

DEPARTMENT OF ZOOLOGY OF BERHAMPORE GIRLS COLLEGE

Module wise Syllabus distribution of 4th SEM B.Sc. Zoology Hons. (January to June, 2020)

Details about Teachers

Sl No	Name of the Teacher	Designation	Contact No	E mail id
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Details about Non-teaching staff

Sl No	Name of the Staff	Designation	Contact No	Email Id
1	Mithu Hazra	Lab Attendant	9609252150	
2	Rajesh Nabik	Lab Attendant (Casual)	7872114179	

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To be completed before 2nd Internal Examination

Course Code: ZOOL-H-CC-T-08		Course Title: Comparative Anatomy of Vertebrates		
Theory (Total 60 Lectures)				
Unit	Name of teacher	Unit Title	Topics	No of Classes
1	SC	Integumentary System	Structure, function and derivatives of integument in amphibian, birds and mammals.	8
2	DKC	Skeletal System	Jaw suspension; structure of branchial and visceral arches.	7
3	SCC	Digestive System	Comparative anatomy of stomach; dentition in mammals.	8
4	SR	Circulatory System	Comparative account of heart and aortic arches.	7
5	SC	Respiratory System	Respiratory organs in Pisces, Aves and Mammalia.	8

6	DKC	Urinogenital System	Succession of kidney, Types of mammalian uteri.	8
7	SCC	Nervous System	Cranial nerves in mammals.	6
8	SR	Sense Organs	Classification of receptors, Brief account of auditory receptors in vertebrate.	8
Practical (Total 30 Lectures)				
1	DM Gr.A TM Gr.B		Study of placoid, cycloid and ctenoid scales through permanent slides/photographs.	8
2	RH Gr.A SR Gr.B		Study of disarticulated skeleton of Toad/Pigeon/Guineapig.	7
3			Demonstration of Carapace and plastron of turtle.	
4	RH Gr.A SR Gr.B		Identification of mammalian skulls: One herbivorous (Guineapig) and one carnivorous (Dog) animal.	7
5	DM Gr.A TM Gr.B		Dissection of Tilapia/carp: Circulatory system/urino-genital system, Brain/pituitary,	8
Instruction: Either 3 or 4. Lab note book, with labelled diagrams and identifications, with reason				

Course Code: ZOOL-H-CC-T-09		Course Title: Animal Physiology II (Life Sustaining Systems)		
Theory (Total 60 Lectures)				
Unit	Name of teacher	Unit Title	Topics	No of Classes
1	BM	Physiology of Digestion	Structural organisation and functions of Gastrointestinal tract and Associated glands; Mechanical and chemical digestion of food.	8
2	RH	Physiology of Respiration	Mechanism of Respiration, Respiratory volumes and capacities, transport of Oxygen and Carbon dioxide in blood, Dissociation curves and the factors influencing it, respiratory pigments; Carbon monoxide poisoning.	8
3	TM (Topic 1,2) SR (Topic 3,4)	Physiology of Circulation	1.Components of Blood and their functions; Structure and functions of haemoglobin. 2.Haemostasis; Blood clotting system, Fibrinolytic system.	7

			3.Haemopoiesis; Basic steps and its regulation. 4.Blood groups; ABO and Rh factor.	
4	BM	Physiology of Heart	1.Structure of mammalian heart, Coronary Circulation, Origin and conduction of cardiac impulses 2.Cardiac Cycle and cardiac output 3.Blood pressure and its regulation	10
5	TM (Topic 1 and 2) SR (Topic 3 and 4)	Thermoregulation & Osmoregulation	1.Physiological classification based on thermal biology. 2.Thermal biology of endotherms. 3.Osmoregulation in aquatic vertebrates. 4.Extra renalosmoregulatory organs in vertebrates.	5 5
6	RH	Renal Physiology	Structure of Kidney and its functional unit, Mechanism of urine formation, Regulation of acid-base balance.	10
Practical (Total 30 Lectures)				
1	RH Gr.A DKC Gr.B		Enumeration of red blood cells and white blood cells using haemocytometer.	8
2	RH Gr.A DKC Gr.B		Estimation of haemoglobin using Sahli's haemoglobinometer.	7
3	BM Gr A SCC Gr B		Preparation of haemin/haemochromogen crystals from mammal/fish blood	7
4	BM Gr A SCC Gr B		Recording of blood pressure using a sphygmomanometer	8

Course Code: ZOOL-H-CC-T-10			Course Title: Immunology	
Theory (Total 60 Lectures)				
Unit	Name of teacher	Unit Title	Topics	No of Classes
1	BM	Overview of Immune System	Basic concepts of health and diseases, Cells and organs of the Immune system.	6
2	RH	Innate and Adaptive Immunity	Anatomical barriers, Inflammation, Cell and molecules involved in innate immunity, Adaptive immunity (Cell mediated and humoral).	6
3	SC	Antigens	Antigenicity and immunogenicity, Immunogens, Adjuvants and haptens, Factors influencing immunogenicity.	6
4		Immunoglobulins	Structure and functions of different classes of	6

	DM		immunoglobulins, Antigen-antibody interactions, Immunoassays (ELISA and RIA), Hybridoma technology, Monoclonal antibody production.	
5	RH	Major Histocompatibility Complex	Structure and functions of MHC molecules. Structure of T cell Receptor and its signaling.	6
6	BM	Cytokines	Types, properties and functions of cytokines.	5
7	BM	Complement System	Components and pathways of complement activation.	5
8	RH	Hypersensitivity	Gell and Coombs' classification and brief description of various types of hypersensitivities.	6
9	DM	Immunology of diseases	Malaria, Filariasis, Dengue.	6
10	SC	Vaccines	Various types of vaccines. Active & passive immunization (Artificial and natural).	8
Practical (Total 30 Lectures)				
1	BM Gr A SMC GrB		Demonstration/virtual lab/dry lab of lymphoid organs.	8
2	RH Gr A SR Gr B		Determination of ABO Blood group	4
3	RH Gr A SR Gr B		Histological study of spleen, thymus and lymph nodes through slides/ photographs	6
4	RH Gr A SR Gr B		Preparation of stained blood film to study various types of blood cells	4
5	BM Gr A SMC GrB		Demonstration/virtual lab/dry lab of ELISA	8

Course Code: ZOOL-H-SEC-02			Course Title: Sericulture	
Theory (Total 30 lectures)				
Unit	Name of teacher	Unit Title	Topics	No of Classes
1	DKC	Introduction	Types of silkworms, Distribution and Races. Exotic and indigenous races. Mulberry and non-mulberry Sericulture.	4
2	DKC	Biology of Silkworm	Life cycle of <i>Bombyx mori</i> . Structure of silk gland and secretion of silk.	4
3		Rearing of	Rearing house and rearing appliances. Disinfectants: Formalin, bleaching powder.	

	BM	Silkworms	Silkworm rearing technology: Early age and Late age rearing. Types of mountages. Spinning, harvesting and storage of cocoons.	7
4	DKC	Pests and Diseases	Pests of silkworm: Uzi fly, dermestid beetles and vertebrates. Pathogenesis of silkworm diseases: Protozoan, viral, fungal and bacterial. Control and prevention of pests and diseases.	8
Field Visit				
5	BM	Entrepreneurship in Sericulture	Report on a visit to a sericulture center.	7