

▪ SEMESTER:- I

▪ COURSE NO.:- FCN-111

▪ COURSE TITLE:- BIOCHEMISTRY

▪ CREDITS:- 3(2+1)

➤ THEORY

NO. OF UNITS	TOPICS	NO. OF LECTURES
1	<i>Biochemistry & its scope</i>	1
2	<i>Cellular Biochemistry</i> <i>Cell-structure – plant and animal, composition and function of cell organelles</i>	1
3	<i>Carbohydrates</i> - <i>Occurrence, Classification & Structures</i> - <i>Physicochemical and Metabolic functions</i> - <i>Metabolism – Glycolysis, TCA cycle, HMP pathway, ETC, Oxidative phosphorylation and Gluconeogenesis.</i>	2 2 3
4	<i>Proteins</i> - <i>Occurrence, Classification & Structures</i> - <i>Physicochemical & Metabolic functions</i> - <i>Metabolism- Transamination, Deamination and Decarboxylation, Amino acids- classification, structure biosynthesis of amino acids.</i>	2 2 3
5	<i>Lipids</i> - <i>Occurrence, Classification & Structure</i> - <i>Physicochemical and Metabolic functions</i> - <i>Metabolism- degradation of fats, β- oxidation, fatty acids, classification and biosynthesis.</i>	2 2 3
6	<i>Nucleic Acids</i> - <i>Classification, Structure & Biosynthesis of nucleic acid,- Metabolism RNA and DNA metabolism.</i>	2
7	<i>Vitamins- Sources and Classification,</i> - <i>Chemistry and Metabolic functions, Deficiency diseases syndromes</i>	3
8	<i>Enzymes :</i> - <i>Chemical nature and Nomenclature</i> - <i>Classification, Sources and Properties</i> - <i>Mechanism of action, Coenzyme and Prosthetic groups</i>	
	TOTAL	30

➤ PRACTICALS

NO. OF UNITS	TOPICS	NO. OF EXPT.
1	<i>Safety measures in the laboratory</i>	1
2	<i>Preparation of various solutions and buffers</i>	2
3	<i>Qualitative & quantitative determination of carbohydrates</i>	3
4	<i>Qualitative & quantitative determination of amino acids</i>	3
5	<i>Qualitative & quantitative determination of proteins</i>	3
6	<i>Qualitative & quantitative determination of lipids</i>	3
7	<i>Qualitative & quantitative determination of vitamins – B1, B2, Vitamin-A, Vitamin-C</i>	2
8	<i>Isolation of enzymes from various sources</i>	2
	TOTAL	19

➤ *Reference Books*

- *Outlines of Biochemistry* *Cohn & Stumpf*
- *Text Book of Biochemistry* *West & Todd*
- *An Introduction to Practical Biochemistry* *Plummer D.T.*
- *Osner Hawk's Practical Physiological Chemistry* *Hawk.*
- *Principles of Biochemistry* *Lehninger*
- *Principles of Biochemistry* *Voet*
- *Practical Biochemistry* *Thamiah, Sadashivam, Jayraman*