

DEPARTMENT OF ZOOLOGY
LESSION PLAN
SESSION 2023-24
SEMESTER – V

NAME OF TEACHER: DR. SUTAPA BISWAS

PAPER ALLOTTED: ZOOADSE01T

Month	Paper	Topic	No of classes
September (25.09.2023) And October 2023	ZOOADSE01T	<p style="text-align: center;">Unit 1 Introduction to Animal Behaviour</p> <p>A brief history of animal behaviour studies including the works of Fabre, Darwin, Von Frisch, Lorenz, Tinbergen, Jane Goodal, Biruté Galdikas, Dian Fossey, Salim Ali, Gopal Bhattacharyya, M. K. Chandrashekhar, Raghavendra Gadagkar.</p> <p>2. The objectives of modern animal behaviour studies: Tinbergen's four questions.</p> <p>3. Methods of studying behaviours: observation vs Watching, Ad libitum observations, Focal animal studies, Instantaneous scan, etc.</p> <p>4. Branches of Animal Behaviour Studies</p>	10
	ZOOADSE01T	<p style="text-align: center;">Unit 2 Behaviour of Individuals</p> <p style="text-align: center;">Reflexes and Orientations</p> <p>2. Instinct</p> <p>3. Learning: Imprinting and other Programmed Learning, Habituation, Innovations and Cultural Transmission / Social Learning</p>	6
	ZOOADSE01T	<p style="text-align: center;">Unit 3 Social and Sexual Behaviour</p> <p>Social Behaviour: Concept of Society; Communication and the senses Altruism;</p> <p>2. Insects' society with Honey bee as example; Foraging in honey bee and advantages of the waggle dance.</p> <p>3. Sexual Behaviour: Asymmetry of sex, Sexual dimorphism, Mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Sexual conflict in parental care. Pheromones.</p>	6
<p>PUJA VACATION (19.10.2023 to 15.11.2023)</p>			
November 2023 to 2 nd Week of December 2023	And ZOOADSE01T	<p style="text-align: center;">Unit 4 Introduction to Chronobiology</p> <p>1. Historical developments in chronobiology;</p> <p>2. Biological oscillation: the concept of Average, amplitude, phase and period</p> <p>3. Adaptive significance of biological clocks</p>	8
3 rd Week of December 2023		REVISION CLASSES	4

26.12.2023 to 02.01.2024 2 nd week of January 2024		Internal Examination & Class for Slow Learners	6
27.01.2024		END SEMESTER EXAMINATION	
Total Classes			40

NAME OF TEACHER: DR. NITHAR RANJAN MADHU

PAPER ALLOTTED: ZOOADSE01T

Month	Paper	Topic	No of classes
September (25.09.2023) And October 2023	ZOOADSE01T	<p>Unit 1 Introduction to Animal Behaviour A brief history of animal behaviour studies including the works of Fabre, Darwin, Von Frisch, Lorenz, Tinbergen, Jane Goodal, Biruté Galdikas, Dian Fossey, Salim Ali, Gopal Bhattacharyya, M. K. Chandrashekhar, Raghavendra Gadagkar.</p> <p>2. The objectives of modern animal behaviour studies: Tinbergen's four questions.</p> <p>3. Methods of studying behaviours: observation vs Watching, Ad libitum observations, Focal animal studies, Instantaneous scan, etc.</p> <p>4. Branches of Animal Behaviour Studies</p>	10
	ZOOADSE01T	<p>Unit 2 Behaviour of Individuals Reflexes and Orientations</p> <p>2. Instinct</p> <p>3. Learning: Imprinting and other Programmed Learning, Habituation, Innovations and Cultural Transmission / Social Learning</p>	6
November 2023	ZOOADSE01T	<p>Unit 3 Social and Sexual Behaviour Social Behaviour: Concept of Society; Communication and the senses Altruism;</p> <p>2. Insects' society with Honey bee as example; Foraging in honey bee and advantages of the waggle dance.</p> <p>3. Sexual Behaviour: Asymmetry of sex, Sexual dimorphism, Mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Sexual conflict in parental care. Pheromones.</p>	6
PUJA VACATION (19.10.2023 to 15.11.2023)			
December 2023	ZOOADSE01T	<p>Unit 4 Introduction to Chronobiology</p> <p>1. Historical developments in chronobiology;</p> <p>2. Biological oscillation: the concept of Average, amplitude, phase and period</p> <p>3. Adaptive significance of biological clocks</p>	6

3 rd Week of December 2023		REVISION CLASSES	6
26.12.2023 to 02.01.2024 2 nd week of January 2024		Internal Examination & Class for Slow Learners	6
27.01.2024		END SEMESTER EXAMINATION	
Total Classes			40

NAME OF TEACHER: DR. SOUMOSISH PAUL

PAPER ALLOTTED: ZOOACOR11T

Month	Paper	Topic	No of classes
September 2023 (25.09.2023)	ZOOACOR11T	Unit 7: DNA Repair Mechanisms Types of DNA repair mechanisms, RecBCD model in prokaryotes, nucleotide and base excision repair, SOS repair	4
	ZOOACOR11T	Unit 8: Molecular Lab Techniques PCR, Western and Southern blot, Northern Blot, Sanger DNA sequencing, cDNA technology	4
October 2023	ZOOACOR12T	Unit 1: Mendelian Genetics and its Extension Background of Mendel's experiments Principles of Mendelian inheritance, Incomplete dominance and co-dominance, Epistasis, Multiple alleles, Lethal alleles, Pleiotropy, Sex-linked, sex- influenced and sex-limited inheritance, Polygenic Inheritance.	6
	ZOOACOR12T	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Linkage and Crossing Over, molecular basis of crossing over, Measuring Recombination frequency and linkage intensity using three factor crosses, Interference and coincidence	6
PUJA VACATION (19.10.2023 to 15.11.2023)			
November 2023	ZOOACOR12T	Unit 6: Recombination in Bacteria and Viruses Conjugation, Transformation, Transduction, Complementation test in Bacteriophage	6
December 2023	ZOOACOR12P	1. Chi-square analyses Statistical tests of data and decision making Chi square test for goodness of fit and student t test for comparing means of two small samples from normal populations (paired/unpaired)	8

3rd Week of December 2023		REVISION CLASSES	6
26.12.2023 to 02.01.2024 2 nd week of January 2024		Internal Examination & Class for Slow Learners	6
27.01.2024		END SEMESTER EXAMINATION	
Total Classes			46

NAME OF TEACHER: DR. PHULJHURI CHAKRABORTY

PAPER ALLOTTED: ZOOADSE03T, ZOOGDSE01T

Month	Paper	Topic	No of classes
September 2023 (25.09.2023)	ZOOADSE03T	Unit 1: Introduction to Endocrinology General idea of Endocrine systems, Classification, Characteristic and Transport of Hormones, Neurosecretions and Neurohormones	4
October 2023	ZOOADSE03T	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis Structure of pineal gland, Secretions and their functions in biological rhythms and reproduction; Structure and functions of hypothalamus and Hypothalamic nuclei, Regulation of neuroendocrine glands, Feedback mechanisms; Structure of pituitary gland, Hormones and their functions, Hypothalamo-hypophysial portal system, Disorders of pituitary gland.	8
PUJA VACATION (19.10.2023 to 15.11.2023)			
November 2023	ZOOADSE03T	Unit 3: Peripheral Endocrine Glands Structure, Hormones, Functions and Regulation of Thyroid gland, Parathyroid, Adrenal, Pancreas, Ovary and Testis; Hormones in homeostasis, Disorders of endocrine glands	8
December 2023	ZOOGDSE01T	UNIT 4 Life history and pathogenicity of <i>Entamoeba histolytica</i> , <i>Plasmodium vivax</i> and <i>Trypanosoma gambiense</i>	6
	ZOOGDSE01T	UNIT 5 Life history and pathogenicity of <i>Ancylostoma duodenale</i> and <i>Wuchereria bancrofti</i> .	4
3 rd Week of December 2023		REVISION CLASSES	6
26.12.2023 to 02.01.2024 2 nd week of January 2024		Internal Examination & Class for Slow Learners	6

27.01.2024		END SEMESTER EXAMINATION	
Total Classes			42

NAME OF TEACHER: GOUTAM BISWAS

PAPER ALLOTTED: ZOOACOR1 1T, ZOOGDSE01T, ZOOADSE01T

Month	Paper	Topic	No of classes
September and October (25.09.2023)	ZOOACOR11T	Unit 1: Nucleic Acids Salient features of DNA and RNA Watson and Crick Model of DNA	4
	ZOOADSE01T	Unit 5: Biological Rhythm 1. Types and characteristics of biological rhythms: Short- and Long- term rhythms; Circadian rhythms; Tidal rhythms and Lunar rhythms; 2. Concept of synchronization and masking; Photic and non-photic zeitgebers; Circannual rhythms; 3. Photoperiod and regulation of seasonal reproduction of vertebrates; Role of melatonin.	6
	ZOOACOR11T	Unit 6: Gene Regulation Regulation of Transcription in prokaryotes: lac operon and trp operon; Regulation of Transcription in eukaryotes: Activators, enhancers, silencer, repressors, miRNA mediated gene silencing, Genetic imprinting	6
PUJA VACATION (19.10.2023 to 15.11.2023)			
November 2023	ZOOGDSE01T	UNIT 3 Brief account of Rickettsia prowazekii, Borrelia recurrentis and Treponema pallidum.	3
	ZOOGDSE01T	UNIT 5 Life history and pathogenicity of Ancylostoma duodenale and Wuchereria bancrofti	3
December 2023	ZOOGDSE01T	UNIT 6 Biology, Control and damage caused by Helicoverpa armigera, Pyrrilla perpusilla and Papilio demoleus, Callosobruchus chinensis, Sitophilus oryzae and Tribolium castaneum	8
3 rd Week of December 2023		REVISION CLASSES	6
26.12.2023 to 02.01.2024 2nd week of January 2024		Internal Examination & Class for Slow Learners	6
27.01.2024		END SEMESTER EXAMINATION	
Total Classes			40

NAME OF TEACHER: DIPTAK CHAKROBORTY

PAPER ALLOTTED: ZOOADSE03T

Month	Paper	Topic	No of classes
September 2023 (25.09.2023) and October 2023	ZOOADSE03T	Unit 3: Peripheral Endocrine Glands Structure, Hormones, Functions and Regulation of Thyroid gland, Parathyroid, Adrenal, Pancreas, Ovary and Testis; Hormones in homeostasis, Disorders of endocrine glands	6
	ZOOADSE03T	Unit 4: Regulation of Hormone Action 14 Mechanism of action of steroidal, non-steroidal hormones with receptors Bioassays of hormones using RIA & ELISA; Estrous cycle in rat and menstrual cycle in human; Multifaceted role of Vasopressin & Oxytocin; Hormonal regulation of parturition	8
PUJA VACATION (19.10.2023 to 15.11.2023)			
November and December 2023	ZOOADSE03T	Unit 4: Regulation of Hormone Action 14 Mechanism of action of steroidal, non-steroidal hormones with receptors Bioassays of hormones using RIA & ELISA; Estrous cycle in rat and menstrual cycle in human; Multifaceted role of Vasopressin & Oxytocin; Hormonal regulation of parturition	6
3 rd Week of Dec 2023		REVISION CLASSES	8
26.12.2023 to 02.01.2024 2nd week of January 2024		Internal Examination & Class for Slow Learners	6
27.01.2024		END SEMESTER EXAMINATION	
Total Classes			34

NAME OF TEACHER: SHRINKA GHOSH

PAPER ALLOTTED: ZOOACOR11T, ZOOACOR11P, ZOOGDSE01T

Month	Paper	Topic	No of classes
September 2023 (25.09.2023) and October 2023	ZOOACOR11T	Unit 2: DNA Replication Mechanism of DNA Replication in Prokaryotes, Semi-conservative, bidirectional and discontinuous Replication, RNA priming, Replication of telomeres	4
	ZOOACOR11T	Unit 3: Transcription Mechanism of Transcription in prokaryotes and eukaryotes, Transcription factors, Difference between prokaryotic and eukaryotic transcription	6
	ZOOACOR11T	Unit 4: Translation Mechanism of protein synthesis in prokaryotes, Ribosome structure and assembly in prokaryotes, fidelity of protein synthesis, aminoacyl tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain; Genetic code,	10

		Degeneracy of the genetic code and Wobble Hypothesis; Inhibitors of protein synthesis; Difference between prokaryotic and eukaryotic translation	
	PUJA VACATION (19.10.2023 to 15.11.2023)		
November 2023	ZOOACOR11T	Unit 5: Post Transcriptional Modifications and Processing of Eukaryotic RNA Capping and Poly A tail formation in mRNA; Split genes: concept of introns and exons, splicing mechanism, alternative splicing, exon shuffling, and RNA editing, Processing of tRNA	6
	ZOOACOR11P	1. Demonstration of polytene Chromosome from Drosophila /Chironomid larvae	4
	ZOOGDSE01T	Unit-1 Introduction to Host-parasite Relationship Host, Definitive host, Intermediate host, Parasitism, Symbiosis, Commensalism, Reservoir, Zoonosis	3
December 2023	ZOOGDSE01T	Unit-9 Poultry Farming Principles of poultry breeding, Management of breeding stock and broilers, Processing and preservation of eggs	4
	ZOOGDSE01T	Unit-7 Insects of Medical Importance Medical importance and control of Pediculus humanus corporis, Anopheles, Culex, Aedes, Xenopsylla cheopis	8
	ZOOGDSE01T	Unit-10 Fish Technology Genetic improvements in aquaculture industry; Induced breeding and transportation of fish seed	4
3rd Week of December 2023		REVISION CLASSES	
26.12.2023 to 02.01.2024 2nd week of January 2024		Internal Examination & Class for Slow Learners	6
27.01.2024		END SEMESTER EXAMINATION	
Total Classes			55