

Lecture plan for M.F. Sc Second semester (Batch- 2025)

Course – FISH BIOCHEMISTRY

Course code- FPB-503

credit hrs.- 3(2+1)

Theory

<i>Sl no.</i>	<i>Topic</i>	<i>No of lecture</i>
01.	Introduction	1
02.	Carbohydrates: Definition, classification and biological significance;	2
03.	Chemical reactions stereoisomerisms and mutarotation,	1
04.	Structure and properties of monosaccharides, disaccharides, polysaccharides and mucopolysaccharides.	3
05.	Proteins: Definition, classification, biological significance and structure	2
06.	Lipids: Definition, classification, biological significance.	2
07.	Fatty acids: PUFA, prostaglandins, saponification and iodine number, peroxide value.	2
08.	Phospholipids and steroids: Structure, properties and functions.	2
09.	Nucleic acids: Structure, functions and properties. Structure of purines, pyrimidine; DNA and RNA	2
09.	Different type of DNA and RNA, Watson and Crick model of DNA.	2
10.	Enzymes: Nomenclature and structure of enzymes, Active site; Concepts of activation energy,	2
11.	Transition state and enzyme-substrate complex, Units of enzyme activity, enzyme kinetics; Factors affecting enzyme activity	3
12.	Vitamins and minerals: Chemical structure, sources, properties of water- and fat-soluble vitamins, biological significance of minerals	3
Total no of lecture		27

Practical

Sl no.	Practical	No of lecture
01.	Extraction and purification of tissue proteins	2
02.	Isolation, purification and characterization of nucleic acids from tissue extract	2
03.	cDNA synthesis	1
04.	Qualitative analysis of proteins	1
05	Qualitative analysis of Carbohydrates	2
06	Qualitative analysis of Lipids	2
07	Quantitative analysis of proteins	1
08	Quantitative analysis of Carbohydrates	1
09	Quantitative analysis of Lipids	1
10	Agarose gel	1
11	and SDS PAGE;	1
12	Enzyme assay and kinetics	2
Total No of Practical		17

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