

Padmashree Dr. D. Y. Patil College of Nursing, Pimpri , Pune-18

First year P.B. B. Sc Nursing

Subject: Biochemistry

Faculty: External

UNIT	TOPIC	Number of lecture	Lecture Serial No
UNIT I INTRODUCTION	- Introduction: importance of Biochemistry in Nursing	1	1
	- Study of cell and its various components	1	2
UNIT II WATER AND ELECTROLYTES	Distribution of water and its functions in human body (ECF & ICF) - Water & Fluid balance - Electrolyte Distribution and its functions in body	1	3
	- Dehydration causes and consequences - Electrolyte imbalance – causes, hypo and hypernatremia and kalemia	1	4
	Tutorial	1	5
UNIT III ENZYMES	Definition and Mechanism of action - Factors affecting enzyme activities	1	6
	- Enzymes in clinical diagnosis and its applications	1	7
	- Precautions for handling specimens for enzymes estimation	1	8
	- Digestion and Absorption of carbohydrates, proteins and lipids.	1	9
	- Factors influencing the digestion and absorption - Mal absorption syndrome	1	10
	Tutorial	1	11
UNIT IV CARBOHYDRATES	Elementary outline of Electron transport chain (ETC) and Biological	1	12

	Oxidation		
	- Elementary consideration of Mono, di and polysaccharides	1	13
	- Fate of glucose in the body including-gluconeogenesis, glycogenesis,	1	14
	glycolysis, glycogenolysis. Storage of glucose. - Outline and Importance of TCA Cycle (Kreb's cycle)	1	15
	- Regulation of blood glucose levels. Glucose Tolerance test (GTT)	1	16
	Tutorial	1	17
UNIT V PROTEINS – AMINO ACIDS & HARMONES	Protein Chemistry - Essential amino acids, properties and functions	1	18
	- Important polypeptides - Plasma Proteins and their functions	1	19
	- Nucleic acids- DNA, RNA - Biosynthesis of proteins in the cells and Role of nucleic acids in protein synthesis	1	20
	- Nitrogenous constituents of Urine, blood their origin Urea cycle and	1	21
	Nitrogen balance. Uric Acid formation, gout.	1	22
	Tutorial	1	23
UNIT VI LIPIDS	Biological Importance of important lipids and their functions - Cholesterol and Lipoproteins - Sources occurrence and distribution	1	24
	- Blood levels and Metabolism - Biosynthesis of fats and storage of fats (B-oxidation)	1	25
	- Role of liver in fat metabolism Fatty liver, its causes and prevention	1	26
	- Goal of lipid metabolism in Atherosclerosis and Heart diseases	1	27

	- Ketone body formation and its utilization. - Causes and detection of ketosis	1	28
	Biological Importance of important lipids and their functions	1	29
	Tutorial	1	30
UNIT VII INTER- RELATIONSHIP IN METABOLISM	Carbohydrates, Lipids, a Protein, minerals metabolism	2	31,32
	- Nutrition calorie value of food, BMR, SDA, Balance Diet	2	33,34
	Tutorial	1	35

REFERENCES

1. Anthikad, 'J' : Biochemistry for nurses ;New Delhi : Jaypee Brothers
2. Dandekar S.P. : Medical biochemistry (based on MCI guidelines) ;New Delhi : Jaypee Brothers
3. Das, Debajyoti : Biochemistry; New ed.; Calcutta, Academic publishers
4. Hodkinson M: Clinical biochemistry of the elderly; London: Churchill Livingstone, 1984
5. Malhotra, V. : Biochemistry for students; New Delhi: Jaypee Brothers, 1985
6. Nath, R.L.: Practice of biochemistry in clinical medicine, 1976
7. U Satyanarayana : Biochemistry; Books and Allied Ltd.
8. Eastham Duncan Robert: Biochemical values in clinical medicine; 8th ed.: John Cought and Sons Ltd., 1977