Cereals and Millets: Structure of a cereal grain, cereal products, processing, use in variety of preparations and nutritional aspects of rice and wheat. Maize, bajra, jowar and ragi, processing and nutritive value; Breakfast cereals.
- 1.2 Pulses and Legumes: Composition, processing, use in variety of preparations and nutritional aspects.

Credit II : Milk and milk products, Eggs, Meat 15 Hours

- 2.1 Milk and milk products: Composition, classification, processing, Storage, uses and nutritional aspects of milk and milk products.
- 2.2 Eggs: Composition, nutritional aspects, structure, grading, quality, testing for quality, storage and uses.
- 2.3 Fish, Poultry and Meat: Composition, nutritional aspects, storage and uses.

Credit III : Vegetables and Fruits, Sugar Products 15 Hours

- 3.1 Vegetables and fruits: Variety, selection, composition and nutritional aspects, uses.
- 3.2 Sugar and sugar products: Types of sugar, sugar related products (jaggery, honey, corn syrup etc.) and uses.
- 3.3 Fats and oils: Nutritional aspects, classification, sources and uses.

Credit IV : Spices, Food Additives 15 Hours

- 4.1 Spices: Spices, condiments and herbs used in cookery.
- 4.2 Salt: Types, uses in the diet
- 4.3 Food Additives: definition of food additive, Food colors- natural and artificial. Essences and flavoring agents, flavor enhancers. Convenience foods: Role, types, advantages, uses.

Suggested Readings

Sri Lakshmi B. Food Science, New Age International P. Ltd. Publishers.

Norman N. Potter, Joseph H. & Hotchleiss, Food Science, CBS Publishers and Distributors.

N. Shankuntala Manay and M. Shadaksharaswamy, Food Facts and Principles, New Age International Publishers.

Mudambi S.R., Rao S.M. and Rajagopal M.V. Food Science, New Age International Publishers.

IV SEMESTER SYLLABUS – Practical paper

BS 405 FOOD SCIENCE (Practicals)

Total Number of Practicals: 11

2 Hours/week Credits 1

1. Cereal preparations: Chinese fried rice, Vegetable Pulao with Raita.
2. Pulse preparations: Alu Cholae, Masala Rajma.
3. Vegetable preparations: Palak paneer, Vegetable Khorma
4. Snacks: Pav bhaji, Chutney sandwiches.
5. Sweets: Carrot Halwa, Vermicelli Kheer.
6. Salads and Raitas: Mixed Vegetable salad, Cucumber Raita, Boondi Raita
7. Western dishes: Vegetable Noodles
8. Soups- Sweet corn soup, Tomato soup.
9. Cakes- Marble cake, Victoria sponge cake.
10. Biscuits- Salt biscuits, Chocolate Fancies and Jam Tarts.
11. Napkin Folding and Table Decoration

B Sc. MODEL PAPER
Semester IV
PAPER IV: FOOD SCIENCE
THEORY MODEL PAPER- CBCS Pattern

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

13. a) CREDIT I
(OR)
b) CREDIT I
14. a) CREDIT II
(OR)
b) CREDIT II
15. a) CREDIT III
(OR)
b) CREDIT III
16. a) CREDIT IV
(OR)
b) CREDIT IV

**END SEMESTER PRACTICAL EXAMINATION
SEMESTER 4
CLINICAL NUTRITION AND DIETETICS**

PAPER IV– FOOD SCIENCE

Date:
Time:

Max Marks: 50

1. Write the recipe for 2 portions of the recipe given **(20 Marks)**
 - a) List of Ingredients and method
 - b) Menu
 - c) Costing

2. Preparation and display of the above mentioned recipe **(20 Marks)**
 - a) Taste and overall appearance
 - b) Display

3. Napkin Fold **(5 Marks)**

4. Practical Record **(5 Marks)**

III year

**B.Sc. CLINICAL NUTRITION & DIETETICS
OSMANIA UNIVERSITY**

REVISED SYLLABUS (CMBS) WITH EFFECT FROM 2019-2020

B Sc III Year, SEMESTER V

**NUTRITION AND HEALTH
Code BS 503, GE**

**60 Hours
Hours/week 4, Credits 4**

Credit I: Introduction, RDA

15 Hours

- 1.1 Concepts of Nutrition, Functions of Food, Concepts of Nutritionally adequate diets,
- 1.2 Balanced diet- Definition and Importance, Recommended Dietary Allowances (RDA).
- 1.3 Food groups, Food Guide for India, Factors affecting RDA,

Credit II : Meal planning, Classification of Nutrients

15 Hours

- 2.1 Meal Planning: Principles of meal planning, objectives in meal planning, points to be kept in mind while planning a menu.
- 2.2 Nutrient components of Food; Classification of nutrients by - Chemical Composition (Proteins, Carbohydrates, Fats, Vitamins and Minerals)
- 2.3 Classification by Predominant Function (Body Building, Energy Yielding and Protective Foods)

Credit III : Adolescence, Assessment of Fitness

15 Hours

- 3.1 Nutrition during Adolescence: Nutritional requirements of adolescents, Iron deficiency Anemia- Causes and prevention.
- 3.2 Assessment of Fitness- BMI and Waist circumference, Nutrition or diet History, Food frequency questionnaire and 24 Hour Recall.

Credit IV : Physical Activity, Weight management

15 Hours

- 4.1 Importance and benefits of physical activity.
- 4.2 Physical Activity - frequency, intensity and types with examples, Physical Activity Guidelines for adults.
- 4.3 Healthy weight Management, Diet and exercise for weight management.

Suggested Readings

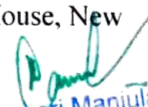
Mudambi, S.R. and Rajagopal M.V. Fundamentals of Foods and Nutrition, Wiley Eastern Limited.

Swaminathan M. Advanced Text book on Food and Nutrition, Vol-I, The Bangalore Printing & Publishing Co., Ltd.

Srilakshmi B., Dietetics, New Age International P. Ltd. Publishers.

Kumud Khanna, Text book of Nutrition and Dietetics, Phoenix Publishing House, New Delhi.


HEAD
Department of Biochemistry
University College of Science
Osmania University


Dr. Bhanoveri Manjula, Ph.D.
Chairman
Board of Studies, Nutrition
Osmania University
Hyderabad

B Sc. MODEL PAPER
Semester V
GE: NUTRITION AND HEALTH
THEORY MODEL PAPER- CBCS Pattern

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

13. a) CREDIT I
(OR)
b) CREDIT I
14. a) CREDIT II
(OR)
b) CREDIT II
15. a) CREDIT III
(OR)
b) CREDIT III
16. a) CREDIT IV
(OR)
b) CREDIT IV

SEMESTER V

PAPER V, (A) COMMUNITY NUTRITION

Code BS 504, DSE 1-E

504 (A)

60 Hours

4 Hours/week, Credits 4

Credit I : Definition, Direct and Indirect Assessment

15 Hours

- 1.1 Definition of Nutritional status, Methods of Assessment of Nutritional Status,
- 1.2 Direct assessment- Anthropometry, Anthropometric measurements, usefulness of Anthropometric measurements. Clinical assessment- Usefulness and Limitations. Biochemical assessment of Nutritional status, Types of Biochemical tests, their usefulness and interpretation.
- 1.3 Dietary Assessment: Diet surveys, Methods of diet surveys, Analysis and interpretation. Indirect assessment- Food balance sheets and vital statistics.

Credit II : PEM, Iodine deficiency disorders

15 Hours

- 2.1 Nutritional problems confronting India: Protein energy malnutrition- Prevalence in India, Classification, Factors contributing to Protein energy malnutrition in India, Prevention of malnutrition.
- 2.2 Iodine deficiency disorders- Prevalence in India, Etiology of goiter, Measures of control and prevention of Iodine deficiency disorders in India.

Credit III : Vitamin A and Iron Deficiency, Nutrition education

15 Hours

- 3.1 Nutritional problems confronting India: Vitamin A deficiency- Prevalence in India, Causes and etiology of Vitamin A deficiency in India, Treatment of vitamin A deficiency, Prevention and Control.
- 3.2 Iron deficiency Anemia- Prevalence in India, Etiology of iron deficiency, Clinical Manifestations, Treatment of Anemia, Prevention of Anemia, Govt. of India initiatives for control of Anemia.
- 3.3 Nutrition Education vs Nutrition Communication, Objectives of Nutrition Education, Channels of Nutrition education in the community.
- 3.4 Methods of educating the community, Use of resources and aids, Prerequisites of good communication in community settings.

Credit IV : National and international agencies, Fortification

15 Hours

- 4.1 National and International agencies involved in Public Health: FAO, WHO, UNICEF, CARE, ICMR, NIN and CFTRI- Objectives and functioning.
- 4.2 National Programs: ICDS (Integrated Child Development Scheme), Mid-day Meal Program and National Nutrition Mission- Objectives and functioning.
- 4.3 Fortification - Objectives of Food Fortification, Fortification of foods to improve their nutritional quality or to restore nutrients, Food fortification programs in India- Iodization of salt for controlling goiter, Iron fortification program.

Suggested Readings

Text book of Human Nutrition, 4th Edition, Ed. by Mahtab S. Bamji, Kamala Krishnaswamy and G.N.V. Brahmam. Oxford and IBH Publishing Co., P. Ltd. New Delhi.

Srilakshmi B, Nutrition Science, New Age International Publishers.

Ritchey S.J. and Taper L.J., Maternal and child nutrition, Harper and Row publishers N.Y.

Swaminathan M. Advanced Text book on Food and Nutrition, Vol-II, The Bangalore Printing and Publishing Co. Ltd.

Mc Laren D.S. Nutrition in the Community, John Wiley and Sons.

Text book of Human Nutrition, 4th Edition, Ed. by Mahtab S. Bamji, Kamala Krishnaswamy and G.N.V. Brahmam. Oxford and IBH Publishing Co., P. Ltd. New Delhi.

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Swaminathan M. Advanced Text book on Food and Nutrition, Vol-II, The Bangalore Printing and Publishing Co. Ltd.

Mc Laren D.S. Nutrition in the Community, John Wiley and Sons.

V SEMESTER SYLLABUS – Practical paper

BS 504^(A) COMMUNITY NUTRITION **Total Number of Practicals: 13**
2 Hours/week, Credits 1

1. Diet and Nutrition Surveys
 2. Identifying at risk and vulnerable groups.
 3. Assessing the dietary intakes of Adolescent girls using a diet survey
 4. Visits to observe the working of Nutrition and Health oriented Programmes- a govt. school to observe the mid-day meal program
 5. Visit to an ICDS (Integrated Child Development Scheme) Project Center
Visit to UNICEF to observe Child Nutrition Programs
 6. Techniques of taking anthropometric measurements using standardized equipment.
 7. Assessing nutritional status of school children using Anthropometric measurements.
 8. Data Analysis and comparison with standards.
 9. Methods of Extension used in the Community
 10. Preparation of visual aids, charts, posters, models etc. for exhibition.
 11. Lecture and Method demonstrations to Target groups.
 12. Lectures and Interactive session with school children using visual aids
 13. Nutrition education program for adolescent girls using charts, models, flip charts, folders etc
-

Code BS 504 (B): MATERNAL AND CHILD NUTRITION 60 Hours
DSE 1-E

Hours/week 4;
Credits : 4

Credit I: Disorders of Pregnancy, Maternal Health

15 Hours

1.1 Nutritional needs during pregnancy, common disorders of pregnancy (Anemia, HIV infection, Pregnancy induced hypertension), relationship between maternal diet and birth outcome.

1.2 Maternal health and nutritional status, maternal mortality and issues relating to maternal health.

Credit II: Nursing mothers, Breast feeding

15 Hours

2.1 Nutritional needs of nursing mothers and infants, determinants of birth weight and consequences of low birth weight

2.2 Breastfeeding biology, Breastfeeding support and counselling.

Credit III : Infant Feeding, Malnutrition among Preschool

15 Hours

3.1 Infant and young child feeding and care - Current feeding practices and nutritional concerns, guidelines for infant and young child feeding, Breast feeding, weaning and complementary feeding.

3.2 Assessment and management of moderate and severe malnutrition among children, Micronutrient malnutrition among preschool children.

Credit IV : Morbidity and Mortality, Nutrition Programmes

15 Hours

4.1 Child health and morbidity, neonatal, infant and child mortality, IMR and U5MR; link between mortality and malnutrition;

4.2 Overview of maternal and child nutrition policies and programmes.

Suggested Readings

Wadhwa A and Sharma S (2003). Nutrition in the Community-A Textbook. Elite Publishing House Pvt. Ltd. New Delhi.

Park K (2011). Park's Textbook of Preventive and Social Medicine, 21st Edition. M/s Banarasidas Bhanot Publishers, Jabalpur, India.

Text book of Human Nutrition, 4th Edition, Ed. by Mahtab S. Bamji, Kamala Krishnaswamy and G.N.V. Brahmam. Oxford and IBH Publishing Co., P. Ltd. New Delhi.

V SEMESTER SYLLABUS – Practical paper

^{504(B)}
BS ~~506~~ ELECTIVE B: MATERNAL AND CHILD NUTRITION

**Total Number of Practicals: 8
2 Hours/week, Credits 1**

1. Visit to a Govt. Hospital to observe a new born infant -Premature and full term baby.
 2. Preparing charts, models and posters for imparting Nutrition education.
 3. Nutrition education to mothers of infants (0-6 months) on importance of breastfeeding.
 4. Diet survey- 24 hour recalls for mothers of infants 0-12 months
 5. Assessing Nutritional status of mothers using diet survey and anthropometry.
 6. Product development- Developing a weaning food or supplementary food for infants (6-12 months of age)
 7. Conducting demonstration of a nutritious weaning food for mothers of infants (6 -12 months of age)
 8. Visit to UNICEF to observe child nutrition programs.
-

B Sc. MODEL PAPER
Semester V
PAPER V: COMMUNITY NUTRITION
THEORY MODEL PAPER- CBCS Pattern

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

13. a) CREDIT I
(OR)
b) CREDIT I
14. a) CREDIT II
(OR)
b) CREDIT II
15. a) CREDIT III
(OR)
b) CREDIT III
16. a) CREDIT IV
(OR)
b) CREDIT IV

**END SEMESTER PRACTICAL EXAMINATION
SEMESTER 5
CLINICAL NUTRITION AND DIETETICS**

PAPER V- COMMUNITY NUTRITION

Date :
Time:

**Max Marks :50
Batch:**

1. List the types of visual aids and discuss the nutrition education program conducted for school children. (10 Marks)

2. Write a brief report of the assessment of schoolchildren using anthropometry. (10 Marks)

3. Visual Aid (10 Marks)

4. Lesson plan prepared and nutrition talk delivered to schoolchildren using the prepared visual aid. (10 Marks)

5. Practical Record (5 Marks)

6. Viva (5 Marks)

SEMESTER VI

PAPER VI CLINICAL DIETETICS

Code BS 603(A), DSE 1-F

60 Hours

4 Hours /Week, Credits 4

Credit I : Screening and Assessment, Burns, cancer, Underweight, Diarrhea and constipation

15 Hours

- 1.1 Nutrition screening and assessment, Nutrition risk screening, Nutrition and diet history.
- 1.2 Burns: Classification of burns, Fluid and electrolyte replacement and dietary management of Burns patients.
- 1.3 Cancer: Definition, Cancer Therapy and Nutritional impact of cancer treatment, Dietary management of cancer patients.
- 1.4 Underweight: Causes of Underweight and dietary recommendations.
- 1.5 Diet in disturbances of the small intestine and colon: Diarrhea - Types of diarrhea and dietary management. Constipation - Types of constipation and dietary management.

Credit II : Ulcerative colitis, Celiac disease, Lactose intolerance, Hepatic coma, Gall bladder and pancreatic diseases

15 Hours

- 2.1 Ulcerative colitis: Symptoms and dietary management.
- 2.2 Celiac disease and Lactose intolerance- Symptoms and dietary treatment.
- 2.3 Hepatic Encephalopathy: Pathophysiology and Medical Nutrition Therapy.
- 2.4 Diet in diseases of the Gall bladder and Pancreas: Etiology, symptoms and dietary management of, Cholecystitis, Cholelithiasis and Pancreatitis.

Credit III : Diabetes, Cardiovascular disease, Hyperlipidemia, Congestive Heart failure

15 Hours

- 3.1 Diabetes Mellitus: Incidence and Predisposing factors, Screening and Diagnostic criteria.
- 3.2 Dietary management of Type 1 and Type 2 Diabetes Mellitus. Types of Insulin, Complications of diabetes.
- 3.3 Risk factors for Cardiovascular disease, Hyperlipidemia - Diagnosis and Medical Nutrition Therapy.
- 3.4 Congestive Heart Failure: Pathophysiology, Symptoms and dietary management.

Credit IV : Renal diseases, Renal calculi, Sodium restricted diets, Gout

15 Hours

- 4.1 Diet in Renal diseases: Symptoms and dietary treatment in Renal Failure, Dialysis- Dietary management of patients undergoing dialysis.
- 4.2 Renal calculi- Types of renal stones, Causes, symptoms and dietary management.
- 4.3 Sodium restricted diets: Levels of Sodium restriction, dangers of sodium restriction.
- 4.4 Gout: Causes and symptoms, Treatment and dietary recommendations.

Suggested Readings

Antia F.P. Clinical Dietetics and Nutrition, Oxford University Press, New Delhi.

Robinson C.H., Lawler M.R., Chenoweth W.L. and Garwick A.E., Normal and Therapeutic Nutrition, Mac Millan Publishing Co.

Srilakshmi B. Dietetics, New Age International (P) Ltd., Publishers.

Burtis G., Davis J. and Martin S. Applied Nutrition and Diet Therapy. W.B. Saunders Co.

Kumud Khanna, Text book of Nutrition and Dietetics, Phoenix Publishing House P. Ltd. New Delhi.

Sue Rodwell Williams, Nutrition and Diet Therapy, Times, Mirror/Mosby, College publishing, St. Louis.

Kathleen Mahan, Sylvia Escott-Stump and Raymond JL, Krause's Food & the Nutrition Care Process, 13th Edition, Elsevier, ISBN: 978-1-4377-2233-8

Antia F.P. Clinical Dietetics and Nutrition, Oxford University Press, New Delhi.

Robinson C.H., Lawler M.R., Chenoweth W.L. and Garwick A.E., Normal and Therapeutic Nutrition, Mac Millan Publishing Co.

Srilakshmi B. Dietetics, New Age International (P) Ltd., Publishers.

Burtis G., Davis J. and Martin S. Applied Nutrition and Diet Therapy. W.B. Saunders Co.

Kumud Khanna, Text book of Nutrition and Dietetics, Phoenix Publishing House P. Ltd. New Delhi.

Sue Rodwell Williams, Nutrition and Diet Therapy, Times, Mirror/Mosby, College publishing, St. Louis.

Kathleen Mahan, Sylvia Escott-Stump and Raymond JL, Krause's Food & the Nutrition Care Process, 13th Edition, Elsevier, ISBN: 978-1-4377-2233-8

VI SEMESTER SYLLABUS – Practical paper

BS 603 CLINICAL DIETETICS
2 Hours/week

Total Number of Practicals: 16
Credits 1

1. Routine Hospital Diets
2. Planning and preparation of diets with modified residue for Diarrhea and Constipation.
3. Planning and preparation of diets for Hepatic Coma.
4. Planning and preparation of diets for Influenza.
5. Planning and preparation of diets for Hyperlipidemia.
6. Planning and preparation of diets for Congestive Heart Failure.
7. Planning and preparation of diets for Burns patients.
8. Planning and preparation of diets for Cancer.
9. Planning and preparation of diets for Type 1 Diabetes Mellitus.
10. Planning and preparation of diets for Type 2 Diabetes Mellitus.
11. Planning and preparation of diets for Hyperlipidemia.
12. Planning and preparation of diets for Congestive Heart Failure.

13. Planning and preparation of diets for Acute Renal failure and Chronic Renal failure.
14. Planning and preparation of diets for patients with chronic renal failure undergoing Dialysis.
15. Planning and preparation of diets for Renal calculi.
16. Planning and preparation of diets for Surgery.

Code BS 603 (B): DIET IN DISEASE DSE 1-F

60 Hours

Credit I : Burns, Cancer

15 Hours

- 1.1 Pre and post operative care
- 1.2 Burns: Classification and degree of burns, fluid & electrolyte replacement & dietary management
- 1.3 Cancer: Definition, Cancer Therapy and Nutritional impact of cancer treatment.

Credit II : Diseases of small intestine, Gall bladder and Pancreas

15 Hours

- 2.1 Diet in diseases of small intestine and colon: Celiac disease and Lactose intolerance- Symptoms and dietary treatment.
- 2.2 Diet in diseases of the Gall bladder and Pancreas: Etiology, symptoms and dietary management of, Cholecystitis, Cholelithiasis and Pancreatitis.

Credit III : Ulcerative colitis, Hyperlipidemia, Congestive heart failure

15 Hours

- 3.1 Ulcerative colitis: Symptoms and dietary management.
- 3.2 Hyperlipidemia – Diagnosis, symptoms and medical nutritional therapy
- 3.3 Congestive Heart Failure: Pathophysiology, Symptoms, and dietary management.

Credit IV : Renal diseases, Renal calculi, Gout

15 Hours

- 4.1 Diet in Renal diseases: Symptoms and dietary treatment in Renal Failure, ARF, CRF, Dialysis- Dietary management of patients undergoing dialysis.
- 4.2 Renal calculi- Types, Causes, symptoms and dietary management.
- 4.3 Gout: Causes and symptoms, Treatment and dietary recommendations.

Suggested Readings

- Sri Lakshmi.B – Dietetics, New Age International Publishers.
- Antia FP. Clinical dietetics and Nutrition, 2nd Edition, Oxford University press, Delhi.
- Swaminathan- Advance text book in Food & Nutrition Volume II, the Bangalore printing and publishing company.
- Krause M, Kathleen. L Mahan and Sylvia Escott Stump, Food , Nutrition, & Diet Therapy, 11 edition WB saunders company, Philadelphia , 2004
- Joshi AS. nutrition & Dietetics 2010, Tata Mc. Graw Hill.
- Robinson C. H. Lawler M. R., Chenoweth W. L. & Garwick A E., Normal and therapeutic Nutrition, Mc Millan Publishing Company.

VI SEMESTER SYLLABUS – Practical paper

BS 603 DIET IN DISEASE
2 Hours/week

Total Number of Practicals: 10
Credits 1

1. Routine Hospital Diets
2. Planning and preparation of diets for Burns Patients.
3. Planning and preparation of diets for Cancer.
4. Planning and preparation of diets for Hyperlipidemia.
5. Planning and preparation of diets for Congestive Heart Failure.
6. Planning and preparation of diets for Acute Renal failure
7. Planning and preparation of diets for Chronic Renal Failure
8. Planning and preparation of diets for patients with chronic renal failure undergoing Dialysis.
9. Planning and preparation of diets for Renal calculi.
10. Planning and preparation of diets for Surgery.

B Sc. MODEL PAPER
Semester VI
PAPER VI: CLINICAL DIETETICS
THEORY MODEL PAPER- CBCS Pattern

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)

NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

13. a) CREDIT I
(OR)
b) CREDIT I
14. a) CREDIT II
(OR)
b) CREDIT II
15. a) CREDIT III
(OR)
b) CREDIT III
16. a) CREDIT IV
(OR)
b) CREDIT IV

**END SEMESTER PRACTICAL EXAMINATION
SEMESTER 6
CLINICAL NUTRITION AND DIETETICS**

PAPER VI – CLINICAL DIETETICS

Date:
Time:

Max Marks:50
Batch:

1. Prepare Lunch or Dinner from the planned therapeutic diet **(30 Marks)**
A or B or C or D as indicated
 - A)
 - B)
 - C)
 - D)
 - a) Menu **(15 Marks)**
 - b) Appearance and taste **(10 Marks)**
 - c) Display **(5 Marks)**
2. Write briefly about the condition **(10 Marks)**
3. Practical Record **(5 Marks)**
4. Viva **(5 Marks)**

SEMESTER VI
PROJECT/ 4 CREDIT PAPER
FOOD SANITATION AND HYGIENE
60 Hours Code BS 606,

4 Hours/Week, Credits 4

Credit I : Sanitation Procedure 15 Hours

1.1 Cleaning and sanitization Need for efficient cleaning program, Cleaning agents, equipments, Methods to wash, rinse and sanitizing food contact surfaces.

1.2 Waste product handling: Planning for waste disposal.

1.3 Outlining methods of disposal of Liquid, Solid and Gaseous waste.

Credit II : Food Hazards 15 Hours

2.1 The relationship of micro organisms to sanitation.

2.2 Environmental effects of microbial growth. Effects of micro organisms on Food degradation and Food borne illnesses -Bacteria, viruses, molds, yeasts and parasites.

2.3 Other Food Hazards Chemicals, Antibiotics and Hormones, metal contamination.

Credit III : Food contamination and spoilage 15 Hours

3.1 Food contamination Sources and transmissions.

3.2 Other agents of contamination. Humans, domestic animals, vermin.

3.3 Control of spoilage, safety of leftover foods.

3.4 Control of infestation: Rodent control Rats, mice, rodent proofing and destruction. Vector control Use of pesticides.

Credit IV : Importance of Personal Hygiene of Food Handlers 15 Hours

4.1 General principles of Hygiene Personal and environmental hygiene, hygienic practices in handling and serving foods.

4.2 Importance of personal hygiene of food handler Habits, clothes, illness.

4.3 Education of food handler in handling and sewing food, sterilization and disinfection

Suggested Readings

Frazier. W., Food Microbiology, McGraw-Hill co Ltd, New Delhi. 2005
Adams M,R and Moss M.O., Food Microbiology, New Age Intemational (P) Ltd.,New Delhi, 2005

Vijaya Ramesh, Food Microbiology, MJP Publications, 2007

David, A. Shapton and Naroh F. Shapton (1991) Principles and practices for the safe processing of foods, Heineman Ltd., Oxford.

Jacob M., Safe Food Handling- A training guide for the manager, WHO, Geneva.

Nicholas Johms, Managing Food Hygiene, Mac Millan Publishing Cm,

Hobbs, BC. and Gilbert RJ . Food Poisoning and Food Hygiene Enngs'n
\mgmge. hock society and Edward Arnold Pubhshers Ltd.,

B Sc. MODEL PAPER
Semester VI
FOOD SANITATION AND HYGIENE (BS 606)
THEORY MODEL PAPER- CBCS Pattern

Time 3 Hrs.

Max Marks 80

PART A (8x4=32M)
(SHORT ANSWER TYPE)


NOTE: ANSWER ANY EIGHT OF THE FOLLOWING QUESTIONS

1. CREDIT I
2. CREDIT I
3. CREDIT I
4. CREDIT II
5. CREDIT II
6. CREDIT II
7. CREDIT III
8. CREDIT III
9. CREDIT III
10. CREDIT IV
11. CREDIT IV
12. CREDIT IV

PART -B(4x12=48M)
(ESSAY ANSWER TYPE)

NOTE: ATTEMPT ALL THE QUESTIONS

13. a) CREDIT I
(OR)
b) CREDIT I
14. a) CREDIT II
(OR)
b) CREDIT II
15. a) CREDIT III
(OR)
b) CREDIT III
16. a) CREDIT IV
(OR)
b) CREDIT IV



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