

TEACHING PLAN
Academic Session 2019-2020
Under CBCS System
Semester 1(July-December)
CC – 1
CORE COURSE 1. Non-Chordates I

ZOOA-CC1-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Basics of Animal Classification	SP		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Protista and Metazoa	SB		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Porifera	GH		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Cnidaria	GH		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Ctenophora	GH		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Platyhelminthes	SB		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Nematoda	SB		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Non-Chordates I Lab; ZOOA-CC-1-1-P	Teacher	Class Hour	Teaching Method
Study of whole mount of Euglena, Amoeba and Paramoecium	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification with reason & Systematic position of Amoeba, Euglena, Entamoeba, Paramecium, Plasmodium, Balantidium, Vorticella (from the prepared slides)	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification with reason & Systematic position of Sycon, Poterion (Neptune's Cup), Obelia, Physalia, Aurelia, Gorgonia, Metridium, Pennatula, Madrepora, Fasciola hepatica, Taenia solium and Ascaris lumbricoides.	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Staining/mounting of any protozoa/ helminth from gut of Periplaneta sp.	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos

Total Marks -30

CC – 2
CORE COURSE 2: Molecular Biology

ZOOA-CC1-2-TH	Teacher	Class Hour	Teaching Method
Unit 1: Nucleic Acids	SK	3	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: DNA Replication	SK	9	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Transcription	DG	9	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Translation	DG	9	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Post Transcriptional Modifications and Processing of Eukaryotic RNA	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Gene Regulation	SK	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: DNA Repair Mechanisms	SK	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Molecular Techniques	SK	3	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Molecular Biology Lab; ZOOA-CC-1-2-P	Teacher	Class Hour	Teaching Method
Demonstration of polytene and lampbrush chromosome from photograph	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Isolation and quantification of genomic DNA from goat liver	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Agarose gel electrophoresis for DNA.	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Histological staining of DNA and RNA in prepared slides	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos

CBCS System
Semester 2(January-June)
CC – 3
CORE COURSE 3: Non-Chordates II – Coelomates

ZOOA-CC-2-3-TH	Teacher	Class Hour	Teaching Method	
Unit 1: Introduction	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Unit 2: Annelida	SB	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Unit 3: Arthropoda	GH	16	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Unit 4: Onychophora	SB	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Unit 5: Mollusca	SP	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Unit 6: Echinodermata	SB	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Unit 7: Hemichordata	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test	
Total Marks -50				
Non-Chordates II Lab, ZOOA-CC-2-3-P	Teacher	Class Hour	Domain	Teaching Method
Study of following specimens:Annelids - Aphrodite, Nereis, Chaetopterus, Earthworm, Hirudinaria	SB	10		Practical demonstration with hands on activity, powerpoint presentation and videos
Study of following specimens:Arthropods - Limulus, Palaemon, Balanus, Eupagurus, Scolopendra, Peripatus, Silkworm – life history stages, Termite – members of a colony and Honey bee – members of the colony	SB	10		Practical demonstration with hands on activity, powerpoint presentation and videos
Study of following specimens:Molluscs - Dentalium, Patella, Chiton, Pila, Achatina, Pinctada, Sepia, Octopus, Nautilus	SB	10		Practical demonstration with hands on activity, powerpoint presentation and videos

Study of following specimens: Echinoderms - Asterias, Ophiura, Clypeaster, Echinus, Cucumaria and Antedon	SB	10		Practical demonstration with hands on activity, powerpoint presentation and videos
Anatomy study: Nervous system, Reproductive system (Male & female), Mouth parts & Salivary apparatus in Periplaneta sp.	SP	10		Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30				

CC-4 (Semester 2)

CORE COURSE 4: Cell Biology

ZOOA-CC2-4-TH	Teacher	Class Hour	Teaching Method
Unit 1: Plasma Membrane	DG	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Cytoplasmic organelles I	SB	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Cytoplasmic organelles II	DG	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Cytoskeleton	GH	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Nucleus	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Cell Cycle	SK	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Cell Signalling	SK	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Cell Biology Lab; ZOOA-CC-2-4-P	Teacher	Class Hour	Teaching Method
Preparation of temporary stained squash of onion/arum root tip to study various stages of mitosis	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos

Study of various stages of meiosis from grasshopper testis	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells.	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Preparation of permanent slide to demonstrate: a. DNA by Feulgen reaction b. Cell viability study by Trypan Blue staining	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-5 (Semester 3)

CORE COURSE 5: Chordata

ZOOA-CC3-5-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Chordates	SB	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Protochordata	SB	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Agnatha	SB	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Pisces	SB	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Amphibia	SB	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Reptilia	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Aves	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Mammals	DG	9	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			

Chordata Lab; ZOOA-CC-3-5-P	Teacher	Class Hour	Teaching Method
Identification with Reasons a) Protochordata: Balanoglossus, Branchiostoma b) Agnatha: Petromyzon c) Fishes: Scoliodon, Sphyrna, Pristis, Torpedo, Mystus, Heteropneustes, Labeo rohita, Exocoetus, Hippocampus, Anabas, Flat fish d) Amphibia: Necturus, Bufo (Duttaphrynus) melanostictus, Rana (Hoplobatrachus) tigerinus, Hyla, Tylotriton, Axolotl larva e) Reptilia: Chelone, Trionyx, Varanus, Hemidactylus, Calotes, Chamaeleon, Draco, Vipera, Naja, Hydrophis, f) Mammalia: Bat (Insectivorous and Frugivorous), Funambulus (Indian Palm squirrel)	SB	30	Practical demonstration with hands on activity, powerpoint presentation and videos
Dissection of brain and pituitary – ex situ, digestive and Urino-genital system of Tilapia	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Pecten from Fowl head	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Power point presentation on study of habit, habitat or behaviour of any one animal by student – for internal assessment only	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-6 (Semester 3)

CORE COURSE 6: Animal Physiology: Controlling and Co-ordinating System

ZOOA-CC3-6-TH	Teacher	Class Hour	Teaching Method
Unit 1: Tissues	SP	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Bone and Cartilage	SP	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Nervous System	SK	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test

Unit 4: Muscular system	SK	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Reproductive System	SK	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Endocrine System	SP	16	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Animal Physiology: Controlling & Coordinating Systems, Lab; ZOOA-CC3-6-P	Teacher	Class Hour	Teaching Method
Recording of cardiac and simple muscle twitch with electrical stimulation	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres and nerve cells	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of permanent slides of Mammalian Skin, Spinal cord, Pancreas, Testis, Ovary, Adrenal, Lung, pyloric stomach, cardiac stomach, Thyroid, small intestine and large intestine of mammal (white rat)	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Microtomy: Preparation of permanent slide of any five mammalian (Goat/white rat) tissues	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-7 (Semester 3)
CORE COURSE 7: Fundamentals of Biochemistry

ZOOA-CC3-7-TH	Teacher	Class Hour	Teaching Method
Unit 1: Carbohydrates	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Lipids	GH	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Proteins	GH	10	Lecture method using books, powerpoint presentation, videos,

			group discussion and class test
Unit 4: Nucleic Acids	DG	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Enzymes	DG	13	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Oxidative Phosphorylation	DG	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Fundamentals of Biochemistry Lab; ZOOA-CC-7-3-P	Teacher	Class Hour	Teaching Method
Qualitative tests for carbohydrates, proteins and lipids	GH	30	Practical demonstration with hands on activity, powerpoint presentation and videos
Qualitative estimation of Urea & Uric acid	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Paper chromatography of amino acids	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Quantitative estimation of water soluble proteins following Lowry Method	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-8 (Semester 4)

CORE COURSE 8.Comparative Anatomy of Vertebrates

ZOOA-CC4-8-TH	Teacher	Class Hour	Teaching Method
Unit 1: Integumentary System	SK	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Digestive System	SK	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Respiratory System	SK	6	Lecture method using books, powerpoint presentation, videos,

			group discussion and class test
Unit 4: Circulatory System	SK	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Urinogenital System	SP	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Nervous system and sense organs	SP	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Skeletal system	SP	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Comparative Anatomy of Vertebrates Lab; ZOOA-CC4-8-P	Teacher	Class Hour	Teaching Method
Study of placoid, cycloid and ctenoid scales through permanent slides/photographs	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of disarticulated skeleton of toad, Pigeon, Guineapig (limb bones, vertebrae, limb and girdle)	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Comparative study of heart and brain, with the help of model/picture	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of skulls: Pigeon, one herbivore (Guineapig) and one carnivore (Dog) animal	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-9 (Semester 4)

CORE COURSE 9: Animal Physiology: Life Sustaining Systems

ZOOA-CC4-9-TH	Teacher	Class Hour	Teaching Method
Unit 1: Physiology of Digestion	DG	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Physiology of Respiration	DG	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test

Unit 3: Physiology of Circulation	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Physiology of Heart	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Thermoregulation & Osmoregulation	GH	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Renal Physiology	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Animal Physiology: Life Sustaining Systems Lab; ZOOA-CC4-9-P	Teacher	Class Hour	Teaching Method
Determination of ABO Blood group	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Estimation of haemoglobin using Sahli's haemoglobin meter	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of blood cells from human blood	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Preparation of haemin crystals and haemochromogen crystals	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of blood cells from cockroach haemolymph	GH	5	Practical demonstration with hands on activity, powerpoint presentation and videos
Demonstration of blood pressure by digital meter	GH	5	Practical demonstration with hands on activity, powerpoint presentation and videos

CC-10 (Semester 4)
CORE COURSE 10: Immunology

ZOOA-CC4-10-TH	Teacher	Class Hour	Teaching Method
Unit 1: Overview of Immune System	SB	3	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Innate and Adaptive Immunity	SB	9	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Antigens	SB	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Immunoglobulins	SB	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Major Histocompatibility Complex	SB	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Cytokines	DG	3	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Complement System	DG	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Hypersensitivity	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 9: Vaccines	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Immunology Lab; ZOOA-CC4-10-P	Teacher	Class Hour	Teaching Method
Demonstration of lymphoid organs (by picture)	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Histological study of Bursa fabricius, spleen, thymus and lymph nodes through slides/photographs	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Demonstration of ELISA	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-11 (Semester 5)
CORE COURSE 11.Ecology

ZOOA-CC5-11-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Ecology	SP	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Population	SB	20	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Community	SP	11	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Ecosystem	SP	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Applied Ecology	SP	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Ecology Lab, ZOOA-CC5-11-P	Teacher	Class Hour	Teaching Method
Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, salinity, determination of pH, and Dissolved Oxygen content (Winkler's method) Chemical Oxygen Demand and free CO₂	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Report on a visit to National Park/Biodiversity Park/Wild life sanctuary/ any place of ecological interest/ ecological uniqueness/ Zoological garden	SB	30	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-12 (Semester 5)
CORE COURSE 12.Principle of Genetics

ZOOA-CC5-12-TH	Teacher	Class Hour	Teaching Method
Unit 1: Mendelian Genetics and its Extension	SK	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Linkage, Crossing Over and Linkage Mapping	SK	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Mutations	SK	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Sex Determination	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Extra-chromosomal Inheritance	DG	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Genetic Fine Structure	DG	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Transposable Genetic Elements	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Principles of Genetics Lab, ZooA-CC5-12-P	Teacher	Class Hour	Teaching Method
Chi-square analyses for genetic ratio test	GH	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of chromosomal aberration in Drosophila and man from photograph	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Pedigree analysis of some inherited traits in animals	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-13 (Semester 6)
CORE COURSE 13: Developmental Biology

ZOOA-CC6-13-TH	Teacher	Class Hour	Teaching Method
Unit 1: Early Embryonic Development	SB	20	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Late Embryonic Development	SB	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Post Embryonic Development	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Implications of Developmental Biology	GH	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Developmental Biology Lab; ZOOA-ZooA-CC6-13-P	Teacher	Class Hour	Teaching Method
Study of whole mounts of developmental stages of chick embryo through permanent slides: 24, 48, and 96 hours of incubation	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of the developmental stages and life cycle of Drosophila	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of different sections of placenta (photomicrograph/ slides)	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of Invertebrate larva through slides/ photographs of Phylum Annelida, Arthropoda, Mollusca and Echinodermata	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC-14 (Semester 6)
CORE COURSE 14.Evolutionary Biology

ZOOA-CC6-14-TH	Teacher	Class Hour	Domain	Teaching Method
Unit 1: Origin of Life (Chemical basis), RNA world hypothesis	SK	5		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Historical review of Evolutionary concepts: Lamarkism, Darwinism and Neo Darwinism	SK	5		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Geological time scale, Fossil: types and age determination by Carbon dating, Evolution of horse	GH	6		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Natural Selection: Modes with Examples	GH	6		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Species concept, Isolating mechanisms, modes of speciation; Speciation by chromosome rearrangement in Drosophila. Adaptive radiation/macroevolution (exemplified by Galapagos finches).	SK	10		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Origin and Evolution of Man, Unique Hominid characteristics contrasted with primate characteristic	GH	2		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Population genetics: Hardy-Weinberg Law; factors disrupting H-W equilibrium (Genetic Drift, Migration and Mutation and Selection in changing allele frequencies (only derivations required). Simple problems related to estimation of allelic and gene frequencies	SK	10		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Extinction, back ground and mass extinctions, detailed example of K-T extinction	GH	3		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 9: Phylogenetic trees, construction and interpretation of Phylogenetic tree using parsimony, convergent and divergent evolution.	GH	5		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50				

Evolutionary Biology Lab, ZooA-CC6-14-P	Teacher	Class Hour	Teaching Method
Study of fossils from models/ pictures: Dickinsonia, Paradoxides (Trilobita), Asteroceras (Ammonoid), Pentremites (Blastoid Echinoderm), Ichthyosaur, Archaeopteryx, Cynodont.	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of homology and analogy from suitable specimens.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Phylogenetic trees, Construction & interpretation of Phylogenetic tree using parsimony, Construction of dendrogram following principles of phenetics & cladistics from a data table	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

DSE-1 (Semester 5)

DSE1. Parasitology

ZOOA-DSE(A)-5-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Parasitology	SB	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Parasitic Protists	SB	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Parasitic Platyhelminthes	SB	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Parasitic Nematodes	SB	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Parasitic Arthropods	DG	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Parasite Vertebrates	DG	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			

Parasitology Lab, ZOOA-DSE(A)-5-1-P	Teacher	Class Hour	Teaching Method
Study of life stages of Giardia intestinalis, Trypanosoma gambiense, Leishmania donovani, Plasmodium vivax, Plasmodium falciparum through permanent slides/micro photographs	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of adult and life stages of Schistosoma haematobium, Taenia solium through permanent slides/micro photographs	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of adult and life stages of Ancylostoma duodenale through permanent slides/micro photographs	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of monogenea from the gills of fresh/marine fish [Gills can be procured from fish market as by product of the industry]	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of nematode/cestode parasites from the intestines of Poultry bird [Intestine can be procured from poultry/market as a by-product] & Goat	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Submission of a brief report on parasitic vertebrates	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

DSE-1 (Semester 5)
DSE1. Endocrinology

ZOOA-DSE(B)-5-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Endocrinology	GH	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Hypothalamo-Hypophyseal Axis	GH	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Peripheral Endocrine Glands	SK	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Regulation of Hormone Action	SK	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5. Non Mammalian Vertebrate Hormone	GH	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			

Endocrinology Lab, ZOOA-DSE(B)-5-1-P	Teacher	Class Hour	Teaching Method
Dissect and display of Endocrine glands in laboratory bred rat.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of the permanent slides of all the endocrine glands	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Tissue fixation, embedding in paraffin, microtomy and slide preparation of any endocrine gland	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
H-E staining of Histological slides.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

DSE-2 (Semester 6)
DSE2. Animal Biotechnology

ZOOA-DSE(A)-6-2-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction	SK	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Molecular Techniques in Gene manipulation	SK	23	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Genetically Modified Organisms	DG	12	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Culture Techniques and Applications	DG	10	Theore Lecture method using books, powerpoint presentation, videos, group discussion and class test tical
Total Marks -50			
Animal Biotechnology Lab, ZOOA-DSE(A)-6-2-P	Teacher	Class Hour	Teaching Method
Genomic DNA isolation from E. coli and Plasmid DNA isolation (pUC 18/19) from E. coli	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
To study following techniques through photographs - Southern Blotting, Northern Blotting, Western Blotting, PCR, DNA fingerprinting	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Project report on animal cloning & Application & ethical Issues	DG	30	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

Semester 6
DSE2. Fish and Fisheries
ZOOA-DSE(B)-6-2-TH

ZOOA-DSE(B)-6-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction and Classification	SB	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Morphology and Physiology	SP	14	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Fisheries	SP	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Aquaculture	SB	16	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Fish in research	SB	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Fish and Fisheries Lab, ZOOA-DSE(B)-6-2-P	Teacher	Class Hour	Teaching Method
1. Morphometric and meristic characters of fishes	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
2. Identification of <i>Petromyzon</i>, <i>Myxine</i>, <i>Pristis</i>, <i>Exocoetus</i>, <i>Hippocampus</i>, <i>Gambusia</i>, <i>Labeo</i>, <i>Heteropneustes</i>, <i>Anabas</i>	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
3. Study of different types of scales (through permanent slides/ photographs).	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
4. Study of crafts and gears used in Fisheries (Photographs)	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
5. Water quality criteria for Aquaculture: Assessment of pH, alkalinity, Salinity.	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
6. Study of air breathing organs in <i>Channa</i>, <i>Heteropneustes</i>, <i>Anabas</i> and <i>Clarias</i>	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
7. Project Report on a visit to any fish farm/ pisciculture unit/Zebrafish rearing Lab.	SP		Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

SEC-1 (Semester 3)
SEC-1 Apiculture

ZOOA-SEC(A)-3-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Biology of Bees	SK	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Rearing of Bees	GH	14	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Diseases and Enemies	SK	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Bee Economy	SK	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Entrepreneurship in Apiculture	GH	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -80			

SEC-1 (Semester 4)

SEC-1.Aquarium Fish Keeping

ZOOA-SEC(B)-4-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Aquarium Fish Keeping	GH	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Biology of Aquarium Fishes	SK	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Food and feeding of Aquarium fishes	SK	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Fish Transportation	GH	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Maintenance of Aquarium	SK	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -80			

TEACHING PLAN (Zoology General)
Academic Session 2022-2023
Under CBCS System
Semester 1(July-December)
CC – 1
CORE COURSE 1. Animal Diversity

ZOOG-CC1-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Kingdom Protista	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Phylum Porifera	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Phylum Cnidaria	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Phylum Platyhelminthes	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Phylum Nematelminthes	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Phylum Annelida	SP	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Phylum Arthropoda	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Phylum Mollusca	DG	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 9: Phylum Echinodermata	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 10: Protochordates	SK	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 11: Agnatha	SK	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 12: Pisces	SK	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test

Unit 13: Amphibia	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 14: Reptiles	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 15: Aves	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 17: Mammals	SK	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			

Animal Diversity, ZOOG-CC1-1-P

Animal Diversity, ZOOG-CC1-1-P	Teacher	Class Hour	Teaching Method
Identification with reasons of the following specimens:- Amoeba, Euglena, Paramecium, Sycon, Obelia, Aurelia, Metridium, Taenia solium, Ascaris lumbricoides (Male and female), Aphrodite, Nereis, Hirudinaria, Palaemon, Cancer, Limulus, Apis, Chiton, Dentalium, Unio, Sepia, Octopus, Echinus, Cucumaria and Antedon, Balanoglossus, Torpedo, Branchiostoma, Petromyzon, Labeo rohita, Exocoetus, Salamandra, Hyla, Chelone, Hemidactylus, Chamaeleon, Draco, Vipera, Naja, Bat, Funambulus	DG	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Key for Identification of poisonous and non-poisonous snakes	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of anatomy of digestive system, salivary gland, mouth parts of Periplaneta, Study of reproductive system of female cockroach	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC – 2(Semester-2)
CORE COURSE 2.Comparative Anatomy & Developmental Biology

ZOOG-CC2-2-TH	Teacher	Class Hour	Teaching Method
Unit 1: Integumentary System	SP	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Digestive System	SK	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Respiratory System	SK	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Circulatory System	SK	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Urino-genital System	SP	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Early Embryonic Development	SP	14	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Late Embryonic Development	SP	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Comparative Anatomy & Developmental Biology Lab, ZOOG-CC2-2-P	Teacher	Class Hour	Teaching Method
Osteology: Limb bones, girdle and vertebra of Pigeon & Guineapig, Mammalian skulls: One herbivorous; Guinea pig and one carnivorous; Dog.	SP	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Larval stages: Veliger, Nauplius, Trochophore, Mysis	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of the different types of placenta-histological sections through photomicrographs	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Developmental stages of chick embryo: 24 Hrs., 48 Hrs, 72 Hrs., 96 Hrs.	DG	10	
Total Marks -30			

CORE COURSE 3. PHYSIOLOGY AND BIOCHEMISTRY

ZOOG-CC3-3-TH	Teacher	Class Hour	Teaching Method
Unit 1: Nerve and muscle	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Digestion	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Respiration	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Cardio-vascular system	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Excretion	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Reproduction and Endocrine Glands	GH	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Carbohydrate Metabolism	GH	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Lipid metabolism	GH		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 9: Protein Metabolism	GH	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 10. Enzyme	GH	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
PHYSIOLOGY AND BIOCHEMISTRY Lab; ZOOG-CC3-3-P	Teacher	Class Hour	Teaching Method
Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of permanent histological sections of mammalian duodenum, liver, lung, kidney.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Qualitative test for carbohydrate samples	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

CC – 4(Semester-4)
CORE-COURSE 4.Genetics & Evolutionary Biology

ZOOG-CC4-4-TH	Teacher	Class Hour	Teaching Method
Unit 1:Mendelian Genetics and its Extension	DG	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Linkage, Crossing Over	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Mutation	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Sex determination	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Origin of Life	GH	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Evolutionary Theories	GH	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 7: Process of Evolutionary changes	GH	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Speciation	GH	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Genetics and Evolutionary Biology Lab ZOOG-CC4-4-P	Teacher	Class Hour	Teaching Method
Verification of Mendelian Ratio using Chi square test.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of Human Aneuploidy using photo graph of karyotype.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Phylogeny of horse with diagram of limb and skull.	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study and identification of Darwin Finches from photographs	GH	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Visit to natural history museum and submission of report.	SB	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

Discipline specific courses
Semester-5
DSE-A
Applied Zoology.ZOOG-DSE-A-5-1-TH

Applied Zoology.ZOOG-DSE-A-5-1-TH	Teacher	Class Hour	Teaching Method
Unit I: Host & Parasite Relationship	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Epidemiology of Diseases	SP	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Parasitic Protozoa	SP	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Parasitic Helminthes	SP	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Insect of Economic Importance	SP	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Insect of Medical Importance	DG	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Animal Husbandry	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 9: Poultry Farming	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 10: Fish Technology	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Applied Zoology. ZOOG-DSE-A-5-1-P	Teacher	Class Hour	Teaching Method
Study of Plasmodium vivax, Entamoeba histolytica, Trypanosoma gambiense, Ancylostoma-duodenale and Wuchereria bancrofti and their life stages through permanent-slides/photomicrographs or specimens	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of arthropod vectors associated with human diseases: Pediculus, Culex, Anopheles, Aedes	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of insect damage to different plant parts/stored grains through damaged products/photographs	SP	10	Practical demonstration with hands on activity, powerpoint presentation

			and videos
Identifying feature and economic importance of <i>Helicoverpa</i>; <i>Heliothis armigera</i>, <i>Papilio demoleus</i>, <i>Pyrilla perpusilla</i>, <i>Callosobruchus chinensis</i>, <i>Sitophilus oryzae</i> and <i>Tribolium castaneum</i>	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Visit to poultry farm or animal breeding centre. Submission of visit report	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Maintenance of freshwater aquarium(demonstration only)	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

Semester-6

DSE-B

Ecology& Wild life Biology;ZOOG-DSE-B-6-2-TH

Ecology& Wild life Biology;ZOOG-DSE-B-6-2-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Ecology	SP	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Population	DG	20	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Community	DG	11	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Ecosystem	SP	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Wild Life	SP	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -50			
Ecology& Wild life Biology;ZOOG-DSE-B-6-2-P	Teacher	Class Hour	Teaching Method
Identification of flora, mammalian fauna, avian fauna	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of Cameras and lenses)	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos

Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers, etc.	DG	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, salinity, determination of pH, and Dissolved Oxygen content (Winkler's method), Chemical Oxygen Demand and free CO₂	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -30			

Skill Enhancement Elective Courses (SEC)
SEMESTER –3
SEC-A
APICULTURE; ZOOG-SEC-A-3-1-TH

APICULTURE; ZOOG-SEC-A-3-1-TH	Teacher	Class Hour	Teaching Method
Unit 1: Biology of Bees	GH	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Rearing of Bees	GH	14	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Diseases and Enemies	GH	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Bee Economy	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Entrepreneurship in Apiculture	SP	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -80			

SEMESTER – 4
SEC-B
AQUARIUM FISH KEEPING; ZOOG-SEC-B-4-2-TH

AQUARIUM FISH KEEPING; ZOOG-SEC-B-4-2-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction to Aquarium Fish Keeping	GH	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Biology of Aquarium Fishes	SB	10	Lecture method using books,

			powerpoint presentation, videos, group discussion and class test
Unit 3: Food and feeding of Aquarium fishes	SB		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Fish Transportation	SP		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Maintenance of Aquarium	SB		Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -80			

SEMESTER –5

SEC-A

Sericulture; ZOOG-SEC-A-5-3-TH

Sericulture; ZOOG-SEC-A-5-3-TH	Teacher	Class Hour	Teaching Method
Unit 1: Introduction	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Biology of Silkworm	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Rearing of Silkworms	DG	10	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Pests and Diseases	SP	7	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Entrepreneurship in Sericulture	SP	3	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -80			

SEMESTER –6
SEC-B
Medical diagnosis; ZOOG-SEC-B-6-4-TH

Medical diagnosis; ZOOG-SEC-B-6-4-TH	Teacher	Class Hour	Teaching Method
Unit 1: Diagnostics Methods Used for Analysis of Blood	DG	8	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 2: Diagnostic Methods Used for Urine Analysis	DG	4	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 3: Non-infectious Diseases	DG	6	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 4: Infectious Diseases	RM	3	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 5: Clinical Biochemistry	DG	1	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 6: Clinical Microbiology	SP	1	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 8: Tumours	SP	2	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Unit 9: Visit to Pathological Laboratory and Submission of Project	DG	5	Lecture method using books, powerpoint presentation, videos, group discussion and class test
Total Marks -80			

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