



**BHARTIVISHWAVIDYALAYA, DURG**

**BHARTI VISHWAVIDYALAYA, DURG  
(C.G.)**

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**SCHEME OF EXAMINATION  
&  
SYLLABUS OF  
DIPLOMA IN NUTRITION AND DIETETICS  
DEPARTMENT OF NUTRITION  
UNDER  
FACULTY OF SCIENCE**

**Session 2021- 22**

**(Approved by Board of Studies)**



**EXAMINATION SCHEME**

**Diploma (First Semester– Nutrition And Dietetics)**

**SEMESTER -1 (20 CREDITS)**

**THEORY (16 CREDITS)**

<b>PAPER</b>	<b>CREDIT</b>	<b>COURSECODE</b>	<b>DURATION</b>	<b>THEORY MARKS</b>	<b>TEACHER ASSESSMENT</b>	<b>TOTAL MARKS</b>
Nutritional Biochemistry	4	DND101	3hr	70	30	100
Dietetics and Diet Counseling	4	DND102	3hr	70	30	100
Human Anatomy	4	DND103	3hr	70	30	100
Public Nutrition	4	DND104	3 hr	70	30	100

**PRACTICAL (08 CREDIT)**

<b>PAPER</b>	<b>CREDIT</b>	<b>COURSECODE</b>	<b>DURATION</b>	<b>THEORY MARKS</b>	<b>TEACHER ASSESSMENT</b>	<b>TOTAL MARKS</b>
Dietetics and Diet Counseling(L)	2	DND 105	3hr	70	30	100
Public Nutrition (L)	2	DND 106	3hr	70	30	100



## EXAMINATIONS SCHEME

Diploma (Second Semester– Nutrition And Dietetics)

SEMESTER -II (20 CREDITS)

THEORY (16 CREDITS)

PAPER	CREDIT	COURSECODE	DURATION	THEORY MARKS	TEACHER ASSESSMENT	TOTAL MARKS
Nutritional Food Chemistry	4	DND201	3hr	70	30	100
Clinical Nutrition	4	DND202	3hr	70	30	100
Human Physiology	4	DND203	3hr	70	30	100
Community Nutrition	4	DND204	3hr	70	30	100

## PRACTICAL (08 CREDIT)

PAPER	CREDIT	COURSECODE	DURATION	THEORY MARKS	TEACHER ASSESSMENT	TOTAL MARKS
Clinical Nutrition (L)	2	DND 205	3 Hrs.	70	30	100
Community Nutrition	2	DND 206	3 Hrs.	70	30	100



## **Diploma in Nutrition and Dietetics**

### **Semester-I**

#### **Paper I: Nutritional Biochemistry**

##### **UNIT-1. CHEMISTRY AND METABOLISM OF CARBOHYDRATES**

- Definition
- Classification
- Biological role
- Metabolism - Digestion and absorption, Glycolysis, Krebs cycle, Electron Transport System, Gluconeogenesis, Glycogenesis, Glycogenolysis, HMP pathway, Galactose Metabolism, Fructose Metabolism, Disorders related to Carbohydrate metabolism.

##### **UNIT-2. CHEMISTRY AND METABOLISM OF LIPIDS**

- Definition
- Classification
- Biological Role of Fatty Acids and Lipids Metabolism- Digestion and Absorption, Oxidation of Fatty Acids
- Metabolism of Lipoproteins and Ketone Bodies and Their Significance,
- Cholesterol Metabolism,
- Metabolism of Adipose Tissue, Disorders Related to Lipid Metabolism.

##### **UNIT-3. CHEMISTRY AND METABOLISM OF PROTEINS**

- Definition
- Classification
- Biological Role of Amino Acids and Proteins Biological Value of Protein
- Metabolism - Digestion and Absorption, Transamination, Deamination,
- Metabolism of Ammonia, Urea Cycle.
- Disorders Related To Protein/Amino Acid Metabolism

##### **UNIT-4. VITAMINS**

- Definition
- Classification
- Absorption and Role of Vitamins in Metabolism  
Deficiency Diseases

##### **UNIT-5. HORMONES**

- Definition
- Classification
- Mechanism of Action
- Hormones of Hypothalamus, Pituitary Gland, Thyroid Gland, Adrenal Gland, Gonads
- Gastrointestinal Hormones.



**Reference Books:**

- Dasgupta, S. K., Biochemistry Vol. I; n & III, Mc Millan Co. of India Limited
- Das, Debajyoti, Biochemistry 2nd ed., 1980, Academic Publishers, India.
- Harper, H. A. et al, A review of physiological chemistry, Los Altos, Lange medical publications, 1985.
- Lehninger, A. L., Principles of Biochemistry
- Orten J. M. & Newhaus O. V, Human Biochemistry, C. V Mosby
- Co. S1. Lois, JSA 1982.
- Chatterjee Textbook of Medical Biochemistry
- Biochemistry, U Satyanarayna, U.Chakrapani 4th edition,



**Diploma in Nutrition and Dietetics**  
**Semester-I**  
**Paper II: Dietetics and Diet Counseling**

**UNIT-1. THERAPEUTIC DIETS:**

- Basic Concept
- Therapeutic Adaptation of Normal Diet
- Factors Considered
- Routine Hospital Diets
- Mode of feeding methods
- Role of dietitian in the Hospital and Community Patient Care and Counseling.

**UNIT-2. DIET IN WEIGHT IMBALANCE AND COUNSELING:**

- Obesity and Underweight
- Causes Health Risk
- Dietary Treatment
- Psychotherapy

**UNIT-3. DIET, NUTRIENT AND DRUG IN TERACTION**

- Effect of drugs on ingestion, digestion, absorption and metabolism of nutrients.
- Effect of food, nutrients and nutritional status on drug dosage and efficacy.

**UNIT-4. DIET IN FEVER:**

- Nutrition and Infection
- Metabolic changes during Infection
- Typhoid fever
- Tuberculosis
- HIV Infection and AIDS

**UNIT-5. ANEMIA**

- Resulting from Acute Hemorrhage
- Nutritional anemia
- Sickle cell anemia
- Thalassemia
- Pathogenesis and dietary management in the above condition.



**Reference Books:**

1. Mahan L. K., Escott- Stump, S. and Raymond J. L. (2012): “Krause’s Food and the Nutrition Care Process”, 13<sup>th</sup> Edition, Elsevier.
2. Ross, A.C., Caballero B., Cousins R. J., Tucker K.L. and Ziegler T. (2014) Modern Nutrition in Health and Disease. Wolters Kluwer Health/ Lippincott Williams and Wilkins. Ed 11<sup>th</sup>
3. Garrow, J. S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics. 10<sup>th</sup> Edition, Churchill Livingstone.
4. Nix Staci (2013) William’s Basic Nutrition and Diet Therapy. Elsevier Ed.14<sup>th</sup>.



**Diploma in Nutrition and Dietetics**

**Semester-I**

**Paper III- HUMAN ANATOMY**

**UNI-1. ORGANIZATION OF HUMAN BODY**

- General anatomy of human body
- Structure of cell
- Tissues -Structure and functions of various types of tissues
- Introduction to various systems
- Skeletal system,
- Cavities of body

**UNIT-2. DIGESTIVE SYSTEM**

- Brief study of the anatomical organization of the digestive tract
- Process of digestion, absorption and assimilation of Food.

**UNIT-3. CIRCULATORY SYSTEM**

- Heart Structure and working of heart
- Determination of Blood pressure
- Cardiac cycle
- Cardiac output, Heart rate

**UNIT-4. LYMPHATIC SYSTEM**

- Composition and Formation,
- Organs involved, functions of lymph

**Unit-5. HEMATOLOGY**

- Composition and functions of blood
- Mechanism of blood coagulation
- Blood group systems





**Diploma in Nutrition and Dietetics**

**Semester-I**

**Paper IV- Public Nutrition**

**UNIT-1.PUBLIC NUTRITION:**

- Concept
- Scope
- Future Projections
- Health Care
- Role Of Public Nutritionists In Health Care Delivery

**UNIT-2. NUTRITIONAL PROBLEMS IN INDIA:**

- Protein Energy Malnutrition
- Micronutrient Deficiencies
- Vitamin Deficiencies

**UNIT3. ASSESSMENT OF NUTRITIONAL STATUS:**

- Population Sampling
- Anthropometry
- Clinical Assessment
- Biochemical Assessment
- Dietary Assessment

**UNIT-4. NUTRITION MONITORING AND NUTRITION**

- Surveillance
- Nutrition Monitoring And Its Current
- Programmes.

**UNIT-5.**

- Nutrition Surveillance System
- Immunization



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### Reference Books:

- Beaton GH and Bengoa JM. Nutrition in Preventive Medicine. WHO (1976).
- FAO/WHO. Preparation and use of food based dietary guidelines. Report of a
- joint FAO/WHO consultation: Nicosia, Cyprus. Nutrition Programme, WHO,
- Geneva (1996).
- Gibney M. J., Margetts B. M., Kearney J. M. and Arab L. Public Health
- Nutrition. Blackwell Publishing Company (2013).



**EXAMINATION SCHEME**

**Diploma (Second Semester– Nutrition and Dietetics)**

**SEMESTER -II (20 CREDITS)**

**THEORY (16 CREDITS)**

<b>PAPER</b>	<b>CREDIT</b>	<b>COURSECODE</b>	<b>DURATION</b>	<b>THEORY MARKS</b>	<b>TEACHER ASSESSMENT</b>	<b>TOTAL MARKS</b>
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Clinical Nutrition (L)	<b>2</b>	DND 205	<b>3 Hrs.</b>	<b>70</b>	<b>30</b>	100
Community Nutrition (L)	<b>2</b>	DND 206	<b>3 Hrs.</b>	<b>70</b>	<b>30</b>	100



**Diploma in Nutrition and Dietetics**

**Semester-II**

**Paper –I NUTRITIONAL FOOD CHEMISTRY**

**UNIT-1. MINERALS**

- Definition
- Types
- Absorption and Function and Role of Minerals
- Metabolism Deficiency Diseases.

**UNIT-2.WATER BALANCE**

- Functions of Water
- Distribution of Body Water
- Water Intake And Water Output

**UNIT-3. ELECTROLYTE BALANCE**

- Electrolyte Composition of Body Fluids
- Regulation of Electrolyte Balance
- Dehydration and Over hydration

**UNIT-4. ACID BASE BALANCE**

- Role of Buffers
- Lungs and Kidney in Maintaining Acid Base Balance and Related Disorders.

**UNIT-5. ORGAN FUNCTION TESTS**

- Liver Function Tests
- Kidney Function Tests
- Gastric Function Tests
- Pancreatic Function Tests
- Thyroid Function Tests



## References:

- Dasgupta, S. K., Biochemistry Vol. I; n & III, Mc Millan Co. of India Limited
- Das, Debajyoti, Biochemistry 2nd ed., 1980, Academic Publishers, India.
- Harper, H. A. et al, A review of physiological chemistry, Los Altos, Lange medical publications, 1985.
- Lehninger, A. L., Principles of Biochemistry
- Orten J. M. & Newhaus O. V, Human Biochemistry, C. V Mosby Co. S1. Lois, JSA 1982.
- Chatterjee Textbook of Medical Biochemistry
- Biochemistry, U Satyanarayna, U.Chakrapani 4th edition,



**Diploma in Nutrition and Dietetics**

**Semester-II**

**Paper –II Clinical Nutrition**

**UNIT-1. FOOD INTOLERANCES AND FOOD ALLERGY:**

- Adverse food reactions
- Treatment and Management
- Prevention.

**UNIT-2. TYPES OF THERAPEUTIC DIETS IN VARIOUS DISORDERS:**

- Nutrition For Cardiovascular Diseases
- Dietary Management In Chronic Renal Failure
- Dietary Management In Gout
- Nutrition In Liver Diseases
- Nutrition In Gastrointestinal Disorders.

**UNIT-3. DISEASES OF METABOLIC DISORDER AND COUNSELING:**

- Diabetes Mellitus
- Gout.

**UNIT-4. DIET IN CANCER AND COUNSELING:**

- Risk factors
- Metabolic Alterations and Nutritional Problems related to Cancer
- Nutritional requirements of Cancer patients related to Cancer Therapy
- Cancer Prevention.

**UNIT-5. NUTRITION IN EATING DISORDERS:**

- Introduction
- Anorexia Nervosa
- Bulimia Nervosa
- Binge Eating Disorders



**References:**

1. Mahan L. K., Escott- Stump, S. and Raymond J. L. (2012): “Krause’s Food and the Nutrition Care Process”, 13<sup>th</sup> Edition, Elsevier.
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3. Garrow, J. S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics. 10<sup>th</sup> Edition, Churchill Livingstone.
4. Nix Staci (2013) William’s Basic Nutrition and Diet Therapy. Elsevier Ed.14<sup>th</sup>.



**Diploma in Nutrition and Dietetics**  
**Semester-II**  
**Paper –III Human PHYSIOLOGY**

**UNIT-1. DEFENSE MECHANISMS OF THE BODY**

- First Line, Second And Third Line Of Defense
- Active Immunity
- Passive Immunity
- Factors Affecting Immunity
- 

**UNIT-2. RESPIRATORY SYSTEM**

- Basic anatomy of the Respiratory System
- Process of Respiration
- Disorders

**UNIT- 3. URINARY SYSTEM**

- Structure and functions of organs of urinary system
- Composition of normal and abnormal urine

**UNIT-4. NERVOUS SYSTEM**

- Structure of Neuron
- Transmission of nerve Impulse
- Organs of Central nervous system and their functions
- Peripheral Nervous system
- Autonomous Nervous system
- Reflex Action

**UNIT-5. REPRODUCTIVE SYSTEM**

- Introduction
- Male Reproductive System
- Female Reproductive System





**Reference books:**

1. L Antony, C.A (1963), 'Text Book of Anatomy and Physiology', the c.v. Mosby Co., Saint Louis
2. Bell G.H., Davidson, J.N., and Scarborough H. (1972) 'Textbook of Physiology and Biochemistry' London E.S. Livingston Ltd.
3. Best. C.H., and Taylor, R. B. (1965) 'The Living Body', London, Chapman & Hall Ltd.
4. Best. c.H., and Taylor. R.B. (1975), 'The Physiological Basis for Medical Practice' Calcutta, The Williams and Wilkinson Scientific Book Agency.
5. Guytons, AC. (1966), 'Text book of Medical Physiology', London, W.B. Saundes & Co.
6. Rogers, T.S, Elementary (1961), 'Human Physiology', New York, John Willey and Sons, Inc.7. Green, H.(1972), 'An Introduction to Human Physiology' London, Oxford University Press
7. K Sembulingam, Prem Sembulingam. Essentials of Medical Physiology.



**Diploma in Nutrition and Dietetics**  
**Semester-II**  
**Paper –IV COMMUNITY NUTRITION**

**UNIT-1. INTRODUCTION TO CONCEPT OF COMMUNITY**

- Rural And Urban Communities
- Community Health,
- Health Care Of Community Nutrition
- And Its Future Projections

**UNIT-2. PROTEIN ENERGY MALNUTRITION**

- Etiology,
- Prevalence,
- Causes, Prevention
- And Control.

**UNIT-3. MAJOR NUTRITIONAL PROBLEMS OF NUTRIENTS**

- Macronutrient deficiencies and micronutrient deficiencies,
- Etiology, Symptoms,
- Prevention
- and control

**UNIT-4. NUTRITION AND HEALTH EDUCATION**

- Definition
- Importance
- Nutrition Education Methods
- Teaching Aids Used In Nutrition Education
- Mass Communication Media Used In Nutrition Education

**UNIT-5. NUTRITION POLICY AND PROGRAMME**

- Integrated Child Development Services (ICDS) Programme
- Nutrient Deficiency Control Programme
- Supplementary Feeding Programme
- Food Security Programme
- Self-Employment And Wage Employment Schemes



**Reference books:**

- National Nutrition Policy. Department of Women and child Development.
- Ministry of Human Resource Development, New Delhi, Government of India, 1993.
- Park.K. (2017) Park's Textbook of Preventive and Social Medicine, 24<sup>th</sup> ed.
- M/s Banarsida Bhanot, Jabalpur.
- Jelliffe, D. B and Jelliffe, E.F.P. (1989) Community Nutritional Assessment,
- Oxford University Press.
- Wadhwa, A. and Sharma, S. (2003) Nutrition in the Community - A text book
- SCN News, UN ACC/SCN Subcommittee on Nutrition.