Lecture plan for M.F.Sc. 2nd semester

Department of Fish Physiology and Biochemistry

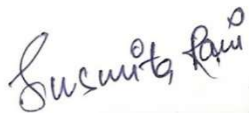
Course – Diagnostic Biochemistry **Course code- FPB-507** **Credit hrs. 3(2+1)**

Theory

Sl. no.	*Topic*	*No of lecture*
1.	Blood analysis: Analytes in blood, Tissues, Invasive and non-invasive techniques of blood drawing in fish, Their limitations and interpretation.	2
2.	Hemoglobin, Hematocrit, Plasma proteins, Glucose tolerance test.	3
3.	Enzymes and metabolic disorders: Subcellular distribution of enzymes, Isolation and purification of enzymes, General properties.	2
4.	Enzyme activity, Marker enzymes, Metabolic disorders related to carbohydrate, Lipid, Protein and nucleic acid metabolism in fishes.	2
5.	Enzyme markers: Enzymes and iso-enzymes of clinical significance;	2
6.	Acid phosphatase, Alkaline phosphatase, Amylase, angiotensin converting enzyme,	1
7.	Cholinesterase, Creatine phosphokinase, Gamma glutamyl transferase, Lactate dehydrogenase.	1
8.	Vitamins and minerals: Vitamins and Minerals sub-clinical and clinical deficiencies.	2
9.	Electrolytes and acid-base balance, Regulation of electrolyte content of body fluids.	2
10.	Biochemical indicators for vitamin and mineral stress.	1
11.	Lipids carriers and disorders: Chylomicrons, VLDL and IDL, HDL, LDL.	2
12.	Implications in disease, Fatty liver, liver, kidney and bone disorders, Liver function tests, Detoxification mechanisms of gill, liver and kidney, Pesticide poisoning.	2
13.	Immunoglobulins: Structure, Classes, Properties and functional significance of Immunoglobulins.	1
14.	Monoclonal antibodies.	1
	Total	24

Practical

1.	Estimation of blood glucose	1
2.	Estimation of albumin and globulin	2
3.	Gel electrophoresis of serum proteins	2
4.	Quantification of serum proteins	1
5.	Determination of A/G ratio in serum	1
6.	Analysis of stress proteins	3
7.	Liver and plasma enzyme assay (GOT, GPT, ALP, AchE, CPK, LDH, Urease)	4
	Total	**14**



Course teacher- Ms. Susmita Rani