BHARATHIAR UNIVERSITY, COIMBATORE
M. Sc., ZOOLOGY DEGREE COURSE WITH COMPULSORY DIPLOMA IN POULTRY SCIENCE AND MANAGEMENT / DIPLOMA IN COMMUNITY HEALTH
(Colleges - CBCS PATTERN)
(For the students admitted During the Academic Year 2008-2009 Batch & Onwards)

SCHEME OF EXAMINATION

Sem	**Subject and Paper**		Inst. Hrs/ Week	University Examinations				
				Dur.	CIA	EXT	Total	Credits
I	Paper I	Animal Physiology	6	3	25	75	100	5
	Paper II	Molecular Cell Biology and Biotechnique	6	3	25	75	100	4
	Paper III	Genetics and Evolution	6	3	25	75	100	4
		Diploma Theory Paper I	4	3	25	75	100	3
II	Paper IV	Ecology and Quantitative Biology	6	3	25	75	100	4
	Paper V	Biochemistry, Biophysics and Bioinformatics	6	3	25	75	100	5
	Paper VI	Experimental Embryology and Immunology	6	3	25	75	100	4
		Diploma Theory Paper II	4	3	25	75	100	3
	Practical I	Comprises of papers I, II and III	4	4	40	60	100	5
	Practical II	Comprises of papers IV, V and VI	4	4	40	60	100	5
III	Paper VII	Microbiology	5	3	25	75	100	4
	Paper VIII	Animal Behaviour	5	3	25	75	100	4
	Paper IX	Entomology I	4	3	25	75	100	4
	Paper X	Optional Subject – Paper I	4	3	25	75	100	4
		Diploma Theory Paper III	4	3	25	75	100	3
IV	Paper XI	Biodiversity	5	3	25	75	100	4
	Paper XII	Recent Trends in Zoology	5	3	25	75	100	4
	Paper XIII	Entomology II	4	3	25	75	100	4
	Paper XIV	Optional Subject - Paper II	4	3	25	75	100	4
	Practical III	Entomology Practical	4	4	40	60	100	5
	Practical IV	Optional Subject Practical	4	4	40	60	100	5
		Diploma Practical Comprises Diploma Theory Papers	4	4	40	60	100	3
		Total Marks					2200	90

Optional Subject : (any one to be chosen)

1. Environmental Biology
2. Toxicology

Note :

1. The Syllabus for the above papers (except Toxicology – Paper I, II & Toxicology Practical) will be the same as prescribed for the academic year 2007- 08.
2. The syllabus for the papers Toxicology – Paper I, II & Toxicology Practical are furnished below.

SEMESTER – III

OPTIONAL – TOXICOLOGY I

UNIT I
Introduction & Scope of Toxicology
Origin – Scope –Disciplines of toxicology importance of toxicology, Toxicity – Acute & Chronic, Bioassays - methods in toxicology

UNIT II
Classification of Toxicants
Pesticides, Heavy metals, Oil and combustion, Chemicals & Radio active substances.

UNIT III
Exposure of Toxicants
Route of exposure - Absorption – Distribution – Excretion

UNIT IV
Mechanisms of Toxicants
Mode of action of xenobiotics, Target site interactions – Factors affecting xenobiotic chemicals.

UNIT V
Persistence of Toxicants
Toxic residues – Residue analysis (procedure & Techniques)

SEMESTER – IV

OPTIONAL – TOXICOLOGY II

UNIT I
Environmental Toxicology
Toxicants in the environment (in lithosphere, hydrosphere, atmosphere) – Dynamics of toxicants in the environment – Bioaccumulation, Bio transformation, & Biodegradation.

UNIT II
Effect of Xenobiotics
Physiological and biochemical effects of xenobiotics of flora and fauna – Impact of toxic chemicals on enzyme systems, Translocation of toxicants

UNIT III
Toxicological Tests
Teratogenesis and Teratogenecity evaluation, Mutagens and Mutagenecity evaluation, Carcinogen and carcinogenicity evaluation.

UNIT IV
Environmental Toxic impact assessment
Impact assessment, Impact on Air quality, water quality, & solid waste. Environmental planning.

UNIT V
Safety evaluation of toxicants
Risk assessments, Safety evaluation programme.

REFERENCES:
1. Toxicology - A. Sood
2. Elements of Toxicology - Pandey and Shukla
3. Introduction to Toxicology - S.N. Prasad and Vasanthika kasyhap
4. Toxicology - P.D. Sharma
5. Pollution & Health - P.K.Roy
6. Concepts of Toxicology - Omkar
7. Biology of freshwater pollution - C.E.Manson
8. Ecology & Enviroment - P.D. Sharma
9. Water Supply, Waste Disposal & Environmental Engineering - A.K. Chatterjee

PRACTICAL IV

TOXICOLOGY

1. Acute toxicity studies – LC_{50} using Finney's Method
2. Determination of Probit Analysis – Theory
3. Behavioural effect on fish in response to metal toxicity
4. Effect of toxicants on tissues – Histopathology of Liver, Gills and Muscle sections.
5. Determination of biochemical parameter: Protein
6. Determination of biochemical parameter: Glycogen
7. Effect of toxicants on haemoglobin content
8. Effect of toxicants on RBC counts
9. Effect of toxicants on WBC counts
10. Effect of temperature on toxicity
11. Effect of P^H on toxicity
12. Effect of copper on seed germination
13. Effect of cadmium on seed germination
14. Determination of Bioaccumulation on toxicant fishes in different organs.
15. Determination of Bioelimination on toxicant fishes in different organs.

Submission of Slides
Submission of 10 slides showing histopathology of tissues
Spotters – Related to practical