



Faculty of Nursing
Basic B. Sc. Nursing - (B.Sc. Nursing)
(W. E. F.: 2023-24)
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Name of Faculty	:	Faculty of Nursing
Name of Program	:	Basic B.Sc. Nursing
Course Code	:	2BSN01
Course Title	:	Applied Biochemistry
Type of Course	:	PC
Year of Introduction	:	2023-24

Pre requisite	:	Basic Knowledge of Biochemistry subject
Course Objective	:	The course is designed to assist the students to acquire knowledge of the normal biochemical composition and functioning of human body, its alterations in disease conditions and to apply this knowledge in the practice of nursing.
Course Outcomes	:	On completion of the course, the students will be able to
	CO1	Describe the metabolism of carbohydrates and its alteration
	CO2	Explain the metabolism of lipids and its alterations
	CO3	Explain the metabolism of proteins and amino acids and its alterations
	CO4	Explain clinical enzymology in various disease condition
	CO5	Explain acid base balance, imbalance and its clinical significance
	CO6	Describe the metabolism of hemoglobin and its clinical significance
	CO7	Explain different function tests and interpret the findings
	CO8	Illustrate the immunochemistry

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	SEE	CIA	SEE	CIA	
Applied Biochemistry				75	25	0	0	100
2	0	0	2					
Applied Nutrition and Dietetics								
3	0	0	3					

Note:

1. Applied Nutrition and Dietetics and Applied Biochemistry: Question paper will consist of Section-A Applied Nutrition and Dietetics of 50 marks and Section-B Biochemistry of 25 marks.

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice;P - Practical, C - Credit, SEE - SemesterEnd Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)



Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping With COs
I.	<p>Carbohydrates</p> <ul style="list-style-type: none"> • Digestion, absorption and metabolism of carbohydrates and related disorders • Regulation of blood glucose • Diabetes Mellitus - type 1 & type 2, symptoms, complications & management in brief • Investigations of Diabetes Mellitus <ul style="list-style-type: none"> ○ OGTT: Indications, Procedure, Interpretation and types of GTT curve ○ Mini GTT, extended GTT, GCT, IV GTT ○ HbA1c (Only definition) • Hypoglycemia-definition & causes 	08	20%	CO1
II.	<p>Lipids</p> <ul style="list-style-type: none"> • Fatty acids: Definition, classification • Definition & Clinical significance of MUFA &PUFA, Essential fatty acids, Trans fatty acids • Digestion, absorption & metabolism of lipids & related disorders • Compounds formed from cholesterol • Ketone bodies (name, types & significance only) • Lipoproteins – types & functions (metabolism not required) 	08	20%	CO2
	<ul style="list-style-type: none"> • Lipid profile 			



	<ul style="list-style-type: none"> Atherosclerosis (in brief) 			
III.	<p>Proteins</p> <ul style="list-style-type: none"> Classification of amino acids based on nutrition, metabolic rate with examples Digestion, absorption & metabolism of protein & related disorders Biologically important compounds synthesized from various amino acids (only names) In born errors of amino acid metabolism - only aromatic amino acids (in brief) Plasma protein - types, function & normal values Causes of proteinuria, hypoproteinemia, hyper-gamma globinemia Principle of electrophoresis, normal & abnormal electrophoretic patterns (in brief) 	09	22.5%	CO3
IV	<p>Clinical Enzymology</p> <ul style="list-style-type: none"> Isoenzymes - Definition & properties Enzymes of diagnostic importance in <ul style="list-style-type: none"> Liver Diseases-ALT, AST,ALP, GGT Myocardial infarction-CK, cardiac troponins, AST,LDH Muscle diseases-CK,Aldolase Bone diseases-ALP Prostate cancer-PSA,ACP 	04	10%	CO4



V	Acid base maintenance <ul style="list-style-type: none">pH - definition, normal valueRegulation of blood pH – blood buffer, respiratory & renalABG - normal valuesAcid base disorders –types, definition & causes	03	7.5%	CO5
VI	Heme catabolism <ul style="list-style-type: none">Heme degradation pathwayJaundice – type, causes, urine & blood investigations (van den berg test)	02	5%	CO6
VII	Organ function tests (biochemical parameters & normal values only) <ul style="list-style-type: none">RenalLiverThyroid	03	7.5%	CO7
VIII	Immunochemistry <ul style="list-style-type: none">Structure & functions of immunoglobulinInvestigations & interpretation- ELISA	03	7.5%	CO7