DEPARTMENT OF ZOOLOGY

EVEN SEMESTER: ACADEMIC PLANNER 2025

II SEMESTER - Diversity of Life-II (PROTOCHORDATA TO MAMMALIA)

Week/Month and Date		Day	Portions Planned for 1 hour	Teacher
FEB	1st week	1	**Unit-I** 1.1 General characters of chordates. Origin of chordates	CB
		2	**Unit-IV** Chapter 5: Class Reptilia • General characters and outline classification of modern reptiles with suitable examples.	RB
			Unit-III Chapter 5: Class Reptilia • General characters and outline classification of modern reptiles with suitable examples	RB
		3	**Unit-III** Chapter 3: Super class: Pisces • Salient features and classification up to subclasses- • Differences between Chondrichthyes and Osteichthyes	DL
	2nd week	1	**Unit-I** 1.1 Basic Chordate characters and outline classification up to classes.	CB
		2	**Unit-III** Chapter 5: Class Reptilia • General characters and outline classification of modern reptiles with suitable examples	RB
			Adaptive radiation in extinct reptiles with suitable examples	RB
		3	**Unit-III** Scoliodon: Morphology, digestive system, circulatory system – afferent arterial system, neuromast organs (Lateral line sensory system and Ampullae of Lorenzini) and urinogenital system.	DL
	3rd week	1	**Unit-I** Basic Chordate characters and outline classification up to classes.	CB
		2	**Unit-III** Temporal fossae in reptiles.	RB
			Unit-III Poisonous and non-poisonous snakes, Poison apparatus in snakes, venom and its types. Common poisonous snakes of India. Anti-venom	RB
		3	**Unit-III** Scoliodon: Morphology, digestive system, circulatory system – afferent	DL

			arterial system, neuromast organs (Lateral line sensory system and Ampullae of Lorenzini) and urinogenital system.	
	4th week	1	**Unit-I** Cephalochordata: • Amphioxus – Morphology, digestive system, feeding mechanism and circulatory system.	**CB**
			Unit-III Poisonous and non-poisonous snakes, Poison apparatus in snakes, venom and its types. Common poisonous snakes of India. Anti-venom	**RB**
		2	**UNIT III i**nteresting features of Sphenodon.	**RB**
		3	**Unit-III** Parental care in fishes – (Hippocampus, Tilapia, Betta and Arius jella) • Salient features of Placodermi and Ostracodermi with examples.	**DL**

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
MAR	**1st week**	1	**Unit-I** Cephalochordata: • Amphioxus – Morphology, digestive system, feeding mechanism and circulatory system.	**CB**
		2	Chapter 6: Class Aves • General characters and classification up to orders with examples. • Differences between Ratitae and Carinatae	**RB**
			Interesting features of Archaeopteryx	**RB**
		3	**Unit-III** Parental care in fishes – (Hippocampus, Tilapia, Betta and Arius jella) • Salient features of Placodermi and Ostracodermi with examples.	**DL**
	2nd week	1	**Unit-I** Cephalochordata: • Amphioxus – Morphology, digestive system, feeding mechanism and circulatory system.	**CB**
		2	Flight adaptations in birds (Morphological, anatomical and physiological) •	**RB**
			Migration in Birds – Types, causes and theories.	**RB**
		3	**Unit-III** Dipnoi: Interesting features and their evolutionary significance.	**DL**
	3rd week	1	**Unit-I** Urochordata: • Type study of Herdmania- Morphology, tadpole of Herdmania and retrogressive metamorphosis	**CB**
		2	Chapter 7: Class Mammalia • General characters and classification up to subclasses (Prototheria, Metatheria and Eutheria) with suitable examples	**RB**

			Chapter 7: Class Mammalia • General characters and classification up to subclasses (Prototheria, Metatheria and Eutheria) with suitable examples	**RB**
		3	**Unit-I**V : Class Amphibia • General characters and classification of class Amphibia up to living orders, with suitable examples.	**DL**
	4th week	**1**	**Unit-I** Urochordata: • Type study of Herdmania- Morphology, tadpole of Herdmania and retrogressive metamorphosis	**CB**
		2	**Unit-IV** Interesting features of mammalian orders- Insectivora, Carnivora (Pinnipedia and Fissipedia), Chiroptera (Mega and Micro), Cetacea (Mystoceti and Odontoceti), Proboscidia (Indian Elephant and African Elephant), Ungulata (Perissodactyla and Artiodactyla) and Primates (Platyrhini and Catarhini) with examples..	**RB**
			Unit-IV Interesting features of mammalian orders- Insectivora, Carnivora (Pinnipedia and Fissipedia), Chiroptera (Mega and Micro), Cetacea (Mystoceti and Odontoceti), Proboscidia (Indian Elephant and African Elephant), Ungulata (Perissodactyla and Artiodactyla) and Primates (Platyrhini and Catarhini) with examples.	**RB**
		3	**Unit-IV** : Class Amphibia • General characters and classification of class Amphibia up to living orders, with suitable examples.	**DL**

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
APRIL	**1st week**	**1**	**Unit-I** Urochordata: • Type study of Herdmania- Morphology, tadpole of Herdmania and retrogressive metamorphosis.	**CB**
		2	**Unit-IV** Chapter 8: Dentition in mammals • Definition, structure of molar tooth	**RB**

			Unit-IV Types – Morphological, based on attachment, succession and kinds of teeth. Significance of teeth.	**RB**
		3	**Unit-II** Neoteny and Paedogenesis • Parental care in Amphibia – (Pipa, Ichthyophis, Alytes, Gastrothecus)	**DL**
	2nd week	**1**	**Unit- I** Urochordata: • Type study of Herdmania- Morphology, tadpole of Herdmania and retrogressive metamorphosis	**CB**
		2	**Unit-IV** Types – Morphological, based on attachment, succession and kinds of teeth. Significance of teeth.	**RB**
			Unit-IV Dental formula (Horse, Dog, Man, Cat, Rabbit and Elephant)	**RB**
		3	**Unit-II** Neoteny and Paedogenesis • Parental care in Amphibia – (Pipa, Ichthyophis, Alytes, Gastrothecus)	**DL**
	3rd week	**1**	**Unit-II**Chapter 2: Agnatha • General characters and classification up to classes, Differences between lampreys and hag fishes.	**CB**
		2	**Unit-IV** **p**attern of cheek teeth (Bunodont, Secodont, Selenodont and Lophodont).	**RB**
			Unit-IV Evolution of molar tooth.	**RB**
		3	**Unit-IV** Origin of Amphibia.	**DL**
	4th week	**1**	**Unit-II**Chapter 2: Agnatha • General characters and classification up to classes, Differences between lampreys and hag fishes.	**CB**
		2		**RB**
				RB
		3	SEMINAR	**DL**

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
MAY	**1st week**	**1**	**Unit-II** Chapter 2: Agnatha • General characters and classification up to classes, Differences between lampreys and hag fishes.**Unit-I** Urochordata: • Type study	**CB**

			of Herdmania- Morphology, tadpole of Herdmania and retrogressive metamorphosis.	
		2	**Unit-IV** Chapter 8: Dentition in mammals • Definition, structure of molar tooth	**RB**
			Unit-IV Types – Morphological, based on attachment, succession and kinds of teeth. Significance of teeth.	**RB**
		3	**Unit-II** Neoteny and Paedogenesis • Parental care in Amphibia – (Pipa, Ichthyophis, Alytes, Gastrothecus)	**DL**
	2nd week	1	**Unit-II** Chapter 2: Agnatha • General characters and classification up to classes, Differences between lampreys and hag fishes.	**CB**
		2	**Unit-IV** Types – Morphological, based on attachment, succession and kinds of teeth. Significance of teeth.	**RB**
			Unit-IV Dental formula (Horse, Dog, Man, Cat, Rabbit and Elephant)	**RB**
		3	**Unit-II** Neoteny and Paedogenesis • Parental care in Amphibia – (Pipa, Ichthyophis, Alytes, Gastrothecus)	**DL**
	3rd week	1	**Unit-II**Chapter 2: Agnatha • General characters and classification up to classes, Differences between lampreys and hag fishes.	**CB**
		2	**Unit-IV** attern of cheek teeth (Bunodont, Secodont, Selenodont and Lophodont).	**RB**
			Unit-IV Evolution of molar tooth.	**RB**
		3	**Unit-IV** Origin of Amphibia.	**DL**
	4th week	1	**Unit-II** Ammocoete larva and its significance. REVISION	**CB**
		2	SEMINAR	**RB**
			SEMINAR	**RB**
		3	SEMINAR	**DL**

Name of the Department		ZOOLOGY	2025 EVEN SEMESTER	
Semester		4	Paper : Immunology, Biostatics and Bioinformatics	
Week/ Month and Date		Day	Portions Planned for 1 hour	Teacher
	2ND week	1	Defence against diseases: Introduction, First and second line of defence,	DL
		2	Recombinant DNA Technology: Introduction, steps involved	RB
		3	Antigens and haptens: Properties (foreignness, molecular size, heterogeneity).	CB
		4		
FEB	3rd week	1	Innate and acquired immunity; Antigen presenting cells (APC's)	DL
		2	Restriction Enzymes and Ligases. Nucleic acid modifying enzymes.	RB
		3	B and T cell epitopes	CB
		4		
march	1st week	1	Role of B and T-lymphocytes (Humoral immunity and cell mediated immunity), f immunity.	DL
		2	Gene cloning Vector: Concept of plasmids-pBR322, Lambda phage vectors, Cosmids.	RB
		3	Structure of IgG and functions of different classes of immunoglobulins	CB
		4		
	2nd week	1	Primary and secondary immune response. Types	DL
		2	Gene transfer techniques (Direct and indirect).	RB
		3	Structure of IgG and functions of different classes of immunoglobulins	CB
		4		

Name of the Department	ZOOLOGY	Subject Title -- --	
Semester	2	Paper - 2	
Week/Month and Date	Day	Portions Planned for 1 hour	Teacher
MARCH 3rd week	1	Functional aspects of organs of the Immune system - Thymus and bonemarrow, spleen, Lymph Node, Small intestine and Liver (Peyer's patchesand Von Kupffer cells).	DL
	2	Screening and selection of recombinant colonies.	RB
	3	Major histocompatibility complex - Structure of MHC I & II	CB
	4		
4th week	1	Functional aspects of organs of the Immune system - Thymus and bone marrow, spleen, Lymph Node, Small intestine and Liver (Peyer's patches and Von Kupffer cells).	DL
	2	Production of Human Recombinant insulin and Monoclonal antibodies(Hybridoma technology).	RB
	3	Major histocompatibility complex - Structure of MHC I	CB
	4		
APRIL 1ST week	1	Functional aspects of organs of the Immune system - Thymus and bone marrow, spleen, Lymph Node, Small intestine and Liver (Peyer's patches and Von Kupffer cells).	DL
	2	Production of Human Recombinant insulin and Monoclonal antibodies (Hybridoma technology).	RB
	3	Vaccines: Types and Uses - Immunization schedule for children.	CB
	4		

	2ND week	1	Functional aspects of organs of the Immune system - Thymus and bonemarrow, spleen, Lymph Node, Small intestine and Liver (Peyer's patchesand Von Kupffer cells).	DL
		2	Production of Human Recombinant insulin and Monoclonal antibodies(Hybridoma technology).	RB
		3		

Name of the Department	ZOOLOGY	Subject Title -- --	
Semester	2	Paper -2	
Week/ Month and Date	Day	Portions Planned for 1 hour	Teacher
MAY 3RD week	1	Transgenic animals (Transgenic cow, Transgenic Fish); Transgenic plants (Cry protein); Gene silencing (Knock out mouse).	DL
	2	Production of Human Recombinant insulin and Monoclonal antibodies (Hybridoma technology).	RB
	3	Measures of central tendency: Mean, Median, Mode.	CB
	4		
4TH week	1	Transgenic animals (Transgenic cow, Transgenic Fish); Transgenic plants (Cry protein); Gene silencing (Knock out mouse).	DL
	2		RB
	3	Data summarizing: Frequency distribution, Graphical presentation - bar diagram,	CB
	4		

MAY	1ST week	1	Databases: Sequence and structural	DL
		2		RB
		3	Data summarizing: Frequency distribution, Graphical presentation - bar diagram,	CB
		4		
	2ND week	1	Databases: Sequence and structural	DL
		2	Revision	RB
		3	Data summarizing: Frequency distribution, Graphical presentation -pie diagram, histogram.	CB
		4		

Name of the Department	ZOOLOGY	Subject Title --	
Semester	2	Paper - 2	
Week/Month and Date	Day	Portions Planned for 1 hour	Teacher
MAY 1st week	1	Sequence analysis (homology): Pairwise and Multiple Sequence alignment- BLAST, CLUSTALW, Sequence alignment- FASTA.	DL
	2	Brief account of Biosensors.	RB
	3	Elementary idea of probability and its applications, Measures of dispersion: Range, Standard Deviation, Variance.	CB
	4		
2nd week	1	Sequence analysis (homology): Pairwise and Multiple Sequence alignment- BLAST, CLUSTALW, Sequence alignment- FASTA.	DL

		2	Applications of Gene Therapy in SCID	RB
		3	Correlation and Regression. Tests of significance: F-test, ANOVA, t-test and Chi square test	CB
		4		
	3rd week	1	Scope and applications of Bioinformatics.	DL
		2	Applications of Gene Therapy in SCID	RB
		3	Immunity against diseases of viral, bacterial and protozoan infections	CB
		4		
	4th week	1	Scope and applications of Bioinformatics	DL
		2	seminar	RB
		3	Transplantation immunology: Transplantation of organ- Types, graftrejection and Immuno-suppressors.	CB
		4		

Name of the Department	**ZOOLOGY**	**Subject Title --**	**Developmental biology and Organic evolution 2025**
Semester	6	**Paper - 7**	

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
FEB	**2nd week**	**1**	Unit -II- 2.1- Developmental Biology- Blastulation- Amphioxus	**DL**
		2	Unit-I-1.1-Developmental biology- Introduction, definition & scope	RB
		3	Unit -III-3.1- Neo- darwinism ;- Darwinism	**CB**
	3rd week	**1**	Unit -II- 2.1- Developmental Biology- Blastulation- Frog and Chick	**DL**
		2	Unit-I-1.1- Historical review theories	RB
		3	Unit -III-3.2- Role of evolutionary forces in speciation	**CB**
	4th week	**1**	Unit -II- 2.2- Fate maps- methods and cell lineage	**DL**
		2	Unit-I-1.2- Gametogenesis-Spermatogenesis- Structure of sperm	RB
		3	Unit -III-3.2- Genetic drift	**CB**
MARCH	**1st week**	**1**	Unit -II- 2.2- Fate maps- presumptive organ forming areas	**DL**
		2	Unit-I-1.2- Gametogenesis-Oogenesis	RB
		3	Unit -III-3.2- Natural selection	**CB**

Name of the Department	**ZOOLOGY**	**Subject Title --**	**Developmental biology and Organic evolution**
Semester	6	**Paper - 7**	

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
	2nd wee	**1**	Unit -II- 2.3 -a- Gastrulation in Amphioxus- Introduction	**DL**

	k	2	Unit-I-1.2- Types of eggs	RB
		3	Unit -III-3.2-Isolation	**CB**
	3rd week	1	Unit -II- 2.3-a- Gastrulation - in Frog	**DL**
		2	Unit-I-1.2- Mosaic and regulative eggs	RB
		3	Unit -III-3.2- Speciation	**CB**
	4th week	1	Unit -II- 2.3-a- Gastrulation - in Chick	**DL**
		2	Unit-I-1.2- Types of egg membranes and significance	RB
		3	Unit -III-3.3- Evidences of Organic evolution	**CB**
APRIL	**1st week**	1	Unit -II- 2.3 -b- Neurulation- post- neurular development	**DL**
		2	Unit-I-1.2- Cleidoic egg and its significance	RB
		3	Unit -III-3.3- Palaeontological evidences	**CB**

Name of the Department	**ZOOLOGY**	**Subject Title --**	**Developmental biology and Organic evolution**
Semester	6	**Paper - 7**	

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
MARCH	**2nd week**	1	Unit -II- 2.3-b- Metamorphosis in Frog	**DL**
		2	Unit-I-1.3- Reproductive cycles	RB
		3	Unit -III-3.3- Palaeontological evidences	**RS**
	3rd week	1	Unit -II- 2.4 - Role of organisers- Transplantation experiments	**DL**
		2	Unit-I-1.4- Patterns of development with examples	RB
		3	Unit -III-3.3- Morphological and anatomical evidences	**CB**

	4th week	1	Unit -II- 2.4 - Role of organizers- Chemistry of organizer	**DL**
		2	Unit-I-1.6- Fertilization	RB
		3	Unit -III-3.3- Embryological evidences	**CB**
APRIL	1ST WEK	1	Unit -II- 2.5 – Foetal membranes in chick	**DL**
		2	Unit-I-1.6- Mono and Polyspermic fertilization and significance	RB
		3	Unit -III-3.4- Evolution of Man	**CB**

Name of the Department	**ZOOLOGY**	**Subject Title --**	**Developmental biology and Organic evolution**
Semester	6	**Paper - 7**	

Week/Month and Date		**Day**	**Portions Planned for 1 hour**	**Teacher**
APRIL	2nd week	1	Unit -II- 2.5 – Foetal membranes in chick- functions	**DL**
		2	Unit-I-1.6- Types of blocks for polyspermy	RB
		3	Unit -III-3.4- Evolution of Man	**CB**
	3rd week	1	Seminar	**DL**
		2	Unit-I-7- Cleavage,	RB
		3	Unit -III-3.4- Evolution of Man	**CB**
	4th week	1	Seminar	**DL**
		2	Unit-I.7-- Cleavage,	CB
		3	Unit – II 2.5- Placenta types	RB
MAY	1ST WEEK	1	Revision	**DL**
		2	Revision	CB

		3	Unit – II 2.5- Placenta types	RB

DEPARTMENT OF ZOOLOGY

EVEN SEMESTER : ACADEMIC PLANNER 2025

VI SEMESTER PAPER- 8 -- ENVIRONMENTAL BIOLOGY, WILDLIFE MANAGEMENT &CONSERVATION

Week/Month and Date		Day	Portions Planned for 1 hour	Teacher
FEB	1st week	1	**Unit-I** 1.1 Ecology: Introduction to ecology, Definition, ecosystem, trophic levels, food chain and foodweb.	CB
		2	**Unit-IV 1.1 :** Values of wildlife	RB
		3	**Unit-III 3.1 Wildlife Conservation:** Causes and depletion of wildlife	DL
	2nd week	1	**Unit-I** 1.1 Ecology: Introduction to ecology, Definition, ecosystem, trophic levels, food chain and foodweb.	CB
		2	**Unit-IV 1.1 :** Values of wildlife	RB
		3	**Unit-III 3.1 Wildlife Conservation:** Causes and depletion of wildlife	DL
	3rd week	1	**Unit-I** 1.1 Ecology: Introduction to ecology, Definition, ecosystem, trophic levels, food chain and foodweb.	CB
		2	**Unit-IV 1. 1.2** inventory and classification of wetlands and their biotic components	RB
		3	**Unit-III 3.1 Wildlife Conservation:** Causes and depletion of wildlife	DL
	4th week	1	**Unit-I** 1.2 Aquatic environment (Pond and marine)	CB
		2	**Unit-IV 1. 1.2** inventory and classification of wetlands	RB

			and their biotic components	
		3	**Unit-III 3.2** Ex-situ and in-situ conservation, National parks, Wildlife sanctuaries, biosphere reserve.	**DL**

Week/Month and Date		Day	Portions Planned for 1 hour	Teacher
march	**1st week**	1	**Unit-I** 1.3 Biomes – definition, Terrestrial (Tundra, alpine, forest, tropical savanna, grassland,desert, wetland)	**CB**
		2	**Unit-IV 1. 1.2** inventory and classification of wetlands and their biotic components	**RB**
		3	**Unit-III 3.2** Ex-situ and in-situ conservation, National parks, Wildlife sanctuaries, biosphere reserve.	**DL**
	2nd week	1	**Unit-I** 1.3 Biomes – definition, Terrestrial (Tundra, alpine, forest, tropical savanna, grassland,desert, wetland)	**CB**
		2	**Unit-IV 1. 1.3** General strategies and issues	**RB**
		3	**Unit-III 3.2** Ex-situ and in-situ conservation, National parks, Wildlife sanctuaries, biosphere reserve.	**DL**
	3rd week	1	**Unit-I** 1.3 Biomes – definition, Terrestrial (Tundra, alpine, forest, tropical savanna, grassland,desert, wetland)	**CB**
		2	**Unit-IV 1. 1.4** concept of home range, wildlife corridors and territory,	**RB**
		3	**Unit-III 3.2** Project tiger.Project Elephant, Project Lion	**DL**
	4th week	1	**Unit-I** 1.4 Ecological factors (Biotic and Abiotic)	**CB**
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	**RB**
		3	**Unit-III 3.2** Project tiger.Project Elephant, Project Lion	**DL**

Week/Month and Date	Day	Portions Planned for 1 hour	Teacher

APRIL	1st week	1	**Unit-II Pollution: 2.1** Definition, types (air, soil, water and thermal), ozone layer depletion, bioaccumulation, Biomagnification and bioremediation.	**CB**
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	**RB**
		3	**Unit-III 3.2** Breeding in captivity, Zoological gardens,	**DL**
	2nd week	1	**Unit-II Pollution: 2.1** Definition, types (air, soil, water and thermal), ozone layer depletion, bioaccumulation, Biomagnification and bioremediation.	**CB**
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	**RB**
		3	**Unit-III 3.2** Breeding in captivity, Zoological gardens,	**DL**
	3rd week	1	**Unit-II Pollution: 2.1** Definition, types (air, soil, water and thermal), ozone layer depletion, bioaccumulation, Biomagnification and bioremediation.	**CB**
		2	SEMINAR	**RB**
		3	SEMINAR	**DL**
	4th week	1	**Unit-II Pollution: 2.1** Definition, types (air, soil, water and thermal), ozone layer depletion, bioaccumulation, Biomagnification and bioremediation.	**CB**
		2	SEMINAR	**RB**
		3	**Unit-III 3.2** Wildlife Protection Act 1972.	**DL**

Week/Month and Date		Day	Portions Planned for 1 hour	Teacher
MAY	1st week	1	**Unit-II Pollution: 2.2** Effects of all pollution types on animals and plants	**CB**
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	**RB**
		3	**Unit-III 3.2** Wildlife Protection Act 1972.	**DL**

Week/Month and Date		Day	Portions Planned for 1 hour	Teacher
APRIL	1st week	1	**Unit-II Pollution: 2.2** Effects of all pollution types on animals and plants	CB
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	RB
		3	**Unit-III 3.2** Wildlife Protection Act 1972.	DL
	2nd week	1	**Unit-II Pollution: 2.2** Effects of all pollution types on animals and plants	CB
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	RB
		3	**Unit-III 3.2** Breeding in captivity, Zoological gardens,	DL
	3rd week	1	**Unit-II Pollution: 2.2** Effects of all pollution types on animals and plants	CB
		2	**Unit-IV 1. 1.5** animal census, tracing movement and remote sensing and GIS.	RB
		3	SEMINAR	DL
	4th week	1	SEMINAR	CB
		2	SEMINAR	RB
		3	REVISION	DL