

Zoology Department, Kalindi College (University of Delhi)

CURRICULUM PLAN (Aug.-Dec, 2022)

2022-23

Dr. P. P. Saini

Subject- Physiology and Biochemistry

Class- B. Sc. Life Science Sem III (CORE; Theory)

Day of Theory classes- Tuesday and Wednesday

Share with- Dr. Manisha Arora Pandit

Duration	Contents
27 and 28 Aug	Basic structure and physiological significance of Monosaccharides, Disaccharides, Homo and Heteropolysaccharides.
Sep	Glycolysis (Preparatory and Payoff phases, regulation, fates of pyruvate), Krebs's Cycle (formation of Acetyl CoA, reactions of cycle, regulation), Pentose phosphate pathway (Oxidative and Non-oxidative Phases), Gluconeogenesis (Bypass reactions, regulation and reciprocal coordination of glycolysis and gluconeogenesis, Glycogen Metabolism (Glycogenolysis, Glycogenesis and its coordinated regulation), Review of Electron Transport Chain (Basics of electron transfer reactions, Universal Electron Acceptors without detailed structures, electron flow through complexes, Chemiosmotic theory, basics of ATP synthesis)
01-15 Oct	Unit 8: Lipid Metabolism 5 hrs Basic structure and physiological significance of fatty acids, structure and significance of storage and structural lipids. Biosynthesis (FAS and synthesis reactions, regulation) and β oxidation of palmitic acid (activation of fatty acids and oxidation with bioenergetics, regulation)
16 Oct–01 Nov	Unit 9:Protein metabolism 5 hrs Structure, classification and properties of amino acids, basics of protein structure; Transamination, Deamination, Glutamine formation, Glucose alanine cycle and Urea Cycle
05 Nov -22 Nov	Unit 10:Enzymes 6 hrs Introduction (basics of classification, properties and functions), Mechanism of action (understanding of basic concepts, Induced Fit Theory), Enzyme Kinetics (Michaelis Menten equation for single enzyme single substrate reactions, Line Weaver Burke Plot), Inhibition and Regulation (types of Inhibition, allosteric enzymes, covalently regulated enzymes)
26 Nov-13 Dec	Unit 5: Cardiovascular system 5 hrs Structure of Heart, Origin and conduction of the cardiac impulse, Cardiac cycle

NAME OF TEACHER

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Subject- Physiology and Biochemistry

Class-B. Sc. Life Science Sem III (CORE; Practical) (Group-II)

Day of Practical class- Friday

Shared with- Dr. Manish Arora Pandit and Dr. Kanchan Batra

Date	Contents
26 Aug	Preparation of hemin and hemochromogen crystals
02 Sep	Revision of Preparation of hemin and hemochromogen crystals
09Sep and 16 Sep	Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose,Fructose, Sucrose, Lactose)
23 Sep and 30 Sep	Study of activity of salivary amylase under optimum conditions
07 Oct	Study of permanent histological sections of mammalian pituitary, thyroid, pancreas,adrenal gland
14 Oct	Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage
21Oct and 28 Oct	Estimation of total protein in given solutions by Lowry's method
November-Dec	REVISION and Mock TEST Practical Examination

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