

LECTURE PLAN

DEPARTMENT OF ZOOLOGY

NAME: Dr. K.K. Pandey

DESIGNATION: ASST. PROF.

COURSE: B.S.c SEMISTER I

SESSION: 2018-2021

PAPER NAME: SYSTEMATICS AND DIVERSITY OF NONCHORDATE

PAPER NO: CORE -I

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1 Systematics Binomial & Trinomial nomenclature, Species and Species concept	15
02.	UNIT-2 Non-Chordates: Characters & Classification General characters and classification of different phyla of Non Chordates up to classes with examples showing distinctive / adaptive features	15
03.	UNIT-3 Non Chordata : Protists to Pseudocolmates Phylum Protozoa: General account of locomotion and reproduction Phyla Porifera: Canal system in Porifera Coelenterate,: Obelia Life cycle and metagenesis, Coral Reefs –types, formation and distribution Platyhelminthes & Aschelminthes : Parasitic Adaptation	15
04.	UNIT-4 Non Chordate: Coelomates Annelida: Segmental organs (Coelomo-ducts & meta-nephridia) in annelid Arthropoda: Larval form of Crustacea Mollusca: Respiration in Pila, Torsion and Detorsion in Gastropods Echinoderm: Water vascular System in Asterias	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER I

SESSION: 2018-2021

PAPER NAME: Principle of Ecology

PAPER NO: Core -II

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT- 1. General concepts Components of ecosystem Energy flow in ecosystem food chain and food web, Food Pyramid Bio- Geochemical cycle Water Cycle Gaseous Cycles- Carbon and Nitrogen Sedimentary Cycle- Phosphorous and sulphur	15
02.	UNIT - 2. Population and communities Population characteristics: Density, Natality, Mortality, Age pyramid and growth curve Ecological succession and concept of climax	15
03.	UNIT- 3. Pollution Sources and impact of environmental pollutants- air & water Global environmental changes- green house gases and their effects Acid rains	15
04.	Natural resources Soil & water and their conservation Biodiversity- benefits, hotspots, threats and conservation Renewable and Non Renewable Source of Energy	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER II

SESSION: 2018-2021

PAPER NAME: Cell Biology

PAPER NO: CORE-III

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	The Cell and its Organization Methods in cell biology: Elementary idea of microscopy (Light, Electron) Structure and function of plasma membrane and cell junctions Introduction to cell organelle: Endoplasmic reticulum, Golgi complex, Lysosome Ribosomes & Mitochondria Nucleus Nuclear envelope Chromosome: Structure & function Introduction to polytene and lampbrush chromosomes	40
02.	Cell Division Basic feature of Cell cycle Mitosis & Meiosis and their significance Elementary idea of Apoptosis & Necrosis	20
	Total Lecture=	60

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COURSE: B.S.c SEMISTER II

SESSION: 2018-2021

PAPER NAME: DIVERSITY OF CHORDATE -

PAPER NO: Core-IV

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1. Protochordates General characters and Affinities of Amphioxus Retrogressive metamorphosis in Herdmania	15
02.	UNIT-2 Chordates: General characters and classification of the following up to order with examples Amphibians Reptiles Mammals	15
03.	UNIT- 3. Fish & Amphibians Difference between cartilaginous & bony fishes Accessory Respiratory organ in fishes Pedogenesis and neoteny with special reference to Axolotl larvae Origin and evolution of Amphibia	15
04.	UNIT-4. Reptiles, Birds & Mammals Poisonous & Non-poisonous Snakes of India, Poison's Apparatus and biting Mechanisms Flight Adaptation Structure and Affinities of Prototheria & Metatheria	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER III

SESSION: 2018-2021

PAPER NAME: Mammalian Physiology

PAPER NO: Core-V

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT 1. Digestion 1.1 : Digestion and absorption of carbohydrates, proteins and fats UNIT-2. Respiration and Circulation Mechanism and regulation of breathing Transport of oxygen and carbon dioxide Composition of blood and lymph Blood groups and Blood clotting	30
02.	UNIT3. Renal & Reproductive Physiology Histo-Physiology of Kidney Histo-Physiology of Testes Histo-Physiology of ovary Menstrual cycle in human	15
03.	UNIT-4. Nerve physiology Propagation of nerve impulse in Myelinated and non- myelinated nerve fibers Synapse & Synaptic Transmission	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER III

SESSION: 2018-2021

PAPER NAME: Biochemistry

PAPER NO: Core-VI

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1. Biomolecules Amino acids : Properties, Structure and classification Proteins : Classification, Structural organisation & conformation Carbohydrates: Structure, Classification & biological significance Lipids: Structure, Classification & biological significance	15
02.	UNIT-2. Enzymes General properties Major classes of enzymes Mechanism of enzyme action	15
03.	UNIT-3. Nucleic acids DNA structure: DNA double helix (Watson and Crick model) Types of RNA: m RNA, t RNA & r RNA	15
04.	UNIT-4. Metabolic path way Glycolysis kreb's cycle Beta oxidation	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER III

SESSION: 2018-2021

PAPER NAME: Endocrinology

PAPER NO: Core7

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1. Classification of chemical messengers Hormones and its classification General mechanism of hormone action	25
02.	UNIT -2 Structures and functions of endocrine organs Pituitary Thyroid Adrenal Endocrine pancreas	25
03.	UNIT-3. Gastrointestinal hormones (gastrin, CCK & secretin	10
	Total Lecture=	60

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COURSE: B.S.c SEMISTER III

SESSION: 2018-2021

PAPER NAME: Genetics

PAPER NO: Core8

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1. Elements of heredity and variation Mendel and his experiments Principles of segregation and independent assortment and their chromosomal basis	15
02.	UNIT-2. Extension of Mendelism Dominance relationships (Complete dominance incomplete dominance and co- dominance) multiple allelism Lethal alleles Pleiotropy Epistasis Polygenic inheritance Linkage and crossing over Sex- linked inheritance	20
03.	UNIT-3 Sex Determination 3.1 sex chromosomes and basis of sex determination : XX/XO, XX/XY, ZZ/ZW	15
04.	UNIT-4. Mutation 4.1 Structural and numerical alterations of chromosomes and related disorder	10
	Total Lecture=	60

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COURSE: B.S.c SEMISTER III

SESSION: 2018-2021

PAPER NAME: Evolution

PAPER NO: Core9

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	History & Evidence of Evolution Types of Fossil Dating of fossil Phylogeny of Horse Chronological order of fossils of man UNIT -2 Introduction to source of evolution & evolutionary Theories Lamarkism Dawarnism Neo Darwinism	15
02.	. 2.4. Source of Variation: Mutation & Recombination 2.5 Isolation and its role in evolution	15
03.	UNIT-3 . Population Genetics Hardy Weinberg Law of Equilibrium Genetic Drift Founder effect Bottle Neck Effect	15
04.	UNIT-4 Level of Evolution Micro- evolution Macro-evolution Mega- Evolution	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER IV

SESSION: 2018-2021

PAPER NAME: Animal Behaviour

PAPER NO: Core10

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	1. Concepts and pattern of Behaviour Innate /Instinct Behaviour Acquired/ learned behavior	20
02.	2. Social organisation Social organization in honey bee and Termites Communication in animals (Chemical , Audio & Visual)	20
03.	UNIT-4 Miscellaneous . 4.1 Migration in Fishes and Birds Biological Rhythms Parental Care in fishes and Amphibia	20
	Total Lecture=	60

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COURSE: B.S.c SEMISTER V

SESSION: 2018-2021

PAPER NAME: Immunology

PAPER NO: Core11

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	1 . Types of Immunity: Innate and acquired	15
02.	2. Cell and organs of immune system Types of immune cells Immunology Group A Primary and secondary lymphoid organs	15
03.	3. Humoral immunity Antigen Immunoglobulins: types, structure and function Complement System	15
04.	4. Cell mediated immunity Structural organization of MHC complex Antigen processing and presentation Monoclonal Antibody	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER V

SESSION: 2018-2021

PAPER NAME: Developmental Biology

PAPER NO: Core12

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	1 Early embryonic development Spermatogenesis Oogenesis 1.4 Pre fertilization Events: Attraction of gamets, Fertilizin – Antifertilizin Interaction, capacitation , Acrosomal Reaction , Amphimixis Types of cleavage Role of yolk in cleavage construction of fate map	15
02.	2 Late embryonic Development 2.1. Extra embryonic membranes in chick 2.2 Placenta: Structure, Type and function	15
03.	3 Post Embryonic Development Metamorphosis in Insect 3.3 Regeneration	15
04.	4 Embryo transfer technology In Vitro fertilization Embryo transfer technology	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER V

SESSION: 2018-2021

PAPER NAME: Economic Zoology

PAPER NO: DSE-I

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	Unit 1: Bee-keeping and Bee Economy (Apiculture) Varieties of honey bees in India Setting up an apiary Rearing equipments Diseases of honey bee and their management Beneficial products of honey bee;	20
02.	Unit 2: Silk and Silk Production (Sericulture) Different types of silk and silkworms in India; Host plants & Rearing of Bombyx mori – Silkworm diseases: Pebrine, Flacherie, Muscardine and their management; Silkworm pests and parasites: Uzi fly and their management;	20
03.	Species of Lac Insect (taxonomy & Identification) Host Plants, Methods of Rearing /Cultivation and crops of lac in Jharkhand 3.3 Enemies of Lac insect 3.4 Economic Importance of Lac	20
	Total Lecture=	60

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COURSE: B.S.c SEMISTER V

SESSION: 2018-2021

PAPER NAME: Biostatistics

PAPER NO: DSE-II

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1 Sampling (Data collection) Primary Data Secondary data UNIT-2 Graphical Representation of data	15
02.	2.1 Diagrammatic Representation: Histogram & Pie Diagram UNIT-4. Measurement of central tendency	15
03.	4.1 Mean 4.2 median 4.3 mode	15
04.	UNIT-5 Measurement of Variation standard deviation Standard error of Mean UNIT-6 Test of Significance Chi square test student 't' test	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER VI

SESSION: 2018-2021

PAPER NAME: Molecular Biology & Biotechnology

PAPER NO: Core 13

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1. Nucleic Acids 1.1 Mechanism of DNA replication in prokaryote Mechanism of transcription in prokaryote Mechanism of translation in Prokaryote	15
02.	UNIT 2. Gene Regulation 2.1 Concepts of operon (Positive& Negative; Inducible & Repressible) 2.3 Lac operon	15
03.	UNIT 3.DNA damage & DNA repair	15
04.	UNIT-4 Biotechnology Tools: Restriction enzymes, Cloning Vectors Construction of recombinant DNA Transgenic animals, a concept DNA fingerprinting	15
	Total Lecture=	60

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SESSION: 2018-2021

PAPER NAME: Medical Zoology

PAPER NO: Core 14

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1 Pathogenicity, clinical features, prophylaxis and control of pathogenic protozoan Entamoeba histolytica Leishmania donovani Trypanosoma UNIT-2 Pathogenic Helminthes parasites ,clinical Features ,Control and prophylaxis	15
02.	2. 1 Taenia 2.2 Wuchereria 2.3 Ascaris	15
03.	UNIT-3 Vector Biology Mosquito (Anopheles Female), Yellow Fever ,Dengue Fever,(Aedes)Filariasis (Culex Female) Epidimic typhus ticks (pediculus)	15
04.	UNIT-4 Non Vector Diseases Typhoid Cholera 4.4 HIV UNIT-5 General Account of Vaccine & Vaccination, Eradication Programme (Polio & AIDS)	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER VI

SESSION: 2018-2021

PAPER NAME: WILD LIFE CONSERVATION AND MANAGEMENT

PAPER NO: DSE-III

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	Unit 1: Wild Life- Depletion & conservation; Importance of conservation;	15
02.	Unit 2:, Faecal analysis of ungulates and carnivores; Faecal samples, slide preparation, Hair identification, Pug marks and census method.	15
03.	Unit 3: National Organisations involved in wild life conservation; wild life Legislation- Wild protection act 1972, its amendments and implementation, Eco-tourism/ Wild life tourism in forests.	15
04.	Unit 4: Protected areas -National parks and sanctuaries, community reserve; Important features of protected areas in India; Project Tiger - Tiger reserves in India ;	15
	Total Lecture=	60

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COURSE: B.S.c SEMISTER VI

SESSION: 2018-2021

PAPER NAME: PEST & PEST MANAGEMENT

PAPER NO: DSE-IV

SL. No	Topic/Sub Topic	Expected No. of Lecture
01.	UNIT-1 Fundamentals of Pest management Pest : Definition and types of pest	20
02.	UNIT-2 Practical approach to pest management Integrated pest management : Mechanical, biological, chemical, genetic control; common pesticides and insecticides , Nomenclature , Mode of action , tools & techniques for pesticide application	20
03.	UNIT-3 Study of Pest in laboratory and field Biology, damage and management of Pest of Paddy and Sugar cane Recommended Books PEST & PEST MANAGEMENT	20
	Total Lecture=	60

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